Maxxam Job #: B3K2315
Report Date: 2013/12/27

Apex Laboratories
Client Project #: A3K0592

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UA0789						
Sampling Date		2013/11/18 15:10						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	1.0 U	1.0	2.2	1.00	1.00		3444979
1,2,3,7,8-Penta CDD	pg/L	1.3 U	1.3	11	1.00	1.30		3444979
1,2,3,4,7,8-Hexa CDD	pg/L	3.2 J	1.3	11	0.100	0.320		3444979
1,2,3,6,7,8-Hexa CDD	pg/L	6.90 J	0.92	11	0.100	0.690		3444979
1,2,3,7,8,9-Hexa CDD	pg/L	7.3 J	1.1	11	0.100	0.730		3444979
1,2,3,4,6,7,8-Hepta CDD	pg/L	165	0.92	11	0.0100	1.65		3444979
Octa CDD	pg/L	1290	1.3	22	0.000300	0.387		3444979
Total Tetra CDD	pg/L	1.0 U	1.0	2.2				3444979
Total Penta CDD	pg/L	1.7 J	1.3	11				3444979
Total Hexa CDD	pg/L	44	1.1	11				3444979
Total Hepta CDD	pg/L	347	0.92	11				3444979
2,3,7,8-Tetra CDF **	pg/L	1.3 U (1)	1.3	2.2	0.100	0.130		3444979
1,2,3,7,8-Penta CDF	pg/L	1.6 U	1.6	11	0.0300	0.0480		3444979
2,3,4,7,8-Penta CDF	pg/L	1.7 U	1.7	11	0.300	0.510		3444979
1,2,3,4,7,8-Hexa CDF	pg/L	3.3 J	1.2	11	0.100	0.330		3444979
1,2,3,6,7,8-Hexa CDF	pg/L	1.98 J	0.97	11	0.100	0.198		3444979
2,3,4,6,7,8-Hexa CDF	pg/L	1.5 J	1.2	11	0.100	0.150		3444979
1,2,3,7,8,9-Hexa CDF	pg/L	1.5 U	1.5	11	0.100	0.150		3444979
1,2,3,4,6,7,8-Hepta CDF	pg/L	48 U (1)	48	11	0.0100	0.480		3444979
1,2,3,4,7,8,9-Hepta CDF	pg/L	3.8 J	1.4	11	0.0100	0.0380		3444979
Octa CDF	pg/L	128	1.2	22	0.000300	0.0384		3444979
Total Tetra CDF	pg/L	1.6 U (1)	1.6	2.2				3444979
Total Penta CDF	pg/L	6.7 J	1.6	11				3444979
Total Hexa CDF	pg/L	57	1.2	11				3444979
Total Hepta CDF	pg/L	91	1.2	11				3444979
TOTAL TOXIC EQUIVALENCY	pg/L					8.15		
Surrogate Recovery (%)								
C13-1234678 HeptaCDD	%	118						3444979

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UA0789						
Sampling Date		2013/11/18 15:10						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	97						3444979
C13-123478 HexaCDF	%	104						3444979
C13-123678 HexaCDD *	%	106						3444979
C13-12378 PentaCDD	%	130						3444979
C13-12378 PentaCDF	%	127						3444979
C13-2378 TetraCDD	%	84						3444979
C13-2378 TetraCDF	%	88						3444979
C13-OCDD	%	114						3444979

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Apex Laboratories
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DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UA0790						
Sampling Date		2013/11/18 09:45						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20131119	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	1.3 U	1.3	2.2	1.00	1.30		3444979
1,2,3,7,8-Penta CDD	pg/L	3.6 U (1)	3.6	11	1.00	3.60		3444979
1,2,3,4,7,8-Hexa CDD	pg/L	9.3 J	1.5	11	0.100	0.930		3444979
1,2,3,6,7,8-Hexa CDD	pg/L	25	1.1	11	0.100	2.50		3444979
1,2,3,7,8,9-Hexa CDD	pg/L	23	1.2	11	0.100	2.30		3444979
1,2,3,4,6,7,8-Hepta CDD	pg/L	639	1.1	11	0.0100	6.39		3444979
Octa CDD	pg/L	6830	1.5	22	0.000300	2.05		3444979
Total Tetra CDD	pg/L	2.0 U (1)	2.0	2.2				3444979
Total Penta CDD	pg/L	12 U (1)	12	11				3444979
Total Hexa CDD	pg/L	245	1.2	11				3444979
Total Hepta CDD	pg/L	1620	1.1	11				3444979
2,3,7,8-Tetra CDF **	pg/L	10.8	1.3	2.2	0.100	1.08		3444979
1,2,3,7,8-Penta CDF	pg/L	2.6 J	1.3	11	0.0300	0.0780		3444979
2,3,4,7,8-Penta CDF	pg/L	5.7 U (1)	5.7	11	0.300	1.71		3444979
1,2,3,4,7,8-Hexa CDF	pg/L	13	1.0	11	0.100	1.30		3444979
1,2,3,6,7,8-Hexa CDF	pg/L	5.72 J	0.87	11	0.100	0.572		3444979
2,3,4,6,7,8-Hexa CDF	pg/L	5.7 J	1.1	11	0.100	0.570		3444979
1,2,3,7,8,9-Hexa CDF	pg/L	1.3 U	1.3	11	0.100	0.130		3444979
1,2,3,4,6,7,8-Hepta CDF	pg/L	110 U (1)	110	11	0.0100	1.10		3444979
1,2,3,4,7,8,9-Hepta CDF	pg/L	9.82 J	0.97	11	0.0100	0.0982		3444979
Octa CDF	pg/L	217	1.3	22	0.000300	0.0651		3444979
Total Tetra CDF	pg/L	65.6	1.3	2.2				3444979
Total Penta CDF	pg/L	70	1.3	11				3444979
Total Hexa CDF	pg/L	193	1.1	11				3444979
Total Hepta CDF	pg/L	214	0.81	11				3444979
TOTAL TOXIC EQUIVALENCY	pg/L					25.8		
Surrogate Recovery (%)								
C13-1234678 HeptaCDD	%	121						3444979

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
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DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UA0790						
Sampling Date		2013/11/18 09:45						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20131119	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	100						3444979
C13-123478 HexaCDF	%	100						3444979
C13-123678 HexaCDD *	%	103						3444979
C13-12378 PentaCDD	%	130						3444979
C13-12378 PentaCDF	%	127						3444979
C13-2378 TetraCDD	%	84						3444979
C13-2378 TetraCDF	%	88						3444979
C13-OCDD	%	123						3444979

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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Apex Laboratories
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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0787						
Sampling Date		2013/11/18 13:20						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.035 J	0.019	0.095				3445740
3-MonoCB-(2)	ng/L	0.016 U	0.016	0.095				3445740
4-MonoCB-(3)	ng/L	0.018 U	0.018	0.095				3445740
22'-DiCB-(4)	ng/L	0.224	0.018	0.095				3445740
2,3-DiCB-(5)	ng/L	0.015 U	0.015	0.095				3445740
2,3'-DiCB-(6)	ng/L	0.042 J	0.013	0.095				3445740
2,4-DiCB-(7)	ng/L	0.013 U	0.013	0.095				3445740
2,4'-DiCB-(8)	ng/L	0.199	0.012	0.095				3445740
2,5-DiCB-(9)	ng/L	0.013 U	0.013	0.095				3445740
2,6-DiCB-(10)	ng/L	0.015 U	0.015	0.095				3445740
3,3'-DiCB-(11)	ng/L	0.436	0.013	0.095				3445740
DiCB-(12)+(13)	ng/L	0.013 U	0.013	0.19				3445740
3,5-DiCB-(14)	ng/L	0.013 U	0.013	0.095				3445740
4,4'-DiCB-(15)	ng/L	0.118	0.022	0.095				3445740
22'3-TriCB-(16)	ng/L	0.156	0.024	0.095				3445740
22'4-TriCB-(17)	ng/L	0.132	0.021	0.095				3445740
TriCB-(18)+(30)	ng/L	0.27	0.016	0.19				3445740
22'6-TriCB-(19)	ng/L	0.051 J	0.019	0.095				3445740
TriCB-(20) + (28)	ng/L	0.39	0.014	0.19				3445740
TriCB-(21)+(33)	ng/L	0.26	0.014	0.19				3445740
234'-TriCB-(22)	ng/L	0.166	0.014	0.095				3445740
235-TriCB-(23)	ng/L	0.015 U	0.015	0.095				3445740
236-TriCB-(24)	ng/L	0.015 U	0.015	0.095				3445740
23'4-TriCB-(25)	ng/L	0.031 J	0.014	0.095				3445740
TriCB-(26)+(29)	ng/L	0.068 J	0.014	0.19				3445740
23'6-TriCB-(27)	ng/L	0.021 J	0.014	0.095				3445740
24'5-TriCB-(31)	ng/L	0.341	0.013	0.095				3445740
24'6-TriCB-(32)	ng/L	0.081 J	0.013	0.095				3445740
23'5'-TriCB-(34)	ng/L	0.014 U	0.014	0.095				3445740

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0787						
Sampling Date		2013/11/18 13:20						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'4-TriCB-(35)	ng/L	0.013 U	0.013	0.095				3445740
33'5-TriCB-(36)	ng/L	0.012 U	0.012	0.095				3445740
344'-TriCB-(37)	ng/L	0.120	0.017	0.095				3445740
345-TriCB-(38)	ng/L	0.014 U	0.014	0.095				3445740
34'5-TriCB-(39)	ng/L	0.013 U	0.013	0.095				3445740
TetraCB-(40)+(41)+(71)	ng/L	0.163 J	0.020	0.29				3445740
22'34'-TetraCB-(42)	ng/L	0.079 J	0.024	0.095				3445740
22'35-TetraCB-(43)	ng/L	0.033 U	0.033	0.095				3445740
TetraCB-(44)+(47)+(65)	ng/L	0.245 J	0.020	0.29				3445740
TetraCB-(45)+(51)	ng/L	0.050 J	0.020	0.19				3445740
22'36'-TetraCB-(46)	ng/L	0.025 U	0.025	0.095				3445740
22'45-TetraCB-(48)	ng/L	0.055 J	0.020	0.095				3445740
TetraCB-(49)+TetraCB-(69)	ng/L	0.128 J	0.018	0.19				3445740
TetraCB-(50)+(53)	ng/L	0.032 J	0.020	0.19				3445740
22'55'-TetraCB-(52)	ng/L	0.223	0.018	0.095				3445740
22'66'-TetraCB-(54)	ng/L	0.0094 U	0.0094	0.095				3445740
233'4-TetraCB-(55)	ng/L	0.015 U	0.015	0.095				3445740
233'4'-Tetra CB(56)	ng/L	0.096	0.016	0.095				3445740
233'5-TetraCB-(57)	ng/L	0.014 U	0.014	0.095				3445740
233'5'-TetraCB-(58)	ng/L	0.014 U	0.014	0.095				3445740
TetraCB-(59)+(62)+(75)	ng/L	0.025 J	0.016	0.29				3445740
2344'-TetraCB -(60)	ng/L	0.053 J	0.015	0.095				3445740
TetraCB-(61)+(70)+(74)+(76)	ng/L	0.321 J	0.015	0.38				3445740
234'5-TetraCB-(63)	ng/L	0.013 U	0.013	0.095				3445740
234'6-TetraCB-(64)	ng/L	0.129	0.017	0.095				3445740
23'44'-TetraCB-(66)	ng/L	0.142	0.014	0.095				3445740
23'45-TetraCB-(67)	ng/L	0.014 U	0.014	0.095				3445740
23'45'-TetraCB-(68)	ng/L	0.013 U	0.013	0.095				3445740
23'55'-TetraCB-(72)	ng/L	0.014 U	0.014	0.095				3445740

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Sampling Date		2013/11/18 13:20						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'5'6-TetraCB-(73)	ng/L	0.014 U	0.014	0.095				3445740
33'44'-TetraCB-(77)	ng/L	0.024 J	0.017	0.095	0.000100	0.00000240		3445740
33'45-TetraCB-(78)	ng/L	0.015 U	0.015	0.095				3445740
33'45'-TetraCB(79)	ng/L	0.013 U	0.013	0.095				3445740
33'55'-TetraCB-(80)	ng/L	0.013 U	0.013	0.095				3445740
344'5-TetraCB-(81)	ng/L	0.018 U	0.018	0.095	0.000300	0.00000540		3445740
22'33'4-PentaCB-(82)	ng/L	0.037 J	0.021	0.095				3445740
PentaCB-(83)+(99)	ng/L	0.108 J	0.019	0.19				3445740
22'33'6-PentaCB-(84)	ng/L	0.061 U (1)	0.061	0.095				3445740
PentaCB-(85)+(116)+(117)	ng/L	0.036 J	0.015	0.29				3445740
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	0.166 J	0.016	0.57				3445740
PentaCB-(88)+(91)	ng/L	0.030 J	0.018	0.19				3445740
22'346'-PentaCB-(89)	ng/L	0.020 U	0.020	0.095				3445740
PentaCB-(90)+(101)+(113)	ng/L	0.203 J	0.016	0.29				3445740
22'355'-PentaCB-(92)	ng/L	0.038 J	0.019	0.095				3445740
PentaCB-(93)+(98)+(100)+(102)	ng/L	0.019 U	0.019	0.38				3445740
22'356'-PentaCB-(94)	ng/L	0.020 U	0.020	0.095				3445740
22'35'6-PentaCB-(95)	ng/L	0.164	0.018	0.095				3445740
22'366'-PentaCB-(96)	ng/L	0.010 U	0.010	0.095				3445740
22'45'6-PentaCB-(103)	ng/L	0.017 U	0.017	0.095				3445740
22'466'-PentaCB-(104)	ng/L	0.0087 U	0.0087	0.095				3445740
233'44'-PentaCB-(105)	ng/L	0.119	0.018	0.095	0.0000300	0.00000357		3445740
233'45-PentaCB-(106)	ng/L	0.016 U	0.016	0.095				3445740
233'4'5-PentaCB-(107)	ng/L	0.015 U	0.015	0.095				3445740
PentaCB-(108)+(124)	ng/L	0.015 U	0.015	0.19				3445740
PentaCB-(110)+(115)	ng/L	0.34	0.016	0.19				3445740
233'55'-PentaCB-(111)	ng/L	0.013 U	0.013	0.095				3445740
233'56-PentaCB-(112)	ng/L	0.014 U	0.014	0.095				3445740

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COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2344'5-PentaCB-(114)	ng/L	0.018 U	0.018	0.095	0.0000300	0.000000540		3445740
23'44'5-PentaCB-(118)	ng/L	0.244	0.018	0.095	0.0000300	0.00000732		3445740
23'455'-PentaCB-(120)	ng/L	0.013 U	0.013	0.095				3445740
23'45'6-PentaCB-(121)	ng/L	0.014 U	0.014	0.095				3445740
233'4'5'-PentaCB-(122)	ng/L	0.017 U	0.017	0.095				3445740
23'44'5'-PentaCB-(123)	ng/L	0.019 U	0.019	0.095	0.0000300	0.000000570		3445740
33'44'5-PentaCB-(126)	ng/L	0.018 U	0.018	0.095	0.100	0.00180		3445740
33'455'-PentaCB-(127)	ng/L	0.016 U	0.016	0.095				3445740
HexaCB-(128)+(166)	ng/L	0.055 U (1)	0.055	0.19				3445740
HexaCB-(129)+(138)+(163)	ng/L	0.40	0.030	0.29				3445740
22'33'45'-HexaCB-(130)	ng/L	0.034 U	0.034	0.095				3445740
22'33'46-HexaCB-(131)	ng/L	0.039 U	0.039	0.095				3445740
22'33'46'-HexaCB-(132)	ng/L	0.115	0.033	0.095				3445740
22'33'55'-HexaCB-(133)	ng/L	0.032 U	0.032	0.095				3445740
HexaCB-(134)+(143)	ng/L	0.035 U	0.035	0.19				3445740
HexaCB-(135)+(151)	ng/L	0.075 J	0.030	0.19				3445740
22'33'66'-HexaCB-(136)	ng/L	0.031 J	0.023	0.095				3445740
22'344'5-HexaCB-(137)	ng/L	0.034 U	0.034	0.095				3445740
HexaCB-(139)+(140)	ng/L	0.029 U	0.029	0.19				3445740
22'3455'-HexaCB-(141)	ng/L	0.060 J	0.031	0.095				3445740
22'3456-HexaCB-(142)	ng/L	0.034 U	0.034	0.095				3445740
22'345'6-HexaCB-(144)	ng/L	0.030 U	0.030	0.095				3445740
22'3466'-HexaCB-(145)	ng/L	0.023 U	0.023	0.095				3445740
22'34'55'-HexaCB-(146)	ng/L	0.037 J	0.029	0.095				3445740
HexaCB-(147)+(149)	ng/L	0.20	0.028	0.19				3445740
22'34'56'-HexaCB-(148)	ng/L	0.030 U	0.030	0.095				3445740
22'34'66'-HexaCB-(150)	ng/L	0.021 U	0.021	0.095				3445740
22'3566'-HexaCB-(152)	ng/L	0.023 U	0.023	0.095				3445740

RDL = Reportable Detection Limit
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QC Batch = Quality Control Batch
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
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Maxxam Job #: B3K2315
Report Date: 2013/12/27

Apex Laboratories
Client Project #: A3K0592

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0787						
Sampling Date		2013/11/18 13:20						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
HexaCB-(153)+(168)	ng/L	0.22	0.024	0.19				3445740
22'44'56'-HexaCB-(154)	ng/L	0.027 U	0.027	0.095				3445740
22'44'66'-HexaCB-(155)	ng/L	0.023 U	0.023	0.095				3445740
HexaCB-(156)+(157)	ng/L	0.045 J	0.019	0.19	0.0000300	0.00000135		3445740
233'44'6-HexaCB-(158)	ng/L	0.036 U (1)	0.036	0.095				3445740
233'455'-HexaCB-(159)	ng/L	0.018 U	0.018	0.095				3445740
233'456-HexaCB-(160)	ng/L	0.023 U	0.023	0.095				3445740
233'45'6-HexaCB-(161)	ng/L	0.023 U	0.023	0.095				3445740
233'4'55'-HexaCB-(162)	ng/L	0.018 U	0.018	0.095				3445740
233'4'5'6-HexaCB-(164)	ng/L	0.024 J	0.022	0.095				3445740
233'55'6-HexaCB-(165)	ng/L	0.025 U	0.025	0.095				3445740
23'44'55'-HexaCB-(167)	ng/L	0.020 U	0.020	0.095	0.0000300	0.000000600		3445740
33'44'55'-HexaCB-(169)	ng/L	0.021 U	0.021	0.095	0.0300	0.000630		3445740
22'33'44'5-HeptaCB-(170)	ng/L	0.075 J	0.023	0.095				3445740
HeptaCB-(171)+(173)	ng/L	0.028 U	0.028	0.19				3445740
22'33'455'-HeptaCB-(172)	ng/L	0.028 U	0.028	0.095				3445740
22'33'456'-HeptaCB-(174)	ng/L	0.061 J	0.026	0.095				3445740
22'33'45'6-HeptaCB-(175)	ng/L	0.024 U	0.024	0.095				3445740
22'33'466'-HeptaCB-(176)	ng/L	0.018 U	0.018	0.095				3445740
22'33'45'6'-HeptaCB-(177)	ng/L	0.033 J	0.028	0.095				3445740
22'33'55'6-HeptaCB-(178)	ng/L	0.025 U	0.025	0.095				3445740
22'33'566'-HeptaCB-(179)	ng/L	0.018 U	0.018	0.095				3445740
HeptaCB-(180)+(193)	ng/L	0.160 J	0.022	0.19				3445740
22'344'56-HeptaCB-(181)	ng/L	0.026 U	0.026	0.095				3445740
22'344'56'-HeptaCB-(182)	ng/L	0.025 U	0.025	0.095				3445740
22'344'5'6-HeptaCB-(183)	ng/L	0.035 J	0.022	0.095				3445740
22'344'66'-HeptaCB-(184)	ng/L	0.017 U	0.017	0.095				3445740
22'3455'6-HeptaCB-(185)	ng/L	0.030 U	0.030	0.095				3445740

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Report Date: 2013/12/27

Apex Laboratories
Client Project #: A3K0592

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0787						
Sampling Date		2013/11/18 13:20						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'34566'-HeptaCB-(186)	ng/L	0.018 U	0.018	0.095				3445740
22'34'55'6-HeptaCB-(187)	ng/L	0.073 J	0.023	0.095				3445740
22'34'566'-HeptaCB-(188)	ng/L	0.021 U	0.021	0.095				3445740
233'44'55'-HeptaCB-(189)	ng/L	0.013 U	0.013	0.095	0.0000300	0.000000390		3445740
233'44'56-HeptaCB-(190)	ng/L	0.022 U	0.022	0.095				3445740
233'44'5'6-HeptaCB-(191)	ng/L	0.020 U	0.020	0.095				3445740
233'455'6-HeptaCB-(192)	ng/L	0.021 U	0.021	0.095				3445740
22'33'44'55'-OctaCB-(194)	ng/L	0.039 J	0.023	0.095				3445740
22'33'44'56-OctaCB-(195)	ng/L	0.023 U	0.023	0.095				3445740
22'33'44'56'-OctaCB-(196)	ng/L	0.020 U	0.020	0.095				3445740
22'33'44'66'OctaCB-(197)	ng/L	0.014 U	0.014	0.095				3445740
OctaCB-(198)+(199)	ng/L	0.048 J	0.019	0.19				3445740
22'33'4566'-OctaCB-(200)	ng/L	0.013 U	0.013	0.095				3445740
22'33'45'66'-OctaCB-(201)	ng/L	0.013 U	0.013	0.095				3445740
22'33'55'66'-OctaCB-(202)	ng/L	0.018 U	0.018	0.095				3445740
22'344'55'6-OctaCB-(203)	ng/L	0.026 J	0.018	0.095				3445740
22'344'566'-OctaCB-(204)	ng/L	0.014 U	0.014	0.095				3445740
233'44'55'6-OctaCB-(205)	ng/L	0.019 U	0.019	0.095				3445740
22'33'44'55'6-NonaCB-(206)	ng/L	0.026 U	0.026	0.095				3445740
22'33'44'566'-NonaCB-(207)	ng/L	0.020 U	0.020	0.095				3445740
22'33'455'66'-NonaCB-(208)	ng/L	0.024 U	0.024	0.095				3445740
DecaCB-(209)	ng/L	0.016 U	0.016	0.095				3445740
Monochlorobiphenyl	ng/L	0.035	0.019	N/A			1	3445740
Dichlorobiphenyl	ng/L	1.02	0.022	N/A			5	3445740
Trichlorobiphenyl	ng/L	2.09	0.024	N/A			13	3445740
Tetrachlorobiphenyl	ng/L	1.76	0.033	N/A			15	3445740
Pentachlorobiphenyl	ng/L	1.49	0.023	N/A			11	3445740
Hexachlorobiphenyl	ng/L	1.20	0.039	N/A			10	3445740
Heptachlorobiphenyl	ng/L	0.436	0.030	N/A			6	3445740

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0787						
Sampling Date		2013/11/18 13:20						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Octachlorobiphenyl	ng/L	0.113	0.023	N/A			3	3445740
Nonachlorobiphenyl	ng/L	0.026 U	0.026	N/A			0	3445740
Decachlorobiphenyl	ng/L	0.016 U	0.016	N/A			0	3445740
Total PCB	ng/L	8.15	N/A	N/A				3445740
TOTAL TOXIC EQUIVALENCY	ng/L					0.00245		
Surrogate Recovery (%)								
C13-2,44'-TriCB-(28)	%	92						3445740
C13-22'33'44'55'6-NonaCB-(206)	%	94						3445740
C13-22'33'44'5-HeptaCB-(170)	%	101						3445740
C13-22'33'455'66'-NonaCB-(208)	%	96						3445740
C13-22'33'55'66'-OctaCB-(202)	%	94						3445740
C13-22'33'55'6-HeptaCB-(178)	%	105						3445740
C13-22'344'55'-HeptaCB-(180)	%	102						3445740
C13-22'34'566'-HeptaCB-(188)	%	85						3445740
C13-22'44'66'-HexaCB-(155)	%	80						3445740
C13-22'466'-PentaCB-(104)	%	71						3445740
C13-22'66'-TetraCB-(54)	%	66						3445740
C13-22'6-TriCB-(19)	%	52						3445740
C13-22'-DiCB-(4)	%	33						3445740
C13-233'44'55'6-OctaCB-(205)	%	100						3445740
C13-233'44'55'-HeptaCB-(189)	%	108						3445740
C13-233'44'-PentaCB-(105)	%	99						3445740
C13-233'55'-PentaCB-(111)	%	97						3445740
C13-23'44'55'-HexaCB-(167)	%	99						3445740
C13-2344'5-PentaCB-(114)	%	97						3445740
C13-23'44'5-PentaCB-(118)	%	98						3445740
C13-2'344'5-PentaCB-(123)	%	98						3445740
C13-2-MonoCB-(1)	%	26						3445740
C13-33'44'55'-HexaCB-(169)	%	52						3445740

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0787						
Sampling Date		2013/11/18 13:20						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-33'44'5-PentaCB-(126)	%	92						3445740
C13-33'44'-TetraCB-(77)	%	113						3445740
C13-344'5-TetraCB-(81)	%	112						3445740
C13-344'-TriCB-(37)	%	98						3445740
C13-44'-DiCB-(15)	%	79						3445740
C13-4-MonoCB-(3)	%	36						3445740
C13-DecaCB-(209)	%	84						3445740
C13-HexaCB-(156)+(157)	%	98						3445740

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0788						
Sampling Date		2013/11/18 14:30						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B20-SP-20A-1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.033 U (1)	0.033	0.098				3445740
3-MonoCB-(2)	ng/L	0.016 U	0.016	0.098				3445740
4-MonoCB-(3)	ng/L	0.024 J	0.018	0.098				3445740
22'-DiCB-(4)	ng/L	0.330	0.018	0.098				3445740
2,3-DiCB-(5)	ng/L	0.017 U	0.017	0.098				3445740
2,3'-DiCB-(6)	ng/L	0.111	0.015	0.098				3445740
2,4-DiCB-(7)	ng/L	0.015 U	0.015	0.098				3445740
2,4'-DiCB-(8)	ng/L	0.541	0.014	0.098				3445740
2,5-DiCB-(9)	ng/L	0.028 J	0.015	0.098				3445740
2,6-DiCB-(10)	ng/L	0.015 U	0.015	0.098				3445740
3,3'-DiCB-(11)	ng/L	0.503	0.015	0.098				3445740
DiCB-(12)+(13)	ng/L	0.063 U (1)	0.063	0.20				3445740
3,5-DiCB-(14)	ng/L	0.015 U	0.015	0.098				3445740
4,4'-DiCB-(15)	ng/L	0.658	0.025	0.098				3445740
22'3-TriCB-(16)	ng/L	0.576	0.033	0.098				3445740
22'4-TriCB-(17)	ng/L	0.521	0.029	0.098				3445740
TriCB-(18)+(30)	ng/L	1.05	0.023	0.20				3445740
22'6-TriCB-(19)	ng/L	0.137	0.026	0.098				3445740
TriCB-(20) + (28)	ng/L	2.50	0.019	0.20				3445740
TriCB-(21)+(33)	ng/L	1.42	0.019	0.20				3445740
234'-TriCB-(22)	ng/L	0.969	0.020	0.098				3445740
235-TriCB-(23)	ng/L	0.020 U	0.020	0.098				3445740
236-TriCB-(24)	ng/L	0.029 J	0.021	0.098				3445740
23'4-TriCB-(25)	ng/L	0.180	0.020	0.098				3445740
TriCB-(26)+(29)	ng/L	0.36	0.019	0.20				3445740
23'6-TriCB-(27)	ng/L	0.096 J	0.020	0.098				3445740
24'5-TriCB-(31)	ng/L	1.92	0.018	0.098				3445740
24'6-TriCB-(32)	ng/L	0.383	0.018	0.098				3445740

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Maxxam ID		UA0788						
Sampling Date		2013/11/18 14:30						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B20-SP-20A-1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'5'-TriCB-(34)	ng/L	0.020 U	0.020	0.098				3445740
33'4-TriCB-(35)	ng/L	0.047 J	0.019	0.098				3445740
33'5-TriCB-(36)	ng/L	0.016 U	0.016	0.098				3445740
344'-TriCB-(37)	ng/L	0.936	0.023	0.098				3445740
345-TriCB-(38)	ng/L	0.019 U	0.019	0.098				3445740
34'5-TriCB-(39)	ng/L	0.017 U	0.017	0.098				3445740
TetraCB-(40)+(41)+(71)	ng/L	1.31	0.023	0.29				3445740
22'34'-TetraCB-(42)	ng/L	0.667	0.028	0.098				3445740
22'35-TetraCB-(43)	ng/L	0.095 J	0.038	0.098				3445740
TetraCB-(44)+(47)+(65)	ng/L	2.24	0.023	0.29				3445740
TetraCB-(45)+(51)	ng/L	0.33	0.023	0.20				3445740
22'36'-TetraCB-(46)	ng/L	0.134	0.029	0.098				3445740
22'45-TetraCB-(48)	ng/L	0.394	0.023	0.098				3445740
TetraCB-(49)+TetraCB-(69)	ng/L	1.12	0.021	0.20				3445740
TetraCB-(50)+(53)	ng/L	0.23	0.023	0.20				3445740
22'55'-TetraCB-(52)	ng/L	2.17	0.021	0.098				3445740
22'66'-TetraCB-(54)	ng/L	0.016 U	0.016	0.098				3445740
233'4-TetraCB-(55)	ng/L	0.018 U (1)	0.018	0.098				3445740
233'4'-Tetra CB(56)	ng/L	0.831	0.020	0.098				3445740
233'5-TetraCB-(57)	ng/L	0.018 U	0.018	0.098				3445740
233'5'-TetraCB-(58)	ng/L	0.018 U	0.018	0.098				3445740
TetraCB-(59)+(62)+(75)	ng/L	0.198 J	0.018	0.29				3445740
2344'-TetraCB -(60)	ng/L	0.352	0.018	0.098				3445740
TetraCB-(61)+(70)+(74)+(76)	ng/L	3.01	0.018	0.39				3445740
234'5-TetraCB-(63)	ng/L	0.048 J	0.017	0.098				3445740
234'6-TetraCB-(64)	ng/L	1.06	0.020	0.098				3445740
23'44'-TetraCB-(66)	ng/L	1.51	0.017	0.098				3445740
23'45-TetraCB-(67)	ng/L	0.053 J	0.017	0.098				3445740

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Maxxam ID		UA0788						
Sampling Date		2013/11/18 14:30						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B20-SP-20A-1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'45'-TetraCB-(68)	ng/L	0.016 U	0.016	0.098				3445740
23'55'-TetraCB-(72)	ng/L	0.017 U	0.017	0.098				3445740
23'5'6-TetraCB-(73)	ng/L	0.016 U	0.016	0.098				3445740
33'44'-TetraCB-(77)	ng/L	0.244	0.021	0.098	0.000100	0.0000244		3445740
33'45-TetraCB-(78)	ng/L	0.018 U	0.018	0.098				3445740
33'45'-TetraCB(79)	ng/L	0.030 J	0.016	0.098				3445740
33'55'-TetraCB-(80)	ng/L	0.016 U	0.016	0.098				3445740
344'5-TetraCB-(81)	ng/L	0.022 U	0.022	0.098	0.000300	0.00000660		3445740
22'33'4-PentaCB-(82)	ng/L	0.507	0.023	0.098				3445740
PentaCB-(83)+(99)	ng/L	1.66	0.020	0.20				3445740
22'33'6-PentaCB-(84)	ng/L	0.897	0.024	0.098				3445740
PentaCB-(85)+(116)+(117)	ng/L	0.52	0.016	0.29				3445740
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	2.62	0.017	0.59				3445740
PentaCB-(88)+(91)	ng/L	0.39	0.020	0.20				3445740
22'346'-PentaCB-(89)	ng/L	0.036 J	0.021	0.098				3445740
PentaCB-(90)+(101)+(113)	ng/L	3.33	0.017	0.29				3445740
22'355'-PentaCB-(92)	ng/L	0.554	0.020	0.098				3445740
PentaCB-(93)+(98)+(100)+(102)	ng/L	0.115 J	0.021	0.39				3445740
22'356'-PentaCB-(94)	ng/L	0.021 U	0.021	0.098				3445740
22'35'6-PentaCB-(95)	ng/L	2.33	0.019	0.098				3445740
22'366'-PentaCB-(96)	ng/L	0.019 U	0.019	0.098				3445740
22'45'6-PentaCB-(103)	ng/L	0.018 U	0.018	0.098				3445740
22'466'-PentaCB-(104)	ng/L	0.016 U	0.016	0.098				3445740
233'44'-PentaCB-(105)	ng/L	1.76	0.023	0.098	0.0000300	0.0000528		3445740
233'45-PentaCB-(106)	ng/L	0.020 U	0.020	0.098				3445740
233'4'5-PentaCB-(107)	ng/L	0.208	0.018	0.098				3445740
PentaCB-(108)+(124)	ng/L	0.144 J	0.019	0.20				3445740
PentaCB-(110)+(115)	ng/L	5.75	0.017	0.20				3445740
233'55'-PentaCB-(111)	ng/L	0.014 U	0.014	0.098				3445740

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Maxxam Job #: B3K2315
Report Date: 2013/12/27

Apex Laboratories
Client Project #: A3K0592

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0788						
Sampling Date		2013/11/18 14:30						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B20-SP-20A-1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'56-PentaCB-(112)	ng/L	0.015 U	0.015	0.098				3445740
2344'5-PentaCB-(114)	ng/L	0.074 J	0.022	0.098	0.0000300	0.00000222		3445740
23'44'5-PentaCB-(118)	ng/L	3.98	0.022	0.098	0.0000300	0.000119		3445740
23'455'-PentaCB-(120)	ng/L	0.014 U	0.014	0.098				3445740
23'45'6-PentaCB-(121)	ng/L	0.014 U	0.014	0.098				3445740
233'4'5'-PentaCB-(122)	ng/L	0.054 J	0.022	0.098				3445740
23'44'5'-PentaCB-(123)	ng/L	0.071 J	0.024	0.098	0.0000300	0.00000213		3445740
33'44'5-PentaCB-(126)	ng/L	0.025 J	0.022	0.098	0.100	0.00250		3445740
33'455'-PentaCB-(127)	ng/L	0.020 U	0.020	0.098				3445740
HexaCB-(128)+(166)	ng/L	0.97	0.016	0.20				3445740
HexaCB-(129)+(138)+(163)	ng/L	6.63	0.019	0.29				3445740
22'33'45'-HexaCB-(130)	ng/L	0.325	0.021	0.098				3445740
22'33'46-HexaCB-(131)	ng/L	0.081 J	0.024	0.098				3445740
22'33'46'-HexaCB-(132)	ng/L	1.82	0.021	0.098				3445740
22'33'55'-HexaCB-(133)	ng/L	0.054 J	0.020	0.098				3445740
HexaCB-(134)+(143)	ng/L	0.26	0.022	0.20				3445740
HexaCB-(135)+(151)	ng/L	1.14	0.025	0.20				3445740
22'33'66'-HexaCB-(136)	ng/L	0.433	0.019	0.098				3445740
22'344'5-HexaCB-(137)	ng/L	0.307	0.021	0.098				3445740
HexaCB-(139)+(140)	ng/L	0.083 J	0.018	0.20				3445740
22'3455'-HexaCB-(141)	ng/L	0.965	0.019	0.098				3445740
22'3456-HexaCB-(142)	ng/L	0.021 U	0.021	0.098				3445740
22'345'6-HexaCB-(144)	ng/L	0.191	0.025	0.098				3445740
22'3466'-HexaCB-(145)	ng/L	0.020 U	0.020	0.098				3445740
22'34'55'-HexaCB-(146)	ng/L	0.598	0.018	0.098				3445740
HexaCB-(147)+(149)	ng/L	3.26	0.017	0.20				3445740
22'34'56'-HexaCB-(148)	ng/L	0.025 U	0.025	0.098				3445740
22'34'66'-HexaCB-(150)	ng/L	0.018 U	0.018	0.098				3445740
22'3566'-HexaCB-(152)	ng/L	0.019 U	0.019	0.098				3445740

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Apex Laboratories
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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0788						
Sampling Date		2013/11/18 14:30						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B20-SP-20A-1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
HexaCB-(153)+(168)	ng/L	3.77	0.015	0.20				3445740
22'44'56'-HexaCB-(154)	ng/L	0.029 J	0.022	0.098				3445740
22'44'66'-HexaCB-(155)	ng/L	0.020 U	0.020	0.098				3445740
HexaCB-(156)+(157)	ng/L	0.68	0.021	0.20	0.0000300	0.0000204		3445740
233'44'6-HexaCB-(158)	ng/L	0.604	0.014	0.098				3445740
233'455'-HexaCB-(159)	ng/L	0.035 J	0.020	0.098				3445740
233'456-HexaCB-(160)	ng/L	0.015 U	0.015	0.098				3445740
233'45'6-HexaCB-(161)	ng/L	0.014 U	0.014	0.098				3445740
233'4'55'-HexaCB-(162)	ng/L	0.024 J	0.020	0.098				3445740
233'4'5'6-HexaCB-(164)	ng/L	0.346	0.014	0.098				3445740
233'55'6-HexaCB-(165)	ng/L	0.015 U	0.015	0.098				3445740
23'44'55'-HexaCB-(167)	ng/L	0.233	0.022	0.098	0.0000300	0.00000699		3445740
33'44'55'-HexaCB-(169)	ng/L	0.023 U	0.023	0.098	0.0300	0.000690		3445740
22'33'44'5-HeptaCB-(170)	ng/L	0.979	0.018	0.098				3445740
HeptaCB-(171)+(173)	ng/L	0.28	0.021	0.20				3445740
22'33'455'-HeptaCB-(172)	ng/L	0.181	0.022	0.098				3445740
22'33'456'-HeptaCB-(174)	ng/L	0.934	0.020	0.098				3445740
22'33'45'6-HeptaCB-(175)	ng/L	0.035 J	0.018	0.098				3445740
22'33'466'-HeptaCB-(176)	ng/L	0.102	0.014	0.098				3445740
22'33'45'6'-HeptaCB-(177)	ng/L	0.522	0.022	0.098				3445740
22'33'55'6-HeptaCB-(178)	ng/L	0.180	0.019	0.098				3445740
22'33'566'-HeptaCB-(179)	ng/L	0.318	0.014	0.098				3445740
HeptaCB-(180)+(193)	ng/L	2.48	0.017	0.20				3445740
22'344'56-HeptaCB-(181)	ng/L	0.020 U	0.020	0.098				3445740
22'344'56'-HeptaCB-(182)	ng/L	0.019 U	0.019	0.098				3445740
22'344'5'6-HeptaCB-(183)	ng/L	0.495	0.017	0.098				3445740
22'344'66'-HeptaCB-(184)	ng/L	0.013 U	0.013	0.098				3445740
22'3455'6-HeptaCB-(185)	ng/L	0.083 J	0.023	0.098				3445740
22'34566'-HeptaCB-(186)	ng/L	0.014 U	0.014	0.098				3445740

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Apex Laboratories
Client Project #: A3K0592

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0788						
Sampling Date		2013/11/18 14:30						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B20-SP-20A-1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'34'55'6-HeptaCB-(187)	ng/L	1.13	0.017	0.098				3445740
22'34'566'-HeptaCB-(188)	ng/L	0.016 U	0.016	0.098				3445740
233'44'55'-HeptaCB-(189)	ng/L	0.042 U (1)	0.042	0.098	0.0000300	0.00000126		3445740
233'44'56-HeptaCB-(190)	ng/L	0.209	0.017	0.098				3445740
233'44'5'6-HeptaCB-(191)	ng/L	0.039 J	0.016	0.098				3445740
233'455'6-HeptaCB-(192)	ng/L	0.017 U	0.017	0.098				3445740
22'33'44'55'-OctaCB-(194)	ng/L	0.630	0.021	0.098				3445740
22'33'44'56-OctaCB-(195)	ng/L	0.184	0.022	0.098				3445740
22'33'44'56'-OctaCB-(196)	ng/L	0.327	0.024	0.098				3445740
22'33'44'66'OctaCB-(197)	ng/L	0.018 U	0.018	0.098				3445740
OctaCB-(198)+(199)	ng/L	0.80	0.024	0.20				3445740
22'33'4566'-OctaCB-(200)	ng/L	0.072 J	0.016	0.098				3445740
22'33'45'66'-OctaCB-(201)	ng/L	0.074 U (1)	0.074	0.098				3445740
22'33'55'66'-OctaCB-(202)	ng/L	0.180	0.022	0.098				3445740
22'344'55'6-OctaCB-(203)	ng/L	0.500	0.023	0.098				3445740
22'344'566'-OctaCB-(204)	ng/L	0.017 U	0.017	0.098				3445740
233'44'55'6-OctaCB-(205)	ng/L	0.026 U (1)	0.026	0.098				3445740
22'33'44'55'6-NonaCB-(206)	ng/L	0.592	0.022	0.098				3445740
22'33'44'566'-NonaCB-(207)	ng/L	0.063 J	0.016	0.098				3445740
22'33'455'66'-NonaCB-(208)	ng/L	0.141	0.019	0.098				3445740
DecaCB-(209)	ng/L	0.142	0.023	0.098				3445740
Monochlorobiphenyl	ng/L	0.024	0.019	N/A			1	3445740
Dichlorobiphenyl	ng/L	2.17	0.025	N/A			6	3445740
Trichlorobiphenyl	ng/L	11.1	0.033	N/A			15	3445740
Tetrachlorobiphenyl	ng/L	16.0	0.038	N/A			20	3445740
Pentachlorobiphenyl	ng/L	25.0	0.024	N/A			20	3445740
Hexachlorobiphenyl	ng/L	22.8	0.025	N/A			23	3445740
Heptachlorobiphenyl	ng/L	7.97	0.023	N/A			15	3445740

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Maxxam Job #: B3K2315
Report Date: 2013/12/27

Apex Laboratories
Client Project #: A3K0592

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0788						
Sampling Date		2013/11/18 14:30						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	**B20-SP-20A-1-20131118**	**EDL**	**RDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
Octachlorobiphenyl	ng/L	2.69	0.024	N/A			7	3445740
Nonachlorobiphenyl	ng/L	0.796	0.022	N/A			3	3445740
Decachlorobiphenyl	ng/L	0.142	0.023	N/A			1	3445740
Total PCB	ng/L	88.8	N/A	N/A				3445740
TOTAL TOXIC EQUIVALENCY	ng/L					0.00343		
Surrogate Recovery (%)								
C13-2,44'-TriCB-(28)	%	101						3445740
C13-22'33'44'55'6-NonaCB-(206)	%	94						3445740
C13-22'33'44'5-HeptaCB-(170)	%	104						3445740
C13-22'33'455'66'-NonaCB-(208)	%	93						3445740
C13-22'33'55'66'-OctaCB-(202)	%	94						3445740
C13-22'33'55'6-HeptaCB-(178)	%	105						3445740
C13-22'344'55'-HeptaCB-(180)	%	103						3445740
C13-22'34'566'-HeptaCB-(188)	%	88						3445740
C13-22'44'66'-HexaCB-(155)	%	83						3445740
C13-22'466'-PentaCB-(104)	%	81						3445740
C13-22'66'-TetraCB-(54)	%	77						3445740
C13-22'6-TriCB-(19)	%	66						3445740
C13-22'-DiCB-(4)	%	49						3445740
C13-233'44'55'6-OctaCB-(205)	%	101						3445740
C13-233'44'55'-HeptaCB-(189)	%	109						3445740
C13-233'44'-PentaCB-(105)	%	103						3445740
C13-233'55'-PentaCB-(111)	%	95						3445740
C13-23'44'55'-HexaCB-(167)	%	99						3445740
C13-2344'5-PentaCB-(114)	%	99						3445740
C13-23'44'5-PentaCB-(118)	%	103						3445740
C13-2'344'5-PentaCB-(123)	%	101						3445740
C13-2-MonoCB-(1)	%	45						3445740
C13-33'44'55'-HexaCB-(169)	%	63						3445740

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Maxxam ID		UA0788						
Sampling Date		2013/11/18 14:30						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B20-SP-20A-1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-33'44'5-PentaCB-(126)	%	102						3445740
C13-33'44'-TetraCB-(77)	%	116						3445740
C13-344'5-TetraCB-(81)	%	114						3445740
C13-344'-TriCB-(37)	%	107						3445740
C13-44'-DiCB-(15)	%	95						3445740
C13-4-MonoCB-(3)	%	57						3445740
C13-DecaCB-(209)	%	81						3445740
C13-HexaCB-(156)+(157)	%	99						3445740

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0789						
Sampling Date		2013/11/18 15:10						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.020 J	0.016	0.10				3445740
3-MonoCB-(2)	ng/L	0.014 U	0.014	0.10				3445740
4-MonoCB-(3)	ng/L	0.017 J	0.015	0.10				3445740
22'-DiCB-(4)	ng/L	0.16	0.018	0.10				3445740
2,3-DiCB-(5)	ng/L	0.020 U	0.020	0.10				3445740
2,3'-DiCB-(6)	ng/L	0.077 J	0.017	0.10				3445740
2,4-DiCB-(7)	ng/L	0.017 U	0.017	0.10				3445740
2,4'-DiCB-(8)	ng/L	0.34	0.016	0.10				3445740
2,5-DiCB-(9)	ng/L	0.020 U (1)	0.020	0.10				3445740
2,6-DiCB-(10)	ng/L	0.015 U	0.015	0.10				3445740
3,3'-DiCB-(11)	ng/L	0.25	0.017	0.10				3445740
DiCB-(12)+(13)	ng/L	0.044 U (1)	0.044	0.20				3445740
3,5-DiCB-(14)	ng/L	0.017 U	0.017	0.10				3445740
4,4'-DiCB-(15)	ng/L	0.39	0.029	0.10				3445740
22'3-TriCB-(16)	ng/L	0.41	0.023	0.10				3445740
22'4-TriCB-(17)	ng/L	0.38	0.020	0.10				3445740
TriCB-(18)+(30)	ng/L	0.74	0.016	0.20				3445740
22'6-TriCB-(19)	ng/L	0.087 J	0.018	0.10				3445740
TriCB-(20) + (28)	ng/L	1.79	0.018	0.20				3445740
TriCB-(21)+(33)	ng/L	1.04	0.019	0.20				3445740
234'-TriCB-(22)	ng/L	0.72	0.019	0.10				3445740
235-TriCB-(23)	ng/L	0.019 U	0.019	0.10				3445740
236-TriCB-(24)	ng/L	0.020 J	0.015	0.10				3445740
23'4-TriCB-(25)	ng/L	0.13	0.019	0.10				3445740
TriCB-(26)+(29)	ng/L	0.26	0.018	0.20				3445740
23'6-TriCB-(27)	ng/L	0.063 J	0.014	0.10				3445740
24'5-TriCB-(31)	ng/L	1.41	0.017	0.10				3445740
24'6-TriCB-(32)	ng/L	0.28	0.013	0.10				3445740

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Sampling Date		2013/11/18 15:10						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'5'-TriCB-(34)	ng/L	0.019 U	0.019	0.10				3445740
33'4-TriCB-(35)	ng/L	0.029 J	0.018	0.10				3445740
33'5-TriCB-(36)	ng/L	0.015 U	0.015	0.10				3445740
344'-TriCB-(37)	ng/L	0.64	0.022	0.10				3445740
345-TriCB-(38)	ng/L	0.018 U	0.018	0.10				3445740
34'5-TriCB-(39)	ng/L	0.016 U	0.016	0.10				3445740
TetraCB-(40)+(41)+(71)	ng/L	0.96	0.022	0.30				3445740
22'34'-TetraCB-(42)	ng/L	0.48	0.026	0.10				3445740
22'35-TetraCB-(43)	ng/L	0.080 J	0.036	0.10				3445740
TetraCB-(44)+(47)+(65)	ng/L	1.56	0.022	0.30				3445740
TetraCB-(45)+(51)	ng/L	0.25	0.022	0.20				3445740
22'36'-TetraCB-(46)	ng/L	0.091 J	0.027	0.10				3445740
22'45-TetraCB-(48)	ng/L	0.28	0.022	0.10				3445740
TetraCB-(49)+TetraCB-(69)	ng/L	0.79	0.020	0.20				3445740
TetraCB-(50)+(53)	ng/L	0.165 J	0.022	0.20				3445740
22'55'-TetraCB-(52)	ng/L	1.40	0.020	0.10				3445740
22'66'-TetraCB-(54)	ng/L	0.017 U	0.017	0.10				3445740
233'4-TetraCB-(55)	ng/L	0.020 U	0.020	0.10				3445740
233'4'-Tetra CB(56)	ng/L	0.53	0.022	0.10				3445740
233'5-TetraCB-(57)	ng/L	0.020 U	0.020	0.10				3445740
233'5'-TetraCB-(58)	ng/L	0.020 U	0.020	0.10				3445740
TetraCB-(59)+(62)+(75)	ng/L	0.143 J	0.017	0.30				3445740
2344'-TetraCB -(60)	ng/L	0.25	0.020	0.10				3445740
TetraCB-(61)+(70)+(74)+(76)	ng/L	2.01	0.020	0.40				3445740
234'5-TetraCB-(63)	ng/L	0.034 J	0.019	0.10				3445740
234'6-TetraCB-(64)	ng/L	0.81	0.019	0.10				3445740
23'44'-TetraCB-(66)	ng/L	0.96	0.019	0.10				3445740
23'45-TetraCB-(67)	ng/L	0.037 J	0.019	0.10				3445740
23'45'-TetraCB-(68)	ng/L	0.018 U	0.018	0.10				3445740

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Maxxam Job #: B3K2315
Report Date: 2013/12/27

Apex Laboratories
Client Project #: A3K0592

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0789						
Sampling Date		2013/11/18 15:10						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'55'-TetraCB-(72)	ng/L	0.019 U	0.019	0.10				3445740
23'5'6-TetraCB-(73)	ng/L	0.015 U	0.015	0.10				3445740
33'44'-TetraCB-(77)	ng/L	0.14	0.024	0.10	0.000100	0.0000140		3445740
33'45-TetraCB-(78)	ng/L	0.020 U	0.020	0.10				3445740
33'45'-TetraCB(79)	ng/L	0.018 U	0.018	0.10				3445740
33'55'-TetraCB-(80)	ng/L	0.018 U	0.018	0.10				3445740
344'5-TetraCB-(81)	ng/L	0.024 U	0.024	0.10	0.000300	0.00000720		3445740
22'33'4-PentaCB-(82)	ng/L	0.26	0.027	0.10				3445740
PentaCB-(83)+(99)	ng/L	0.82	0.024	0.20				3445740
22'33'6-PentaCB-(84)	ng/L	0.49	0.029	0.10				3445740
PentaCB-(85)+(116)+(117)	ng/L	0.254 J	0.019	0.30				3445740
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	1.30	0.021	0.60				3445740
PentaCB-(88)+(91)	ng/L	0.22	0.024	0.20				3445740
22'346'-PentaCB-(89)	ng/L	0.026 U	0.026	0.10				3445740
PentaCB-(90)+(101)+(113)	ng/L	1.71	0.021	0.30				3445740
22'355'-PentaCB-(92)	ng/L	0.27	0.024	0.10				3445740
PentaCB-(93)+(98)+(100)+(102)	ng/L	0.071 J	0.025	0.40				3445740
22'356'-PentaCB-(94)	ng/L	0.026 U	0.026	0.10				3445740
22'35'6-PentaCB-(95)	ng/L	1.32	0.023	0.10				3445740
22'366'-PentaCB-(96)	ng/L	0.019 U	0.019	0.10				3445740
22'45'6-PentaCB-(103)	ng/L	0.021 U	0.021	0.10				3445740
22'466'-PentaCB-(104)	ng/L	0.017 U	0.017	0.10				3445740
233'44'-PentaCB-(105)	ng/L	0.84	0.020	0.10	0.0000300	0.0000252		3445740
233'45-PentaCB-(106)	ng/L	0.018 U	0.018	0.10				3445740
233'4'5-PentaCB-(107)	ng/L	0.12	0.017	0.10				3445740
PentaCB-(108)+(124)	ng/L	0.069 J	0.018	0.20				3445740
PentaCB-(110)+(115)	ng/L	2.79	0.021	0.20				3445740
233'55'-PentaCB-(111)	ng/L	0.017 U	0.017	0.10				3445740
233'56-PentaCB-(112)	ng/L	0.018 U	0.018	0.10				3445740

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Maxxam Job #: B3K2315
Report Date: 2013/12/27

Apex Laboratories
Client Project #: A3K0592

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0789						
Sampling Date		2013/11/18 15:10						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2344'5-PentaCB-(114)	ng/L	0.044 J	0.020	0.10	0.0000300	0.00000132		3445740
23'44'5-PentaCB-(118)	ng/L	1.92	0.020	0.10	0.0000300	0.0000576		3445740
23'455'-PentaCB-(120)	ng/L	0.017 U	0.017	0.10				3445740
23'45'6-PentaCB-(121)	ng/L	0.017 U	0.017	0.10				3445740
233'4'5'-PentaCB-(122)	ng/L	0.023 U (1)	0.023	0.10				3445740
23'44'5'-PentaCB-(123)	ng/L	0.026 J	0.022	0.10	0.0000300	0.000000780		3445740
33'44'5-PentaCB-(126)	ng/L	0.020 U	0.020	0.10	0.100	0.00200		3445740
33'455'-PentaCB-(127)	ng/L	0.018 U	0.018	0.10				3445740
HexaCB-(128)+(166)	ng/L	0.45	0.016	0.20				3445740
HexaCB-(129)+(138)+(163)	ng/L	3.30	0.018	0.30				3445740
22'33'45'-HexaCB-(130)	ng/L	0.17	0.021	0.10				3445740
22'33'46-HexaCB-(131)	ng/L	0.041 J	0.024	0.10				3445740
22'33'46'-HexaCB-(132)	ng/L	0.93	0.020	0.10				3445740
22'33'55'-HexaCB-(133)	ng/L	0.031 J	0.019	0.10				3445740
HexaCB-(134)+(143)	ng/L	0.135 J	0.022	0.20				3445740
HexaCB-(135)+(151)	ng/L	0.66	0.030	0.20				3445740
22'33'66'-HexaCB-(136)	ng/L	0.27	0.022	0.10				3445740
22'344'5-HexaCB-(137)	ng/L	0.14	0.020	0.10				3445740
HexaCB-(139)+(140)	ng/L	0.041 J	0.017	0.20				3445740
22'3455'-HexaCB-(141)	ng/L	0.53	0.019	0.10				3445740
22'3456-HexaCB-(142)	ng/L	0.021 U	0.021	0.10				3445740
22'345'6-HexaCB-(144)	ng/L	0.11	0.030	0.10				3445740
22'3466'-HexaCB-(145)	ng/L	0.023 U	0.023	0.10				3445740
22'34'55'-HexaCB-(146)	ng/L	0.33	0.018	0.10				3445740
HexaCB-(147)+(149)	ng/L	1.79	0.017	0.20				3445740
22'34'56'-HexaCB-(148)	ng/L	0.030 U	0.030	0.10				3445740
22'34'66'-HexaCB-(150)	ng/L	0.021 U	0.021	0.10				3445740
22'3566'-HexaCB-(152)	ng/L	0.023 U	0.023	0.10				3445740

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Maxxam Job #: B3K2315
Report Date: 2013/12/27

Apex Laboratories
Client Project #: A3K0592

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0789						
Sampling Date		2013/11/18 15:10						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
HexaCB-(153)+(168)	ng/L	1.96	0.014	0.20				3445740
22'44'56'-HexaCB-(154)	ng/L	0.026 U	0.026	0.10				3445740
22'44'66'-HexaCB-(155)	ng/L	0.023 U	0.023	0.10				3445740
HexaCB-(156)+(157)	ng/L	0.35	0.016	0.20	0.0000300	0.0000105		3445740
233'44'6-HexaCB-(158)	ng/L	0.30	0.014	0.10				3445740
233'455'-HexaCB-(159)	ng/L	0.022 J	0.015	0.10				3445740
233'456-HexaCB-(160)	ng/L	0.014 U	0.014	0.10				3445740
233'45'6-HexaCB-(161)	ng/L	0.014 U	0.014	0.10				3445740
233'4'55'-HexaCB-(162)	ng/L	0.015 U	0.015	0.10				3445740
233'4'5'6-HexaCB-(164)	ng/L	0.18	0.014	0.10				3445740
233'55'6-HexaCB-(165)	ng/L	0.015 U	0.015	0.10				3445740
23'44'55'-HexaCB-(167)	ng/L	0.11	0.017	0.10	0.0000300	0.00000330		3445740
33'44'55'-HexaCB-(169)	ng/L	0.017 U	0.017	0.10	0.0300	0.000510		3445740
22'33'44'5-HeptaCB-(170)	ng/L	0.56	0.022	0.10				3445740
HeptaCB-(171)+(173)	ng/L	0.160 J	0.026	0.20				3445740
22'33'455'-HeptaCB-(172)	ng/L	0.093 J	0.027	0.10				3445740
22'33'456'-HeptaCB-(174)	ng/L	0.52	0.025	0.10				3445740
22'33'45'6-HeptaCB-(175)	ng/L	0.019 J	0.013	0.10				3445740
22'33'466'-HeptaCB-(176)	ng/L	0.059 J	0.010	0.10				3445740
22'33'45'6'-HeptaCB-(177)	ng/L	0.30	0.027	0.10				3445740
22'33'55'6-HeptaCB-(178)	ng/L	0.089 J	0.014	0.10				3445740
22'33'566'-HeptaCB-(179)	ng/L	0.19	0.0098	0.10				3445740
HeptaCB-(180)+(193)	ng/L	1.27	0.021	0.20				3445740
22'344'56-HeptaCB-(181)	ng/L	0.025 U	0.025	0.10				3445740
22'344'56'-HeptaCB-(182)	ng/L	0.014 U	0.014	0.10				3445740
22'344'5'6-HeptaCB-(183)	ng/L	0.26	0.021	0.10				3445740
22'344'66'-HeptaCB-(184)	ng/L	0.0094 U	0.0094	0.10				3445740
22'3455'6-HeptaCB-(185)	ng/L	0.046 J	0.028	0.10				3445740
22'34566'-HeptaCB-(186)	ng/L	0.010 U	0.010	0.10				3445740

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0789						
Sampling Date		2013/11/18 15:10						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'34'55'6-HeptaCB-(187)	ng/L	0.56	0.013	0.10				3445740
22'34'566'-HeptaCB-(188)	ng/L	0.012 U	0.012	0.10				3445740
233'44'55'-HeptaCB-(189)	ng/L	0.026 J	0.021	0.10	0.0000300	0.000000780		3445740
233'44'56-HeptaCB-(190)	ng/L	0.10	0.021	0.10				3445740
233'44'5'6-HeptaCB-(191)	ng/L	0.020 U	0.020	0.10				3445740
233'455'6-HeptaCB-(192)	ng/L	0.021 U	0.021	0.10				3445740
22'33'44'55'-OctaCB-(194)	ng/L	0.28	0.021	0.10				3445740
22'33'44'56-OctaCB-(195)	ng/L	0.096 J	0.021	0.10				3445740
22'33'44'56'-OctaCB-(196)	ng/L	0.15	0.024	0.10				3445740
22'33'44'66'OctaCB-(197)	ng/L	0.017 U	0.017	0.10				3445740
OctaCB-(198)+(199)	ng/L	0.34	0.023	0.20				3445740
22'33'4566'-OctaCB-(200)	ng/L	0.033 J	0.016	0.10				3445740
22'33'45'66'-OctaCB-(201)	ng/L	0.040 J	0.016	0.10				3445740
22'33'55'66'-OctaCB-(202)	ng/L	0.059 U (1)	0.059	0.10				3445740
22'344'55'6-OctaCB-(203)	ng/L	0.21	0.022	0.10				3445740
22'344'566'-OctaCB-(204)	ng/L	0.017 U	0.017	0.10				3445740
233'44'55'6-OctaCB-(205)	ng/L	0.017 U	0.017	0.10				3445740
22'33'44'55'6-NonaCB-(206)	ng/L	0.21	0.027	0.10				3445740
22'33'44'566'-NonaCB-(207)	ng/L	0.020 U	0.020	0.10				3445740
22'33'455'66'-NonaCB-(208)	ng/L	0.071 J	0.024	0.10				3445740
DecaCB-(209)	ng/L	0.087 J	0.024	0.10				3445740
Monochlorobiphenyl	ng/L	0.037	0.016	N/A			2	3445740
Dichlorobiphenyl	ng/L	1.22	0.029	N/A			5	3445740
Trichlorobiphenyl	ng/L	8.00	0.023	N/A			15	3445740
Tetrachlorobiphenyl	ng/L	11.0	0.036	N/A			19	3445740
Pentachlorobiphenyl	ng/L	12.5	0.029	N/A			17	3445740
Hexachlorobiphenyl	ng/L	11.8	0.030	N/A			21	3445740
Heptachlorobiphenyl	ng/L	4.24	0.028	N/A			15	3445740

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COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Octachlorobiphenyl	ng/L	1.16	0.024	N/A			7	3445740
Nonachlorobiphenyl	ng/L	0.277	0.027	N/A			2	3445740
Decachlorobiphenyl	ng/L	0.087	0.024	N/A			1	3445740
Total PCB	ng/L	50.4	N/A	N/A				3445740
TOTAL TOXIC EQUIVALENCY	ng/L					0.00263		
Surrogate Recovery (%)								
C13-2,44'-TriCB-(28)	%	103						3445740
C13-22'33'44'55'6-NonaCB-(206)	%	95						3445740
C13-22'33'44'5-HeptaCB-(170)	%	104						3445740
C13-22'33'455'66'-NonaCB-(208)	%	96						3445740
C13-22'33'55'66'-OctaCB-(202)	%	95						3445740
C13-22'33'55'6-HeptaCB-(178)	%	106						3445740
C13-22'344'55'-HeptaCB-(180)	%	107						3445740
C13-22'34'566'-HeptaCB-(188)	%	90						3445740
C13-22'44'66'-HexaCB-(155)	%	85						3445740
C13-22'466'-PentaCB-(104)	%	82						3445740
C13-22'66'-TetraCB-(54)	%	79						3445740
C13-22'6-TriCB-(19)	%	69						3445740
C13-22'-DiCB-(4)	%	50						3445740
C13-233'44'55'6-OctaCB-(205)	%	99						3445740
C13-233'44'55'-HeptaCB-(189)	%	110						3445740
C13-233'44'-PentaCB-(105)	%	105						3445740
C13-233'55'-PentaCB-(111)	%	97						3445740
C13-23'44'55'-HexaCB-(167)	%	102						3445740
C13-2344'5-PentaCB-(114)	%	103						3445740
C13-23'44'5-PentaCB-(118)	%	103						3445740
C13-2'344'5-PentaCB-(123)	%	105						3445740
C13-2-MonoCB-(1)	%	46						3445740
C13-33'44'55'-HexaCB-(169)	%	61						3445740

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COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20131118	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-33'44'5-PentaCB-(126)	%	103						3445740
C13-33'44'-TetraCB-(77)	%	117						3445740
C13-344'5-TetraCB-(81)	%	117						3445740
C13-344'-TriCB-(37)	%	110						3445740
C13-44'-DiCB-(15)	%	98						3445740
C13-4-MonoCB-(3)	%	58						3445740
C13-DecaCB-(209)	%	79						3445740
C13-HexaCB-(156)+(157)	%	100						3445740

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Maxxam Job #: B3K2315
Report Date: 2013/12/27

Apex Laboratories
Client Project #: A3K0592

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0790						
Sampling Date		2013/11/18 09:45						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20131119	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.087 J	0.011	0.095				3445740
3-MonoCB-(2)	ng/L	0.0190 J	0.0090	0.095				3445740
4-MonoCB-(3)	ng/L	0.0768 J	0.0099	0.095				3445740
22'-DiCB-(4)	ng/L	1.42	0.022	0.095				3445740
2,3-DiCB-(5)	ng/L	0.063 J	0.016	0.095				3445740
2,3'-DiCB-(6)	ng/L	0.645	0.014	0.095				3445740
2,4-DiCB-(7)	ng/L	0.095	0.014	0.095				3445740
2,4'-DiCB-(8)	ng/L	3.01	0.013	0.095				3445740
2,5-DiCB-(9)	ng/L	0.149	0.014	0.095				3445740
2,6-DiCB-(10)	ng/L	0.051 J	0.018	0.095				3445740
3,3'-DiCB-(11)	ng/L	0.544	0.014	0.095				3445740
DiCB-(12)+(13)	ng/L	0.50	0.014	0.19				3445740
3,5-DiCB-(14)	ng/L	0.014 U	0.014	0.095				3445740
4,4'-DiCB-(15)	ng/L	6.88	0.023	0.095				3445740
22'3-TriCB-(16)	ng/L	5.18	0.030	0.095				3445740
22'4-TriCB-(17)	ng/L	4.74	0.027	0.095				3445740
TriCB-(18)+(30)	ng/L	9.15	0.021	0.19				3445740
22'6-TriCB-(19)	ng/L	1.19	0.024	0.095				3445740
TriCB-(20) + (28)	ng/L	25.2	0.016	0.19				3445740
TriCB-(21)+(33)	ng/L	12.5	0.016	0.19				3445740
234'-TriCB-(22)	ng/L	9.67	0.016	0.095				3445740
235-TriCB-(23)	ng/L	0.017 J	0.017	0.095				3445740
236-TriCB-(24)	ng/L	0.233	0.019	0.095				3445740
23'4-TriCB-(25)	ng/L	1.81	0.016	0.095				3445740
TriCB-(26)+(29)	ng/L	3.68	0.016	0.19				3445740
23'6-TriCB-(27)	ng/L	0.972	0.018	0.095				3445740
24'5-TriCB-(31)	ng/L	17.6	0.015	0.095				3445740
24'6-TriCB-(32)	ng/L	4.07	0.016	0.095				3445740
23'5'-TriCB-(34)	ng/L	0.055 J	0.016	0.095				3445740

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	Units	B19-SP-19-1-20131119	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'4-TriCB-(35)	ng/L	0.513	0.016	0.095				3445740
33'5-TriCB-(36)	ng/L	0.013 U	0.013	0.095				3445740
344'-TriCB-(37)	ng/L	9.32	0.019	0.095				3445740
345-TriCB-(38)	ng/L	0.016 U	0.016	0.095				3445740
34'5-TriCB-(39)	ng/L	0.111	0.014	0.095				3445740
TetraCB-(40)+(41)+(71)	ng/L	15.2	0.019	0.29				3445740
22'34'-TetraCB-(42)	ng/L	7.62	0.023	0.095				3445740
22'35-TetraCB-(43)	ng/L	1.15	0.031	0.095				3445740
TetraCB-(44)+(47)+(65)	ng/L	25.0	0.019	0.29				3445740
TetraCB-(45)+(51)	ng/L	3.86	0.019	0.19				3445740
22'36'-TetraCB-(46)	ng/L	1.50	0.023	0.095				3445740
22'45-TetraCB-(48)	ng/L	4.38	0.019	0.095				3445740
TetraCB-(49)+TetraCB-(69)	ng/L	13.0	0.017	0.19				3445740
TetraCB-(50)+(53)	ng/L	2.67	0.019	0.19				3445740
22'55'-TetraCB-(52)	ng/L	23.7	0.017	0.095				3445740
22'66'-TetraCB-(54)	ng/L	0.032 U (1)	0.032	0.095				3445740
233'4-TetraCB-(55)	ng/L	0.186	0.015	0.095				3445740
233'4'-Tetra CB(56)	ng/L	7.82	0.017	0.095				3445740
233'5-TetraCB-(57)	ng/L	0.066 J	0.015	0.095				3445740
233'5'-TetraCB-(58)	ng/L	0.015 U	0.015	0.095				3445740
TetraCB-(59)+(62)+(75)	ng/L	2.35	0.015	0.29				3445740
2344'-TetraCB -(60)	ng/L	3.42	0.015	0.095				3445740
TetraCB-(61)+(70)+(74)+(76)	ng/L	29.9	0.016	0.38				3445740
234'5-TetraCB-(63)	ng/L	0.504	0.014	0.095				3445740
234'6-TetraCB-(64)	ng/L	12.1	0.016	0.095				3445740
23'44'-TetraCB-(66)	ng/L	14.6	0.015	0.095				3445740
23'45-TetraCB-(67)	ng/L	0.595	0.014	0.095				3445740
23'45'-TetraCB-(68)	ng/L	0.045 J	0.014	0.095				3445740

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23'55'-TetraCB-(72)	ng/L	0.092 J	0.015	0.095				3445740
23'5'6-TetraCB-(73)	ng/L	0.013 U	0.013	0.095				3445740
33'44'-TetraCB-(77)	ng/L	1.94	0.018	0.095	0.000100	0.000194		3445740
33'45-TetraCB-(78)	ng/L	0.015 U	0.015	0.095				3445740
33'45'-TetraCB(79)	ng/L	0.217	0.014	0.095				3445740
33'55'-TetraCB-(80)	ng/L	0.014 U	0.014	0.095				3445740
344'5-TetraCB-(81)	ng/L	0.052 U (1)	0.052	0.095	0.000300	0.0000156		3445740
22'33'4-PentaCB-(82)	ng/L	4.70	0.025	0.095				3445740
PentaCB-(83)+(99)	ng/L	16.0	0.022	0.19				3445740
22'33'6-PentaCB-(84)	ng/L	9.60	0.026	0.095				3445740
PentaCB-(85)+(116)+(117)	ng/L	5.46	0.017	0.29				3445740
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	25.3	0.019	0.57				3445740
PentaCB-(88)+(91)	ng/L	3.96	0.021	0.19				3445740
22'346'-PentaCB-(89)	ng/L	0.348	0.023	0.095				3445740
PentaCB-(90)+(101)+(113)	ng/L	31.7	0.019	0.29				3445740
22'355'-PentaCB-(92)	ng/L	5.34	0.022	0.095				3445740
PentaCB-(93)+(98)+(100)+(102)	ng/L	1.14	0.022	0.38				3445740
22'356'-PentaCB-(94)	ng/L	0.126	0.023	0.095				3445740
22'35'6-PentaCB-(95)	ng/L	24.1	0.021	0.095				3445740
22'366'-PentaCB-(96)	ng/L	0.207	0.018	0.095				3445740
22'45'6-PentaCB-(103)	ng/L	0.116	0.019	0.095				3445740
22'466'-PentaCB-(104)	ng/L	0.015 U	0.015	0.095				3445740
233'44'-PentaCB-(105)	ng/L	15.7	0.019	0.095	0.0000300	0.000471		3445740
233'45-PentaCB-(106)	ng/L	0.016 U	0.016	0.095				3445740
233'4'5-PentaCB-(107)	ng/L	1.97	0.015	0.095				3445740
PentaCB-(108)+(124)	ng/L	1.28	0.016	0.19				3445740
PentaCB-(110)+(115)	ng/L	50.9	0.019	0.19				3445740
233'55'-PentaCB-(111)	ng/L	0.015 U	0.015	0.095				3445740

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	Units	B19-SP-19-1-20131119	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'56-PentaCB-(112)	ng/L	0.016 U	0.016	0.095				3445740
2344'5-PentaCB-(114)	ng/L	0.691	0.018	0.095	0.0000300	0.0000207		3445740
23'44'5-PentaCB-(118)	ng/L	35.4	0.019	0.095	0.0000300	0.00106		3445740
23'455'-PentaCB-(120)	ng/L	0.034 J	0.015	0.095				3445740
23'45'6-PentaCB-(121)	ng/L	0.016 U	0.016	0.095				3445740
233'4'5'-PentaCB-(122)	ng/L	0.432	0.018	0.095				3445740
23'44'5'-PentaCB-(123)	ng/L	0.535	0.020	0.095	0.0000300	0.0000161		3445740
33'44'5-PentaCB-(126)	ng/L	0.131	0.018	0.095	0.100	0.0131		3445740
33'455'-PentaCB-(127)	ng/L	0.049 J	0.016	0.095				3445740
HexaCB-(128)+(166)	ng/L	8.38	0.019	0.19				3445740
HexaCB-(129)+(138)+(163)	ng/L	53.7	0.021	0.29				3445740
22'33'45'-HexaCB-(130)	ng/L	2.87	0.024	0.095				3445740
22'33'46-HexaCB-(131)	ng/L	0.691	0.028	0.095				3445740
22'33'46'-HexaCB-(132)	ng/L	16.3	0.024	0.095				3445740
22'33'55'-HexaCB-(133)	ng/L	0.421	0.022	0.095				3445740
HexaCB-(134)+(143)	ng/L	2.33	0.025	0.19				3445740
HexaCB-(135)+(151)	ng/L	10.1	0.027	0.19				3445740
22'33'66'-HexaCB-(136)	ng/L	4.04	0.021	0.095				3445740
22'344'5-HexaCB-(137)	ng/L	2.96	0.024	0.095				3445740
HexaCB-(139)+(140)	ng/L	0.68	0.020	0.19				3445740
22'3455'-HexaCB-(141)	ng/L	7.97	0.022	0.095				3445740
22'3456-HexaCB-(142)	ng/L	0.024 U	0.024	0.095				3445740
22'345'6-HexaCB-(144)	ng/L	1.59	0.027	0.095				3445740
22'3466'-HexaCB-(145)	ng/L	0.021 U	0.021	0.095				3445740
22'34'55'-HexaCB-(146)	ng/L	5.02	0.020	0.095				3445740
HexaCB-(147)+(149)	ng/L	28.3	0.020	0.19				3445740
22'34'56'-HexaCB-(148)	ng/L	0.027 U	0.027	0.095				3445740
22'34'66'-HexaCB-(150)	ng/L	0.032 J	0.019	0.095				3445740
22'3566'-HexaCB-(152)	ng/L	0.026 U	0.026	0.095				3445740

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Maxxam ID		UA0790						
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	Units	B19-SP-19-1-20131119	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
HexaCB-(153)+(168)	ng/L	30.5	0.017	0.19				3445740
22'44'56'-HexaCB-(154)	ng/L	0.240	0.024	0.095				3445740
22'44'66'-HexaCB-(155)	ng/L	0.021 U	0.021	0.095				3445740
HexaCB-(156)+(157)	ng/L	6.07	0.018	0.19	0.0000300	0.000182		3445740
233'44'6-HexaCB-(158)	ng/L	5.21	0.016	0.095				3445740
233'455'-HexaCB-(159)	ng/L	0.263	0.017	0.095				3445740
233'456-HexaCB-(160)	ng/L	0.017 U	0.017	0.095				3445740
233'45'6-HexaCB-(161)	ng/L	0.016 U	0.016	0.095				3445740
233'4'55'-HexaCB-(162)	ng/L	0.152	0.017	0.095				3445740
233'4'5'6-HexaCB-(164)	ng/L	2.83	0.016	0.095				3445740
233'55'6-HexaCB-(165)	ng/L	0.018 U	0.018	0.095				3445740
23'44'55'-HexaCB-(167)	ng/L	1.80	0.019	0.095	0.0000300	0.0000540		3445740
33'44'55'-HexaCB-(169)	ng/L	0.019 U	0.019	0.095	0.0300	0.000570		3445740
22'33'44'5-HeptaCB-(170)	ng/L	7.30	0.025	0.095				3445740
HeptaCB-(171)+(173)	ng/L	2.07	0.030	0.19				3445740
22'33'455'-HeptaCB-(172)	ng/L	1.17	0.031	0.095				3445740
22'33'456'-HeptaCB-(174)	ng/L	7.56	0.029	0.095				3445740
22'33'45'6-HeptaCB-(175)	ng/L	0.313	0.023	0.095				3445740
22'33'466'-HeptaCB-(176)	ng/L	0.773	0.017	0.095				3445740
22'33'45'6'-HeptaCB-(177)	ng/L	3.89	0.031	0.095				3445740
22'33'55'6-HeptaCB-(178)	ng/L	1.33	0.024	0.095				3445740
22'33'566'-HeptaCB-(179)	ng/L	2.67	0.017	0.095				3445740
HeptaCB-(180)+(193)	ng/L	19.3	0.024	0.19				3445740
22'344'56-HeptaCB-(181)	ng/L	0.095	0.028	0.095				3445740
22'344'56'-HeptaCB-(182)	ng/L	0.047 J	0.024	0.095				3445740
22'344'5'6-HeptaCB-(183)	ng/L	4.36	0.023	0.095				3445740
22'344'66'-HeptaCB-(184)	ng/L	0.016 U	0.016	0.095				3445740
22'3455'6-HeptaCB-(185)	ng/L	0.032 U	0.032	0.095				3445740
22'34566'-HeptaCB-(186)	ng/L	0.017 U	0.017	0.095				3445740

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	Units	B19-SP-19-1-20131119	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'34'55'6-HeptaCB-(187)	ng/L	9.71	0.022	0.095				3445740
22'34'566'-HeptaCB-(188)	ng/L	0.020 U	0.020	0.095				3445740
233'44'55'-HeptaCB-(189)	ng/L	0.313	0.023	0.095	0.0000300	0.00000939		3445740
233'44'56-HeptaCB-(190)	ng/L	1.41	0.024	0.095				3445740
233'44'5'6-HeptaCB-(191)	ng/L	0.258	0.022	0.095				3445740
233'455'6-HeptaCB-(192)	ng/L	0.023 U	0.023	0.095				3445740
22'33'44'55'-OctaCB-(194)	ng/L	6.18	0.024	0.095				3445740
22'33'44'56-OctaCB-(195)	ng/L	1.46	0.024	0.095				3445740
22'33'44'56'-OctaCB-(196)	ng/L	2.86	0.023	0.095				3445740
22'33'44'66'OctaCB-(197)	ng/L	0.158	0.017	0.095				3445740
OctaCB-(198)+(199)	ng/L	8.44	0.023	0.19				3445740
22'33'4566'-OctaCB-(200)	ng/L	0.685	0.015	0.095				3445740
22'33'45'66'-OctaCB-(201)	ng/L	0.827	0.016	0.095				3445740
22'33'55'66'-OctaCB-(202)	ng/L	1.88	0.021	0.095				3445740
22'344'55'6-OctaCB-(203)	ng/L	5.75	0.021	0.095				3445740
22'344'566'-OctaCB-(204)	ng/L	0.016 U	0.016	0.095				3445740
233'44'55'6-OctaCB-(205)	ng/L	0.210	0.020	0.095				3445740
22'33'44'55'6-NonaCB-(206)	ng/L	7.72	0.028	0.095				3445740
22'33'44'566'-NonaCB-(207)	ng/L	0.685	0.021	0.095				3445740
22'33'455'66'-NonaCB-(208)	ng/L	1.63	0.025	0.095				3445740
DecaCB-(209)	ng/L	1.59	0.025	0.095				3445740
Monochlorobiphenyl	ng/L	0.183	0.011	N/A			3	3445740
Dichlorobiphenyl	ng/L	13.4	0.023	N/A			10	3445740
Trichlorobiphenyl	ng/L	106	0.030	N/A			18	3445740
Tetrachlorobiphenyl	ng/L	172	0.031	N/A			24	3445740
Pentachlorobiphenyl	ng/L	235	0.026	N/A			25	3445740
Hexachlorobiphenyl	ng/L	192	0.028	N/A			24	3445740
Heptachlorobiphenyl	ng/L	62.6	0.032	N/A			17	3445740
Octachlorobiphenyl	ng/L	28.4	0.024	N/A			10	3445740

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Sampling Date		2013/11/18 09:45						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20131119	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Nonachlorobiphenyl	ng/L	10.0	0.028	N/A			3	3445740
Decachlorobiphenyl	ng/L	1.59	0.025	N/A			1	3445740
Total PCB	ng/L	822	N/A	N/A				3445740
TOTAL TOXIC EQUIVALENCY	ng/L					0.0157		
Surrogate Recovery (%)								
C13-2,44'-TriCB-(28)	%	113						3445740
C13-22'33'44'55'6-NonaCB-(206)	%	95						3445740
C13-22'33'44'5-HeptaCB-(170)	%	108						3445740
C13-22'33'455'66'-NonaCB-(208)	%	102						3445740
C13-22'33'55'66'-OctaCB-(202)	%	98						3445740
C13-22'33'55'6-HeptaCB-(178)	%	112						3445740
C13-22'344'55'-HeptaCB-(180)	%	108						3445740
C13-22'34'566'-HeptaCB-(188)	%	92						3445740
C13-22'44'66'-HexaCB-(155)	%	88						3445740
C13-22'466'-PentaCB-(104)	%	87						3445740
C13-22'66'-TetraCB-(54)	%	84						3445740
C13-22'6-TriCB-(19)	%	78						3445740
C13-22'-DiCB-(4)	%	58						3445740
C13-233'44'55'6-OctaCB-(205)	%	103						3445740
C13-233'44'55'-HeptaCB-(189)	%	113						3445740
C13-233'44'-PentaCB-(105)	%	105						3445740
C13-233'55'-PentaCB-(111)	%	103						3445740
C13-23'44'55'-HexaCB-(167)	%	104						3445740
C13-2344'5-PentaCB-(114)	%	101						3445740
C13-23'44'5-PentaCB-(118)	%	105						3445740
C13-2'344'5-PentaCB-(123)	%	106						3445740
C13-2-MonoCB-(1)	%	54						3445740
C13-33'44'55'-HexaCB-(169)	%	63						3445740
C13-33'44'5-PentaCB-(126)	%	102						3445740

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

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Maxxam Job #: B3K2315
Report Date: 2013/12/27

Apex Laboratories
Client Project #: A3K0592

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UA0790						
Sampling Date		2013/11/18 09:45						
COC Number		NA			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20131119	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-33'44'-TetraCB-(77)	%	121						3445740
C13-344'5-TetraCB-(81)	%	118						3445740
C13-344'-TriCB-(37)	%	113						3445740
C13-44'-DiCB-(15)	%	105						3445740
C13-4-MonoCB-(3)	%	69						3445740
C13-DecaCB-(209)	%	83						3445740
C13-HexaCB-(156)+(157)	%	102						3445740

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

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Maxxam Job #: B3K2315
Report Date: 2013/12/27

Apex Laboratories
Client Project #: A3K0592

Test Summary

Maxxam ID UA0787 **Collected** 2013/11/18
Sample ID B22-SP1-20131118 **Shipped**
Matrix Water **Received** 2013/11/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Dioxins/Furans in Water (8290A)	HRMS/MS	3444979	2013/12/02	2013/12/03	Owen Cosby
PCB Congeners in Water (1668A)	HRMS/MS	3445740	2013/11/29	2013/12/04	Cathy Xu

Maxxam ID UA0788 **Collected** 2013/11/18
Sample ID B20-SP-20A-1-20131118 **Shipped**
Matrix Water **Received** 2013/11/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Dioxins/Furans in Water (8290A)	HRMS/MS	3444979	2013/12/02	2013/12/04	Owen Cosby
PCB Congeners in Water (1668A)	HRMS/MS	3445740	2013/11/29	2013/12/04	Cathy Xu

Maxxam ID UA0789 **Collected** 2013/11/18
Sample ID B18-SP1-20131118 **Shipped**
Matrix Water **Received** 2013/11/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Dioxins/Furans in Water (8290A)	HRMS/MS	3444979	2013/12/02	2013/12/04	Owen Cosby
PCB Congeners in Water (1668A)	HRMS/MS	3445740	2013/11/29	2013/12/04	Cathy Xu

Maxxam ID UA0790 **Collected** 2013/11/18
Sample ID B19-SP-19-1-20131119 **Shipped**
Matrix Water **Received** 2013/11/22

Test Description	Instrumentation	Batch	Extracted	Analyzed	Analyst
Dioxins/Furans in Water (8290A)	HRMS/MS	3444979	2013/12/02	2013/12/04	Owen Cosby
PCB Congeners in Water (1668A)	HRMS/MS	3445740	2013/11/29	2013/12/04	Cathy Xu

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Maxxam Job #: B3K2315
Report Date: 2013/12/27

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Package 1	5.7°C
Package 2	5.4°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Revised report (2013/12/27): Homologs reported as per client's request.

Results relate only to the items tested.

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Apex Laboratories
Attention: Philip Nerenberg
Client Project #: A3K0592
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB3K2315

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3444979	OBC	Spiked Blank	C13-1234678 HeptaCDD	2013/12/03		113	%	40 - 135
			C13-1234678 HeptaCDF	2013/12/03		93	%	40 - 135
			C13-123478 HexaCDF	2013/12/03		94	%	40 - 135
			C13-123678 HexaCDD	2013/12/03		102	%	40 - 135
			C13-12378 PentaCDD	2013/12/03		125	%	40 - 135
			C13-12378 PentaCDF	2013/12/03		108	%	40 - 135
			C13-2378 TetraCDD	2013/12/03		63	%	40 - 135
			C13-2378 TetraCDF	2013/12/03		66	%	40 - 135
			C13-OCDD	2013/12/03		105	%	40 - 135
			2,3,7,8-Tetra CDD	2013/12/03		83	%	80 - 140
			1,2,3,7,8-Penta CDD	2013/12/03		83	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2013/12/03		81	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2013/12/03		82	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2013/12/03		84	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2013/12/03		81	%	80 - 140
			Octa CDD	2013/12/03		84	%	80 - 140
			2,3,7,8-Tetra CDF	2013/12/03		82	%	80 - 140
			1,2,3,7,8-Penta CDF	2013/12/03		80	%	80 - 140
			2,3,4,7,8-Penta CDF	2013/12/03		86	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2013/12/03		85	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2013/12/03		84	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2013/12/03		85	%	80 - 140
			1,2,3,7,8,9-Hexa CDF	2013/12/03		81	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2013/12/03		83	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2013/12/03		81	%	80 - 140
			Octa CDF	2013/12/03		80	%	80 - 140
		Method Blank	C13-1234678 HeptaCDD	2013/12/03		118	%	40 - 135
			C13-1234678 HeptaCDF	2013/12/03		99	%	40 - 135
			C13-123478 HexaCDF	2013/12/03		100	%	40 - 135
			C13-123678 HexaCDD	2013/12/03		109	%	40 - 135
			C13-12378 PentaCDD	2013/12/03		122	%	40 - 135
			C13-12378 PentaCDF	2013/12/03		112	%	40 - 135
			C13-2378 TetraCDD	2013/12/03		66	%	40 - 135
			C13-2378 TetraCDF	2013/12/03		68	%	40 - 135
			C13-OCDD	2013/12/03		115	%	40 - 135
			2,3,7,8-Tetra CDD	2013/12/03	2.1 U, EDL=2.1		pg/L	
			1,2,3,7,8-Penta CDD	2013/12/03	2.2 U, EDL=2.2		pg/L	
			1,2,3,4,7,8-Hexa CDD	2013/12/03	1.4 U, EDL=1.4		pg/L	
			1,2,3,6,7,8-Hexa CDD	2013/12/03	1.0 U, EDL=1.0		pg/L	
			1,2,3,7,8,9-Hexa CDD	2013/12/03	1.2 U, EDL=1.2		pg/L	
			1,2,3,4,6,7,8-Hepta CDD	2013/12/03	1.4 U, EDL=1.4 (1)		pg/L	
			Octa CDD	2013/12/03	2.4 J, EDL=1.1		pg/L	
			Total Tetra CDD	2013/12/03	2.1 U, EDL=2.1		pg/L	
			Total Penta CDD	2013/12/03	2.2 U, EDL=2.2		pg/L	
			Total Hexa CDD	2013/12/03	2.9 U, EDL=2.9 (1)		pg/L	
			Total Hepta CDD	2013/12/03	1.4 U, EDL=1.4 (1)		pg/L	
			2,3,7,8-Tetra CDF	2013/12/03	1.2 U, EDL=1.2		pg/L	
			1,2,3,7,8-Penta CDF	2013/12/03	1.3 U, EDL=1.3		pg/L	
			2,3,4,7,8-Penta CDF	2013/12/03	1.4 U, EDL=1.4		pg/L	
			1,2,3,4,7,8-Hexa CDF	2013/12/03	0.98 U, EDL=0.98		pg/L	
			1,2,3,6,7,8-Hexa CDF	2013/12/03	0.82 U, EDL=0.82		pg/L	
			2,3,4,6,7,8-Hexa CDF	2013/12/03	1.0 U, EDL=1.0		pg/L	
			1,2,3,7,8,9-Hexa CDF	2013/12/03	1.3 U, EDL=1.3		pg/L	
			1,2,3,4,6,7,8-Hepta CDF	2013/12/03	0.96 U, EDL=0.96		pg/L	
			1,2,3,4,7,8,9-Hepta CDF	2013/12/03	1.3 U, EDL=1.3		pg/L	

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Apex Laboratories
Attention: Philip Nerenberg
Client Project #: A3K0592
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB3K2315

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3444979	OBC	Method Blank	Octa CDF	2013/12/03	1.1 U, EDL=1.1		pg/L	
			Total Tetra CDF	2013/12/03	1.2 U, EDL=1.2		pg/L	
			Total Penta CDF	2013/12/03	1.4 U, EDL=1.4		pg/L	
			Total Hexa CDF	2013/12/03	0.99 U, EDL=0.99		pg/L	
			Total Hepta CDF	2013/12/03	1.1 U, EDL=1.1		pg/L	
3445740	CXU	Spiked Blank	C13-2,44'-TriCB-(28)	2013/12/04		68	%	40 - 125
			C13-22'33'44'55'6-NonaCB-(206)	2013/12/04		101	%	30 - 140
			C13-22'33'44'5-HeptaCB-(170)	2013/12/04		102	%	30 - 140
			C13-22'33'455'66'-NonaCB-(208)	2013/12/04		101	%	30 - 140
			C13-22'33'55'66'-OctaCB-(202)	2013/12/04		91	%	30 - 140
			C13-22'33'55'6-HeptaCB-(178)	2013/12/04		98	%	40 - 125
			C13-22'344'55'-HeptaCB-(180)	2013/12/04		102	%	30 - 140
			C13-22'34'566'-HeptaCB-(188)	2013/12/04		82	%	30 - 140
			C13-22'44'66'-HexaCB-(155)	2013/12/04		67	%	30 - 140
			C13-22'466'-PentaCB-(104)	2013/12/04		59	%	30 - 140
			C13-22'66'-TetraCB-(54)	2013/12/04		48	%	30 - 140
			C13-22'6-TriCB-(19)	2013/12/04		41	%	30 - 140
			C13-22'-DiCB-(4)	2013/12/04		26 (2)	%	30 - 140
			C13-233'44'55'6-OctaCB-(205)	2013/12/04		103	%	30 - 140
			C13-233'44'55'-HeptaCB-(189)	2013/12/04		111	%	30 - 140
			C13-233'44'-PentaCB-(105)	2013/12/04		97	%	30 - 140
			C13-233'55'-PentaCB-(111)	2013/12/04		82	%	40 - 125
			C13-23'44'55'-HexaCB-(167)	2013/12/04		96	%	30 - 140
			C13-2344'5-PentaCB-(114)	2013/12/04		93	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2013/12/04		96	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2013/12/04		91	%	30 - 140
			C13-2-MonoCB-(1)	2013/12/04		25	%	15 - 140
			C13-33'44'55'-HexaCB-(169)	2013/12/04		67	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2013/12/04		100	%	30 - 140
			C13-33'44'-TetraCB-(77)	2013/12/04		103	%	30 - 140
			C13-344'5-TetraCB-(81)	2013/12/04		102	%	30 - 140
			C13-344'-TriCB-(37)	2013/12/04		82	%	30 - 140
			C13-44'-DiCB-(15)	2013/12/04		60	%	30 - 140
			C13-4-MonoCB-(3)	2013/12/04		30	%	15 - 140
			C13-DecaCB-(209)	2013/12/04		91	%	30 - 140
			C13-HexaCB-(156)+(157)	2013/12/04		101	%	30 - 140
			2-MonoCB-(1)	2013/12/04		109	%	50 - 150
			4-MonoCB-(3)	2013/12/04		96	%	50 - 150
			22'-DiCB-(4)	2013/12/04		102	%	50 - 150
			4,4'-DiCB-(15)	2013/12/04		90	%	50 - 150
			22'6-TriCB-(19)	2013/12/04		96	%	50 - 150
			235-TriCB-(23)	2013/12/04		92	%	50 - 150
			23'5'-TriCB-(34)	2013/12/04		85	%	50 - 150
			344'-TriCB-(37)	2013/12/04		88	%	50 - 150
			22'66'-TetraCB-(54)	2013/12/04		95	%	50 - 150
			33'44'-TetraCB-(77)	2013/12/04		91	%	50 - 150
			344'5-TetraCB-(81)	2013/12/04		88	%	50 - 150
			22'466'-PentaCB-(104)	2013/12/04		95	%	50 - 150
			233'44'-PentaCB-(105)	2013/12/04		89	%	50 - 150
			2344'5-PentaCB-(114)	2013/12/04		89	%	50 - 150
			23'44'5-PentaCB-(118)	2013/12/04		89	%	50 - 150
			23'44'5'-PentaCB-(123)	2013/12/04		99	%	50 - 150
			33'44'5-PentaCB-(126)	2013/12/04		85	%	50 - 150
			22'44'66'-HexaCB-(155)	2013/12/04		95	%	50 - 150
			HexaCB-(156)+(157)	2013/12/04		91	%	50 - 150

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Attention: Philip Nerenberg
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Quality Assurance Report (Continued)

Maxxam Job Number: GB3K2315

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3445740	CXU	Spiked Blank	23'44'55'-HexaCB-(167)	2013/12/04		93	%	50 - 150
			33'44'55'-HexaCB-(169)	2013/12/04		95	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2013/12/04		97	%	50 - 150
			HeptaCB-(180)+(193)	2013/12/04		90	%	50 - 150
			22'344'56'-HeptaCB-(182)	2013/12/04		88	%	50 - 150
			22'34'55'6-HeptaCB-(187)	2013/12/04		81	%	50 - 150
			22'34'566'-HeptaCB-(188)	2013/12/04		93	%	50 - 150
			233'44'55'-HeptaCB-(189)	2013/12/04		90	%	50 - 150
			22'33'55'66'-OctaCB-(202)	2013/12/04		98	%	50 - 150
			233'44'55'6-OctaCB-(205)	2013/12/04		100	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2013/12/04		97	%	50 - 150
			22'33'455'66'-NonaCB-(208)	2013/12/04		97	%	50 - 150
			DecaCB-(209)	2013/12/04		100	%	50 - 150
		Method Blank	C13-2,44'-TriCB-(28)	2013/12/04		58	%	40 - 125
			C13-22'33'44'55'6-NonaCB-(206)	2013/12/04		93	%	30 - 140
			C13-22'33'44'5-HeptaCB-(170)	2013/12/04		95	%	30 - 140
			C13-22'33'455'66'-NonaCB-(208)	2013/12/04		93	%	30 - 140
			C13-22'33'55'66'-OctaCB-(202)	2013/12/04		88	%	30 - 140
			C13-22'33'55'6-HeptaCB-(178)	2013/12/04		97	%	40 - 125
			C13-22'344'55'-HeptaCB-(180)	2013/12/04		97	%	30 - 140
			C13-22'34'566'-HeptaCB-(188)	2013/12/04		80	%	30 - 140
			C13-22'44'66'-HexaCB-(155)	2013/12/04		67	%	30 - 140
			C13-22'466'-PentaCB-(104)	2013/12/04		52	%	30 - 140
			C13-22'66'-TetraCB-(54)	2013/12/04		39	%	30 - 140
			C13-22'6-TriCB-(19)	2013/12/04		32	%	30 - 140
			C13-22'-DiCB-(4)	2013/12/04		20 (3)	%	30 - 140
			C13-233'44'55'6-OctaCB-(205)	2013/12/04		94	%	30 - 140
			C13-233'44'55'-HeptaCB-(189)	2013/12/04		100	%	30 - 140
			C13-233'44'-PentaCB-(105)	2013/12/04		95	%	30 - 140
			C13-233'55'-PentaCB-(111)	2013/12/04		82	%	40 - 125
			C13-23'44'55'-HexaCB-(167)	2013/12/04		92	%	30 - 140
			C13-2344'5-PentaCB-(114)	2013/12/04		88	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2013/12/04		92	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2013/12/04		91	%	30 - 140
			C13-2-MonoCB-(1)	2013/12/04		19	%	15 - 140
			C13-33'44'55'-HexaCB-(169)	2013/12/04		60	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2013/12/04		93	%	30 - 140
			C13-33'44'-TetraCB-(77)	2013/12/04		100	%	30 - 140
			C13-344'5-TetraCB-(81)	2013/12/04		97	%	30 - 140
			C13-344'-TriCB-(37)	2013/12/04		73	%	30 - 140
			C13-44'-DiCB-(15)	2013/12/04		48	%	30 - 140
			C13-4-MonoCB-(3)	2013/12/04		22	%	15 - 140
			C13-DecaCB-(209)	2013/12/04		83	%	30 - 140
			C13-HexaCB-(156)+(157)	2013/12/04		92	%	30 - 140
			2-MonoCB-(1)	2013/12/04	0.021 U, EDL=0.021		ng/L	
			3-MonoCB-(2)	2013/12/04	0.018 U, EDL=0.018		ng/L	
			4-MonoCB-(3)	2013/12/04	0.020 U, EDL=0.020		ng/L	
			22'-DiCB-(4)	2013/12/04	0.025 U, EDL=0.025		ng/L	
			2,3-DiCB-(5)	2013/12/04	0.020 U, EDL=0.020		ng/L	
			2,3'-DiCB-(6)	2013/12/04	0.018 U, EDL=0.018		ng/L	
			2,4-DiCB-(7)	2013/12/04	0.018 U, EDL=0.018		ng/L	
			2,4'-DiCB-(8)	2013/12/04	0.016 U, EDL=0.016		ng/L	
			2,5-DiCB-(9)	2013/12/04	0.017 U, EDL=0.017		ng/L	
			2,6-DiCB-(10)	2013/12/04	0.020 U, EDL=0.020		ng/L	
			3,3'-DiCB-(11)	2013/12/04	0.058 U, EDL=0.058 (1)		ng/L	

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Apex Laboratories
Attention: Philip Nerenberg
Client Project #: A3K0592
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB3K2315

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3445740	CXU	Method Blank	DiCB-(12)+(13)	2013/12/04	0.018 U, EDL=0.018		ng/L	
			3,5-DiCB-(14)	2013/12/04	0.017 U, EDL=0.017		ng/L	
			4,4'-DiCB-(15)	2013/12/04	0.030 U, EDL=0.030		ng/L	
			22'3-TriCB-(16)	2013/12/04	0.051 U, EDL=0.051		ng/L	
			22'4-TriCB-(17)	2013/12/04	0.045 U, EDL=0.045		ng/L	
			TriCB-(18)+(30)	2013/12/04	0.035 U, EDL=0.035		ng/L	
			22'6-TriCB-(19)	2013/12/04	0.040 U, EDL=0.040		ng/L	
			TriCB-(20) + (28)	2013/12/04	0.019 U, EDL=0.019		ng/L	
			TriCB-(21)+(33)	2013/12/04	0.020 U, EDL=0.020		ng/L	
			234'-TriCB-(22)	2013/12/04	0.020 U, EDL=0.020		ng/L	
			235-TriCB-(23)	2013/12/04	0.020 U, EDL=0.020		ng/L	
			236-TriCB-(24)	2013/12/04	0.032 U, EDL=0.032		ng/L	
			23'4-TriCB-(25)	2013/12/04	0.020 U, EDL=0.020		ng/L	
			TriCB-(26)+(29)	2013/12/04	0.019 U, EDL=0.019		ng/L	
			23'6-TriCB-(27)	2013/12/04	0.030 U, EDL=0.030		ng/L	
			24'5-TriCB-(31)	2013/12/04	0.018 U, EDL=0.018		ng/L	
			24'6-TriCB-(32)	2013/12/04	0.028 U, EDL=0.028		ng/L	
			23'5'-TriCB-(34)	2013/12/04	0.020 U, EDL=0.020		ng/L	
			33'4-TriCB-(35)	2013/12/04	0.019 U, EDL=0.019		ng/L	
			33'5-TriCB-(36)	2013/12/04	0.016 U, EDL=0.016		ng/L	
			344'-TriCB-(37)	2013/12/04	0.023 U, EDL=0.023		ng/L	
			345-TriCB-(38)	2013/12/04	0.019 U, EDL=0.019		ng/L	
			34'5-TriCB-(39)	2013/12/04	0.017 U, EDL=0.017		ng/L	
			TetraCB-(40)+(41)+(71)	2013/12/04	0.022 U, EDL=0.022		ng/L	
			22'34'-TetraCB-(42)	2013/12/04	0.026 U, EDL=0.026		ng/L	
			22'35-TetraCB-(43)	2013/12/04	0.036 U, EDL=0.036		ng/L	
			TetraCB-(44)+(47)+(65)	2013/12/04	0.022 U, EDL=0.022		ng/L	
			TetraCB-(45)+(51)	2013/12/04	0.022 U, EDL=0.022		ng/L	
			22'36'-TetraCB-(46)	2013/12/04	0.027 U, EDL=0.027		ng/L	
			22'45-TetraCB-(48)	2013/12/04	0.022 U, EDL=0.022		ng/L	
			TetraCB-(49)+TetraCB-(69)	2013/12/04	0.020 U, EDL=0.020		ng/L	
			TetraCB-(50)+(53)	2013/12/04	0.022 U, EDL=0.022		ng/L	
			22'55'-TetraCB-(52)	2013/12/04	0.020 U, EDL=0.020		ng/L	
			22'66'-TetraCB-(54)	2013/12/04	0.026 U, EDL=0.026		ng/L	
			233'4-TetraCB-(55)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			233'4'-Tetra CB(56)	2013/12/04	0.014 U, EDL=0.014		ng/L	
			233'5-TetraCB-(57)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			233'5'-TetraCB-(58)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			TetraCB-(59)+(62)+(75)	2013/12/04	0.017 U, EDL=0.017		ng/L	
			2344'-TetraCB -(60)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			TetraCB-(61)+(70)+(74)+(76)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			234'5-TetraCB-(63)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			234'6-TetraCB-(64)	2013/12/04	0.019 U, EDL=0.019		ng/L	
			23'44'-TetraCB-(66)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			23'45-TetraCB-(67)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			23'45'-TetraCB-(68)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			23'55'-TetraCB-(72)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			23'5'6-TetraCB-(73)	2013/12/04	0.015 U, EDL=0.015		ng/L	
			33'44'-TetraCB-(77)	2013/12/04	0.015 U, EDL=0.015		ng/L	
			33'45-TetraCB-(78)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			33'45'-TetraCB(79)	2013/12/04	0.011 U, EDL=0.011		ng/L	
			33'55'-TetraCB-(80)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			344'5-TetraCB-(81)	2013/12/04	0.016 U, EDL=0.016		ng/L	
			22'33'4-PentaCB-(82)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			PentaCB-(83)+(99)	2013/12/04	0.010 U, EDL=0.010		ng/L	

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Quality Assurance Report (Continued)

Maxxam Job Number: GB3K2315

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3445740	CXU	Method Blank	22'33'6-PentaCB-(84)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			PentaCB-(85)+(116)+(117)	2013/12/04	0.0080 U, EDL=0.0080		ng/L	
			PentaCB-(86)(87)(97)(109)(119)(125)	2013/12/04	0.0088 U, EDL=0.0088		ng/L	
			PentaCB-(88)+(91)	2013/12/04	0.010 U, EDL=0.010		ng/L	
			22'346'-PentaCB-(89)	2013/12/04	0.011 U, EDL=0.011		ng/L	
			PentaCB-(90)+(101)+(113)	2013/12/04	0.0089 U, EDL=0.0089		ng/L	
			22'355'-PentaCB-(92)	2013/12/04	0.010 U, EDL=0.010		ng/L	
			PentaCB-(93)+(98)+(100)+(102)	2013/12/04	0.011 U, EDL=0.011		ng/L	
			22'356'-PentaCB-(94)	2013/12/04	0.011 U, EDL=0.011		ng/L	
			22'35'6-PentaCB-(95)	2013/12/04	0.0099 U, EDL=0.0099		ng/L	
			22'366'-PentaCB-(96)	2013/12/04	0.0092 U, EDL=0.0092		ng/L	
			22'45'6-PentaCB-(103)	2013/12/04	0.0090 U, EDL=0.0090		ng/L	
			22'466'-PentaCB-(104)	2013/12/04	0.0080 U, EDL=0.0080		ng/L	
			233'44'-PentaCB-(105)	2013/12/04	0.016 U, EDL=0.016		ng/L	
			233'45-PentaCB-(106)	2013/12/04	0.014 U, EDL=0.014		ng/L	
			233'4'5-PentaCB-(107)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			PentaCB-(108)+(124)	2013/12/04	0.014 U, EDL=0.014		ng/L	
			PentaCB-(110)+(115)	2013/12/04	0.0088 U, EDL=0.0088		ng/L	
			233'55'-PentaCB-(111)	2013/12/04	0.0072 U, EDL=0.0072		ng/L	
			233'56-PentaCB-(112)	2013/12/04	0.0078 U, EDL=0.0078		ng/L	
			2344'5-PentaCB-(114)	2013/12/04	0.015 U, EDL=0.015		ng/L	
			23'44'5-PentaCB-(118)	2013/12/04	0.016 U, EDL=0.016		ng/L	
			23'455'-PentaCB-(120)	2013/12/04	0.0071 U, EDL=0.0071		ng/L	
			23'45'6-PentaCB-(121)	2013/12/04	0.0074 U, EDL=0.0074		ng/L	
			233'4'5'-PentaCB-(122)	2013/12/04	0.015 U, EDL=0.015		ng/L	
			23'44'5'-PentaCB-(123)	2013/12/04	0.017 U, EDL=0.017		ng/L	
			33'44'5-PentaCB-(126)	2013/12/04	0.015 U, EDL=0.015		ng/L	
			33'455'-PentaCB-(127)	2013/12/04	0.014 U, EDL=0.014		ng/L	
			HexaCB-(128)+(166)	2013/12/04	0.029 U, EDL=0.029		ng/L	
			HexaCB-(129)+(138)+(163)	2013/12/04	0.033 U, EDL=0.033		ng/L	
			22'33'45'-HexaCB-(130)	2013/12/04	0.037 U, EDL=0.037		ng/L	
			22'33'46-HexaCB-(131)	2013/12/04	0.042 U, EDL=0.042		ng/L	
			22'33'46'-HexaCB-(132)	2013/12/04	0.036 U, EDL=0.036		ng/L	
			22'33'55'-HexaCB-(133)	2013/12/04	0.034 U, EDL=0.034		ng/L	
			HexaCB-(134)+(143)	2013/12/04	0.038 U, EDL=0.038		ng/L	
			HexaCB-(135)+(151)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			22'33'66'-HexaCB-(136)	2013/12/04	0.0098 U, EDL=0.0098		ng/L	
			22'344'5-HexaCB-(137)	2013/12/04	0.036 U, EDL=0.036		ng/L	
			HexaCB-(139)+(140)	2013/12/04	0.031 U, EDL=0.031		ng/L	
			22'3455'-HexaCB-(141)	2013/12/04	0.034 U, EDL=0.034		ng/L	
			22'3456-HexaCB-(142)	2013/12/04	0.037 U, EDL=0.037		ng/L	
			22'345'6-HexaCB-(144)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			22'3466'-HexaCB-(145)	2013/12/04	0.010 U, EDL=0.010		ng/L	
			22'34'55'-HexaCB-(146)	2013/12/04	0.031 U, EDL=0.031		ng/L	
			HexaCB-(147)+(149)	2013/12/04	0.031 U, EDL=0.031		ng/L	
			22'34'56'-HexaCB-(148)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			22'34'66'-HexaCB-(150)	2013/12/04	0.0092 U, EDL=0.0092		ng/L	
			22'3566'-HexaCB-(152)	2013/12/04	0.010 U, EDL=0.010		ng/L	
			HexaCB-(153)+(168)	2013/12/04	0.026 U, EDL=0.026		ng/L	
			22'44'56'-HexaCB-(154)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			22'44'66'-HexaCB-(155)	2013/12/04	0.010 U, EDL=0.010		ng/L	
			HexaCB-(156)+(157)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			233'44'6-HexaCB-(158)	2013/12/04	0.024 U, EDL=0.024		ng/L	
			233'455'-HexaCB-(159)	2013/12/04	0.011 U, EDL=0.011		ng/L	
			233'456-HexaCB-(160)	2013/12/04	0.025 U, EDL=0.025		ng/L	

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	%Recovery	Units	QC Limits
3445740	CXU	Method Blank	233'45'6-HexaCB-(161)	2013/12/04	0.025 U, EDL=0.025		ng/L	
			233'4'55'-HexaCB-(162)	2013/12/04	0.011 U, EDL=0.011		ng/L	
			233'4'5'6-HexaCB-(164)	2013/12/04	0.024 U, EDL=0.024		ng/L	
			233'55'6-HexaCB-(165)	2013/12/04	0.027 U, EDL=0.027		ng/L	
			23'44'55'-HexaCB-(167)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			33'44'55'-HexaCB-(169)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			22'33'44'5-HeptaCB-(170)	2013/12/04	0.010 U, EDL=0.010		ng/L	
			HeptaCB-(171)+(173)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			22'33'455'-HeptaCB-(172)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			22'33'456'-HeptaCB-(174)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			22'33'45'6-HeptaCB-(175)	2013/12/04	0.014 U, EDL=0.014		ng/L	
			22'33'466'-HeptaCB-(176)	2013/12/04	0.010 U, EDL=0.010		ng/L	
			22'33'45'6'-HeptaCB-(177)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			22'33'55'6-HeptaCB-(178)	2013/12/04	0.014 U, EDL=0.014		ng/L	
			22'33'566'-HeptaCB-(179)	2013/12/04	0.010 U, EDL=0.010		ng/L	
			HeptaCB-(180)+(193)	2013/12/04	0.0099 U, EDL=0.0099		ng/L	
			22'344'56-HeptaCB-(181)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			22'344'56'-HeptaCB-(182)	2013/12/04	0.014 U, EDL=0.014		ng/L	
			22'344'5'6-HeptaCB-(183)	2013/12/04	0.0097 U, EDL=0.0097		ng/L	
			22'344'66'-HeptaCB-(184)	2013/12/04	0.0096 U, EDL=0.0096		ng/L	
			22'3455'6-HeptaCB-(185)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			22'34566'-HeptaCB-(186)	2013/12/04	0.010 U, EDL=0.010		ng/L	
			22'34'55'6-HeptaCB-(187)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			22'34'566'-HeptaCB-(188)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			233'44'55'-HeptaCB-(189)	2013/12/04	0.018 U, EDL=0.018		ng/L	
			233'44'56-HeptaCB-(190)	2013/12/04	0.0098 U, EDL=0.0098		ng/L	
			233'44'5'6-HeptaCB-(191)	2013/12/04	0.0091 U, EDL=0.0091		ng/L	
			233'455'6-HeptaCB-(192)	2013/12/04	0.0096 U, EDL=0.0096		ng/L	
			22'33'44'55'-OctaCB-(194)	2013/12/04	0.014 U, EDL=0.014		ng/L	
			22'33'44'56-OctaCB-(195)	2013/12/04	0.014 U, EDL=0.014		ng/L	
			22'33'44'56'-OctaCB-(196)	2013/12/04	0.018 U, EDL=0.018		ng/L	
			22'33'44'66'OctaCB-(197)	2013/12/04	0.013 U, EDL=0.013		ng/L	
			OctaCB-(198)+(199)	2013/12/04	0.018 U, EDL=0.018		ng/L	
			22'33'4566'-OctaCB-(200)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			22'33'45'66'-OctaCB-(201)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			22'33'55'66'-OctaCB-(202)	2013/12/04	0.016 U, EDL=0.016		ng/L	
			22'344'55'6-OctaCB-(203)	2013/12/04	0.017 U, EDL=0.017		ng/L	
			22'344'566'-OctaCB-(204)	2013/12/04	0.012 U, EDL=0.012		ng/L	
			233'44'55'6-OctaCB-(205)	2013/12/04	0.011 U, EDL=0.011		ng/L	
			22'33'44'55'6-NonaCB-(206)	2013/12/04	0.022 U, EDL=0.022		ng/L	
			22'33'44'566'-NonaCB-(207)	2013/12/04	0.016 U, EDL=0.016		ng/L	
			22'33'455'66'-NonaCB-(208)	2013/12/04	0.020 U, EDL=0.020		ng/L	
			DecaCB-(209)	2013/12/04	0.019 U, EDL=0.019		ng/L	
			Monochlorobiphenyl	2013/12/04	0.021 U, EDL=0.021		ng/L	
			Dichlorobiphenyl	2013/12/04	0.030 U, EDL=0.030		ng/L	
			Trichlorobiphenyl	2013/12/04	0.051 U, EDL=0.051		ng/L	
			Tetrachlorobiphenyl	2013/12/04	0.036 U, EDL=0.036		ng/L	
			Pentachlorobiphenyl	2013/12/04	0.017 U, EDL=0.017		ng/L	
			Hexachlorobiphenyl	2013/12/04	0.042 U, EDL=0.042		ng/L	
			Heptachlorobiphenyl	2013/12/04	0.018 U, EDL=0.018		ng/L	
			Octachlorobiphenyl	2013/12/04	0.018 U, EDL=0.018		ng/L	
			Nonachlorobiphenyl	2013/12/04	0.022 U, EDL=0.022		ng/L	
			Decachlorobiphenyl	2013/12/04	0.0030 U, EDL=0.0030		ng/L	
			Total PCB	2013/12/04	0		ng/L	

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method

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Quality Assurance Report (Continued)

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accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.
(2) Result is within method acceptable criteria(25-150% recovery).
(3) Result is lower than method acceptable criteria(25-150% recovery) in blank,
Minimal impact on data

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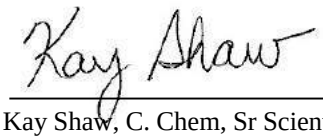
Validation Signature Page

Maxxam Job #: B3K2315

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Kay Shaw, C. Chem, Sr Scientific Specialist, HRMS Services

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Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Basin 20 Storm Water Sampling and Analysis Data
January 7, 2014 Sampling Event, Source Control Evaluation,
Burgard Industrial Park, Portland, Oregon
Bridgewater Group, Inc., 2014

BRIDGEWATER GROUP, INC.

Basin 20 Storm Water Sampling and Analysis Data
January 7, 2014 Sampling Event
Source Control Evaluation
Burgard Industrial Park
Portland, Oregon

TO: Jim Orr/Oregon DEQ

CC: Mat Cusma/Schnitzer
Mark Bartee/Schnitzer

FROM: Ross Rieke/Bridgewater Group

DATE: April 2, 2014

This memorandum presents the results of the January 7, 2014 storm water sampling and analysis performed at Basin 20 at the Burgard Industrial Park (BIP) in Portland, Oregon (Figure 1, Figure 2). The storm water sampling and analysis were performed in general accordance with the March 12, 2013 *Basin 19, 20, and 20A Sampling and Analysis Plan*.

Basin 20 Description

Based on 2012 and 2013 smoke testing, flow testing, and dye testing and a City of Portland video survey of Basin 21 conveyance and discharge system, Outfall 20 appears to drain an approximately 1.7 acre area north of the head of the IT slip (Figure 3). Activities in this predominantly paved area include Schnitzer Steel vendor and employee vehicle traffic and vehicle traffic related to other BIP entities (Wilbur-Ellis, RB Rubber Recycling), as well as non-BIP (Rock-Tenn) employee, vendor, and customer car and truck traffic and material storage.

Historical storm water system drawings showed Outfall 20 draining an area immediately south of Burgard Way, east of the head of the IT slip. However, site observations during periods of extended heavy rainfall in 2011 noted that this area does not drain and storm water is retained on the area and eventually infiltrates and/or evaporates.

Basin 20 Storm Water Sampling and Analysis

Storm Water Sample Collection

A Basin 20 storm water sample was collected on January 7, 2014 at the Basin 20 outfall at the IT Slip. Table 1 presents the rainfall conditions preceding, and during, the storm water sampling event. A January 8, 2014 email to DEQ described the specific rainfall and flow conditions during the sampling event and requested DEQ's input on whether the samples sufficiently met the criteria to be acceptable for analysis. DEQ reviewed the rainfall and flow conditions and concurred that the samples are representative in a subsequent January 8, 2014 email.

As described in the January 28, 2014 Basin 20 data report, the Basin 20 discharge sample was collected from a "quieting basin" constructed where the Basin 20 discharge flow emanated from the bank. The quieting basin was about 20-inches long, about 6-inches wide, and three to four inches deep. The bottom of the basin was lined with clean, gravelly sand. The storm water sample was collected by lowering a stainless steel container into the discharging water and

filling the container. The container was filled by placing the container opening facing away from the flowing water. The sample was then poured into the laboratory-supplied sample container specific for each analysis. Overall, the storm water sample was collected in a manner that minimized potentially suspended bank soil particulates in the sample.

Storm Water Sample Analysis

The Basin 20 storm water sample was analyzed for the following:

- PCB aroclors, homologs, and congeners;
- Phthalates;
- Dioxins/furans;
- Butyltins;
- Aluminum, antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, and zinc;
- Polycyclic aromatic hydrocarbons (PAHs);
- Organochlorine pesticides;
- Petroleum Hydrocarbons (gasoline, diesel, and heavy oil);
- Total suspended solids (TSS); and
- Total organic carbon (TOC).

Table 2 presents the results of the Basin 20 storm water sample analyses. Copies of the analytical laboratory reports are provided in Appendix A. Review of the laboratory QA/QC results did not indicate any issues requiring corrective action.

Attachments:

Table 1 – Storm Water Sampling Event Rainfall Data, 1/7/2014 Sampling Event
Table 2 – Storm Water Sample Analytical Laboratory Results
Figure 1 – Site Location Map
Figure 2 – Burgard Industrial Park Site Plan
Figure 3 – Basin 20 Storm Water Sample Location
Appendix A – Analytical Laboratory Reports

Tables

Table 1
Storm Water Sampling Event Rainfall Data
1/7/2014 Sampling Event
Burgard Industrial Park Basin 20

Date	Daily Total	Hourly Rain Fall (0.01 inches)																							
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
12/25/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/26/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/27/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/28/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/29/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/30/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/1/14	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/2/14	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3
1/3/14	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/4/14	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/5/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/6/14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
1/7/14	45	0	0	0	1	0	0	0	0	1	0	0	0	2	13	3	0	1	0	6	10	3	0	3	2

Sample collected at 14:45

Data from Shipyard Rain Gage - 8900 N. Sever Road

Sampling Day

Sampling Hour

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 20

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	B20-SP1 11/18/2013	B20-SP1 1/7/2014
PAHs (ug/l)				
Acenaphthene	0.2		0.095 U	0.10 U
Acenaphthylene	0.2		0.095 U	0.10 U
Anthracene			0.095 U	0.10 U
Benzo(a)anthracene	0.018		0.10 U	0.10 U
Benzo(a)pyrene	0.018		0.16 J	0.15 U
Benzo(b+k)fluoranthene	0.018		0.14 J	0.15 U
Benzo(g,h,i)perylene	0.2		0.10 J	0.10 U
Chrysene	0.018		0.13 J	0.12 J
Dibenzo(a,h)anthracene	0.018		0.10 U	0.10 U
Fluoranthene	0.2		0.14 J	0.15 J
Fluorene	0.2		0.095 U	0.10 U
Indeno(1,2,3-cd)pyrene	0.018		0.10 U	0.10 U
Naphthalene	0.2		0.19 U	0.20 U
Phenanthrene	0.2		0.10 U	0.12 J
Pyrene	0.2		0.17 J	0.19 J
Total Detected PAHs		1	0.82	0.58
PCBs (ug/l)				
Aroclor 1016	0.96		0.010 U	0.019 U
Aroclor 1221	0.034		0.010 U	0.019 U
Aroclor 1232	0.034		0.010 U	0.019 U
Aroclor 1242	0.034		0.021	0.055
Aroclor 1248	0.034		0.010 U	0.019 U
Aroclor 1254	0.034		0.038	0.075
Aroclor 1260	0.034		0.023	0.043
Total Detected PCB aroclors	0.000064		0.082	0.17
PCB Congeners (ng/l)				
2-MonoCB-(1)			0.033 U	0.11
3-MonoCB-(2)			0.016 U	0.016 J
4-MonoCB-(3)			0.024 J	0.057 J
22'-DiCB-(4)			0.33	1.0
2,3-DiCB-(5)			0.017 U	0.031 U
2,3'-DiCB-(6)			0.11	0.33
2,4-DiCB-(7)			0.015 U	0.050 U
2,4'-DiCB-(8)			0.54	1.3
2,5-DiCB-(9)			0.028 J	0.086 U
2,6-DiCB-(10)			0.015 U	0.019 U
3,3'-DiCB-(11)			0.50	0.72
DiCB-(12)+(13)			0.063 U	0.16 J
3,5-DiCB-(14)			0.015 U	0.021 U
4,4'-DiCB-(15)			0.66	1.7
22'3-TriCB-(16)			0.58	2.0
22'4-TriCB-(17)			0.52	1.5
TriCB-(18)+(30)			1.1	3.0
22'6-TriCB-(19)			0.14	0.39
TriCB-(20) + (28)			2.5	6.1
TriCB-(21)+(33)			1.4	3.7
234'-TriCB-(22)			1.0	2.4
235-TriCB-(23)			0.020 U	0.0033 U
236-TriCB-(24)			0.029 J	0.0050 U
23'4-TriCB-(25)			0.18	0.44
TriCB-(26)+(29)			0.36	1.0
23'6-TriCB-(27)			0.10 J	0.26
24'5-TriCB-(31)			1.9	4.8
24'6-TriCB-(32)			0.38	1.1

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 20

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	B20-SP1 11/18/2013	B20-SP1 1/7/2014
23'5'-TriCB-(34)			0.020 U	0.0032 U
33'4-TriCB-(35)			0.047 J	0.12
33'5-TriCB-(36)			0.016 U	0.0030 U
344'-TriCB-(37)			0.94	2.2
345-TriCB-(38)			0.019 U	0.0033 U
34'5-TriCB-(39)			0.017 U	0.022 J
TetraCB-(40)+(41)+(71)			1.3	3.1
22'34'-TetraCB-(42)			0.67	1.7
22'35-TetraCB-(43)			0.10 J	0.23
TetraCB-(44)+(47)+(65)			2.2	5.3
TetraCB-(45)+(51)			0.33	0.85
22'36'-TetraCB-(46)			0.13	0.31
22'45-TetraCB-(48)			0.39	0.92
TetraCB-(49)+TetraCB-(69)			1.1	2.8
TetraCB-(50)+(53)			0.23	0.58
22'55'-TetraCB-(52)			2.2	5.6
22'66'-TetraCB-(54)			0.016 U	0.010 U
233'4-TetraCB-(55)			0.018 U	0.0054 U
233'4'-Tetra CB(56)			0.83	1.8
233'5-TetraCB-(57)			0.018 U	0.0053 U
233'5'-TetraCB-(58)			0.018 U	0.0052 U
TetraCB-(59)+(62)+(75)			0.20 J	0.45
2344'-TetraCB -(60)			0.35	0.81
TetraCB-(61)+(70)+(74)+(76)			3.0	6.5
234'5-TetraCB-(63)			0.048 J	0.11
234'6-TetraCB-(64)			1.1	2.4
23'44'-TetraCB-(66)			1.5	3.4
23'45-TetraCB-(67)			0.053 J	0.13
23'45'-TetraCB-(68)			0.016 U	0.012 J
23'55'-TetraCB-(72)			0.017 U	0.020 J
23'5'6-TetraCB-(73)			0.016 U	0.00093 U
33'44'-TetraCB-(77)			0.24	0.46
33'45-TetraCB-(78)			0.018 U	0.0056 U
33'45'-TetraCB(79)			0.030 J	0.058 J
33'55'-TetraCB-(80)			0.016 U	0.0050 U
344'5-TetraCB-(81)			0.022 U	0.013 J
22'33'4-PentaCB-(82)			0.51	1.0
PentaCB-(83)+(99)			1.7	3.3
22'33'6-PentaCB-(84)			0.90	1.9
PentaCB-(85)+(116)+(117)			0.52	1.0
PentaCB-(86)(87)(97)(109)(119)(125)			2.6	5.1
PentaCB-(88)+(91)			0.39	0.78
22'346'-PentaCB-(89)			0.036 J	0.068 J
PentaCB-(90)+(101)+(113)			3.3	6.5
22'355'-PentaCB-(92)			0.55	1.1
PentaCB-(93)+(98)+(100)+(102)			0.12 J	0.23 J
22'356'-PentaCB-(94)			0.021 U	0.027 J
22'35'6-PentaCB-(95)			2.3	4.7
22'366'-PentaCB-(96)			0.019 U	0.039 J
22'45'6-PentaCB-(103)			0.018 U	0.025 J
22'466'-PentaCB-(104)			0.016 U	0.0026 U
233'44'-PentaCB-(105)			1.8	3.3
233'45-PentaCB-(106)			0.020 U	0.0011 U
233'4'5-PentaCB-(107)			0.21	0.45
PentaCB-(108)+(124)			0.14 J	0.27
PentaCB-(110)+(115)			5.8	10
233'55'-PentaCB-(111)			0.014 U	0.0014 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 20

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	B20-SP1 11/18/2013	B20-SP1 1/7/2014
233'56-PentaCB-(112)			0.015 U	0.0016 U
2344'5-PentaCB-(114)			0.074 J	0.14
23'44'5-PentaCB-(118)			4.0	7.5
23'455'-PentaCB-(120)			0.014 U	0.0096 J
23'45'6-PentaCB-(121)			0.014 U	0.0014 U
233'4'5'-PentaCB-(122)			0.054 J	0.092 J
23'44'5'-PentaCB-(123)			0.071 J	0.090 J
33'44'5-PentaCB-(126)			0.025 J	0.035 J
33'455'-PentaCB-(127)			0.020 U	0.0076 U
HexaCB-(128)+(166)			1.0	1.8
HexaCB-(129)+(138)+(163)			6.6	12
22'33'45'-HexaCB-(130)			0.33	0.63
22'33'46-HexaCB-(131)			0.081 J	0.14
22'33'46'-HexaCB-(132)			1.8	3.4
22'33'55'-HexaCB-(133)			0.054 J	0.10
HexaCB-(134)+(143)			0.26	0.42
HexaCB-(135)+(151)			1.1	2.1
22'33'66'-HexaCB-(136)			0.43	0.82
22'344'5-HexaCB-(137)			0.31	0.54
HexaCB-(139)+(140)			0.083 J	0.14 J
22'3455'-HexaCB-(141)			1.0	1.8
22'3456-HexaCB-(142)			0.021 U	0.010 U
22'345'6-HexaCB-(144)			0.19	0.34
22'3466'-HexaCB-(145)			0.020 U	0.0022 U
22'34'55'-HexaCB-(146)			0.60	1.1
HexaCB-(147)+(149)			3.3	6.0
22'34'56'-HexaCB-(148)			0.025 U	0.0049 J
22'34'66'-HexaCB-(150)			0.018 U	0.0075 J
22'3566'-HexaCB-(152)			0.019 U	0.0052 U
HexaCB-(153)+(168)			3.8	6.7
22'44'56'-HexaCB-(154)			0.029 J	0.049 J
22'44'66'-HexaCB-(155)			0.020 U	0.0012 U
HexaCB-(156)+(157)			0.68	1.3
233'44'6-HexaCB-(158)			0.60	1.1
233'455'-HexaCB-(159)			0.035 J	0.066 J
233'456-HexaCB-(160)			0.015 U	0.0075 U
233'45'6-HexaCB-(161)			0.014 U	0.0065 U
233'4'55'-HexaCB-(162)			0.024 J	0.029 J
233'4'5'6-HexaCB-(164)			0.35	0.67
233'55'6-HexaCB-(165)			0.015 U	0.0071 U
23'44'55'-HexaCB-(167)			0.23	0.41
33'44'55'-HexaCB-(169)			0.023 U	0.0060 U
22'33'44'5-HeptaCB-(170)			1.0	1.7
HeptaCB-(171)+(173)			0.28	0.55
22'33'455'-HeptaCB-(172)			0.18	0.31
22'33'456'-HeptaCB-(174)			0.93	0.0044 U
22'33'45'6-HeptaCB-(175)			0.035 J	0.077 J
22'33'466'-HeptaCB-(176)			0.10	0.20
22'33'45'6'-HeptaCB-(177)			0.52	1.0
22'33'55'6-HeptaCB-(178)			0.18	0.33
22'33'566'-HeptaCB-(179)			0.32	0.66
HeptaCB-(180)+(193)			2.5	4.7
22'344'56-HeptaCB-(181)			0.020 U	0.0045 U
22'344'56'-HeptaCB-(182)			0.019 U	0.0021 U
22'344'5'6-HeptaCB-(183)			0.50	1.1
22'344'66'-HeptaCB-(184)			0.013 U	0.0014 U
22'3455'6-HeptaCB-(185)			0.083 J	2.2

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 20

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	B20-SP1 11/18/2013	B20-SP1 1/7/2014
22'34566'-HeptaCB-(186)			0.014 U	0.0016 U
22'34'55'6-HeptaCB-(187)			1.1	2.3
22'34'566'-HeptaCB-(188)			0.016 U	0.0024 U
233'44'55'-HeptaCB-(189)			0.042 U	0.073 U
233'44'56-HeptaCB-(190)			0.21	0.34
233'44'5'6-HeptaCB-(191)			0.039 J	0.074 J
233'455'6-HeptaCB-(192)			0.017 U	0.0038 U
22'33'44'55'-OctaCB-(194)			0.63	1.2
22'33'44'56-OctaCB-(195)			0.18	0.36
22'33'44'56'-OctaCB-(196)			0.33	0.64
22'33'44'66'OctaCB-(197)			0.018 U	0.028 J
OctaCB-(198)+(199)			0.80	1.7
22'33'4566'-OctaCB-(200)			0.072 J	0.20
22'33'45'66'-OctaCB-(201)			0.074 U	0.19
22'33'55'66'-OctaCB-(202)			0.18	0.35
22'344'55'6-OctaCB-(203)			0.50	1.1
22'344'566'-OctaCB-(204)			0.017 U	0.0040 U
233'44'55'6-OctaCB-(205)			0.026 U	0.049 U
22'33'44'55'6-NonaCB-(206)			0.59	1.3
22'33'44'566'-NonaCB-(207)			0.063 J	0.14
22'33'455'66'-NonaCB-(208)			0.14	0.29
DecaCB-(209)			0.14	0.31
PCB Homologs (ng/l)				
Monochlorobiphenyl			0.024	0.18
Dichlorobiphenyl			2.2	5.2
Trichlorobiphenyl			11	29
Tetrachlorobiphenyl			16	38
Pentachlorobiphenyl			25	48
Hexachlorobiphenyl			23	41
Heptachlorobiphenyl			8.0	16
Octachlorobiphenyl			2.7	5.8
Nonachlorobiphenyl			0.8	1.7
Decachlorobiphenyl			0.14	0.31
Total Detected PCBs (Method 1668	0.064	400	89	184
Phthalates (ug/l)				
Bis(2-ethylhexyl) phthalate	2.2	5	11 U	11 U
Butylbenzyl phthalate	3		14 U	15 U
Dibutyl phthalate	3		14 U	15 U
Diethyl phthalate	3		14 U	15 U
Dimethyl phthalate	3		14 U	15 U
Di-n-octyl phthalate	3		14 U	15 U
Pesticides (ug/l)				
2,4'-DDD	0.00031		0.010 U	0.010 U
2,4'-DDE	0.00022		0.010 U	0.010 U
2,4'-DDT	0.2		0.019 U	0.010 U
4,4'-DDD	0.00031		0.010 U	0.010 U
4,4'-DDE	0.00022		0.010 U	0.010 U
4,4'-DDT	0.00022		0.010 U	0.019 U
Aldrin	0.00005		0.0095 U	0.010 U
alpha-BHC	0.0049		0.0095 U	0.010 U
beta-BHC	0.017		0.0095 U	0.010 U
cis-Chlordane	0.00081		0.0095 U	0.010 U
cis-Nonachlor	0.19		0.010 U	0.010 U
Chlordane Technical			0.36 U	0.36 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 20

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	B20-SP1 11/18/2013	B20-SP1 1/7/2014
delta-BHC	0.052		0.0095 U	0.010 U
Dieldrin	0.000054		0.0095 U	0.010 U
Endosulfan I	0.051		0.029 U	0.048 U
Endosulfan II	0.051		0.0095 U	0.010 U
Endosulfan sulfate	89		0.0095 U	0.010 U
Endrin	0.036		0.0095 U	0.010 U
Endrin aldehyde			0.0095 U	0.010 U
Endrin ketone			0.0095 U	0.010 U
gamma-BHC	0.037		0.0095 U	0.010 U
Heptachlor	0.000079		0.019 U	0.010 U
Heptachlor epoxide	0.000039		0.0095 U	0.010 U
Hexachlorobenzene	0.00029		0.029 U	0.029 U
Hexachlorobutadiene	0.86		0.0095 U	0.010 U
Hexachloroethane	3.3			
Methoxychlor	0.03		0.029 U	0.029 U
Mirex	NC		0.0095 U	0.010 U
Oxychlordane	0.19		0.0095 U	0.010 U
Toxaphene	0.0002		0.36 U	0.36 U
trans-Chlordane	0.00081		0.0095 U	0.010 U
trans-Nonachlor	0.19		0.0095 U	0.010 U
Dioxins (pg/l)				
1,2,3,4,6,7,8-HeptaCDD			137	375
1,2,3,4,6,7,8-HeptaCDF			28 U	64 U
1,2,3,4,7,8,9-HeptaCDF			1.5 U	4.9 U
1,2,3,4,7,8-HexaCDD			2.9 U	4.5 J
1,2,3,4,7,8-HexaCDF			2.6 U	8.2 J
1,2,3,6,7,8-HexaCDD			6.4 J	15 J
1,2,3,6,7,8-HexaCDF			1.6 J	3.7 J
1,2,3,7,8,9-HexaCDD			5.0 J	12 J
1,2,3,7,8,9-HexaCDF			1.1 U	1.2 U
1,2,3,7,8-PentaCDD			1.2 U	2.9 J
1,2,3,7,8-PentaCDF			1.4 U	2.0 J
2,3,4,6,7,8-HexaCDF			1.8 J	3.1 J
2,3,4,7,8-PentaCDF			1.4 U	3.2 J
2,3,7,8-TetraCDD	0.0051		1.2 U	0.9 U
2,3,7,8-TetraCDF			2.0 J	5.2 J
OCDD			1100	3290
OCDF			44	143
HeptaCDD homologs			328	883
HeptaCDF homologs			43	126
HexaCDD homologs			55	118
HexaCDF homologs			42	106
PentaCDD homologs			1.2 U	7.4 J
PentaCDF homologs			12	40 J
TetraCDD homologs			1.2 U	1.0 J
TetraCDF homologs			4.7	31
Total Dioxin TEQ (ND=DL/2)	0.0051		5.3	15
Total Dioxin TEQ (ND=0)	0.0051		3.4	14
Butyltins (ug/l)				
Butyltin ion			0.20 U	0.20 U
Dibutyltin ion			0.29 U	0.29 U
Tributyltin ion	0.072		0.19 U	0.19 U
Total Metals (ug/l)				
Aluminum			1880	6040

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 20

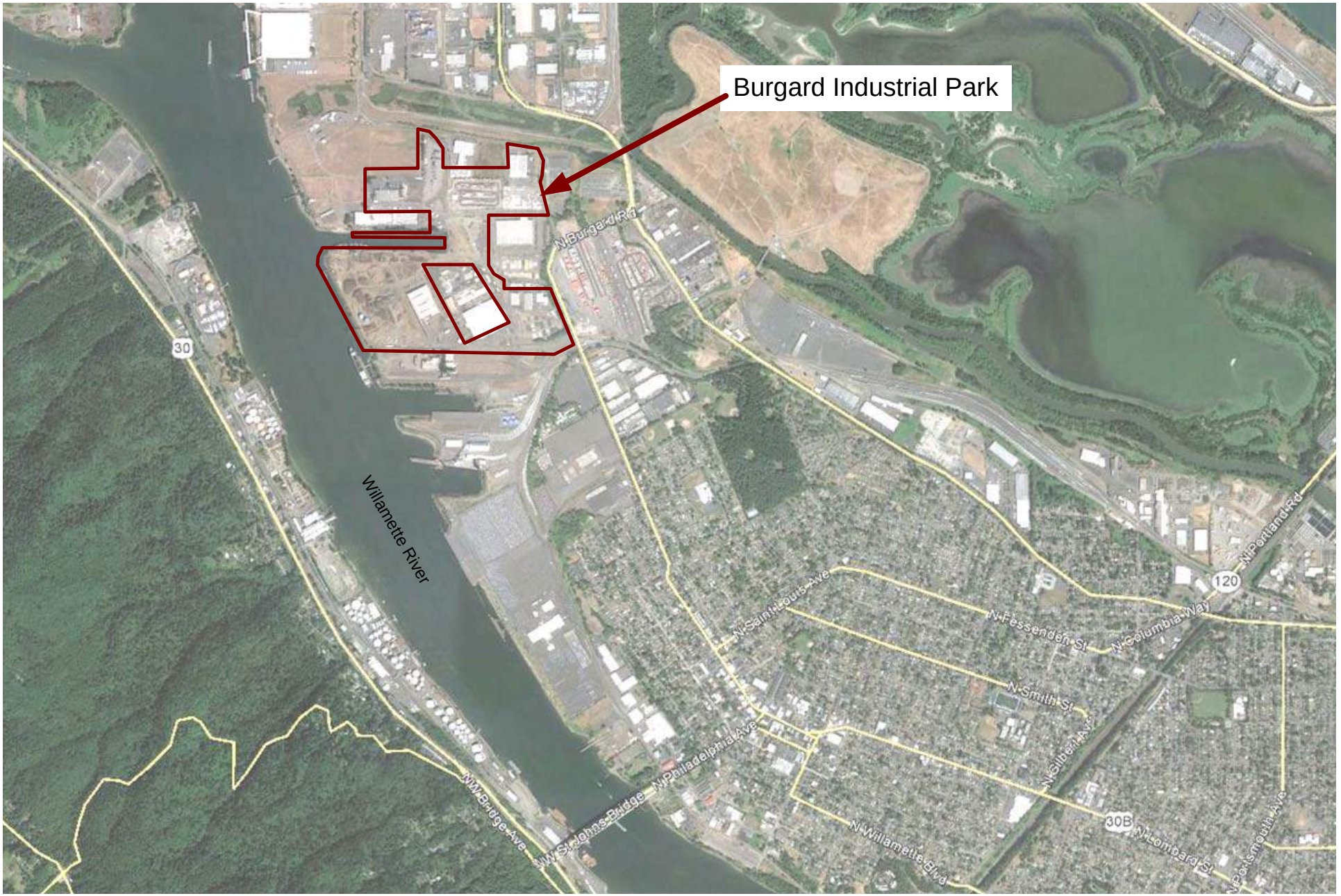
Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	B20-SP1 11/18/2013	B20-SP1 1/7/2014
Antimony	6		1.2	1.8
Arsenic	0.045	2	1.0	1.6
Cadmium	0.094	0.7	0.42	1.0
Chromium	100	7	18	65
Copper	2.7	60	25	59
Lead	0.54	50	24	78
Manganese	50		222	744
Mercury	0.77	0.2	0.040 U	0.079 J
Nickel	16	8	3.7	9.2
Silver	0.12	0.1	0.10 U	0.11 J
Zinc	36	500	159	381
Dissolved Metals (ug/l)				
Aluminum			79	51
Antimony	6		0.72 J	0.51 J
Arsenic	0.045	2	0.50 U	0.50 U
Cadmium	0.094	0.7	0.12 J	0.04 J
Chromium	100	7	1.2	0.72 J
Copper	2.7	60	9.8	5.5
Lead	0.54	50	0.68	0.33
Manganese	50		56	15
Mercury	0.77	0.2	0.040 U	0.040 U
Nickel	16	8	1.6	0.82 J
Silver	0.12	0.1	0.10 U	0.10 U
Zinc	36	500	52	11
Pertroleum Hydrocarbons (mg/l)				
Gasoline			0.050 U	0.050 U
Diesel			0.10 U	0.47 U
Oil			1.5	3.7
TSS (mg/l)		60	49	215
TOC (mg/l)			15	6.4

U - Not detectet at noted detection limit
J- Estimated value

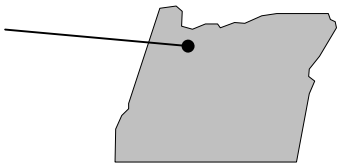
1 - Table 3-1 PH JSCS Guidance, 7/16/2007 revision
2 - October 2010, DEQ Guidance for Evaluating Stormwater Pathway at Upland Sites, Appendix E, Tool For Evaluating Stormwater Data

Detected concentration > 10 x SLV
Detected concentration > 100 x SLV
Detected concentration > 1000 x SLV

Figures



Portland, Oregon



N

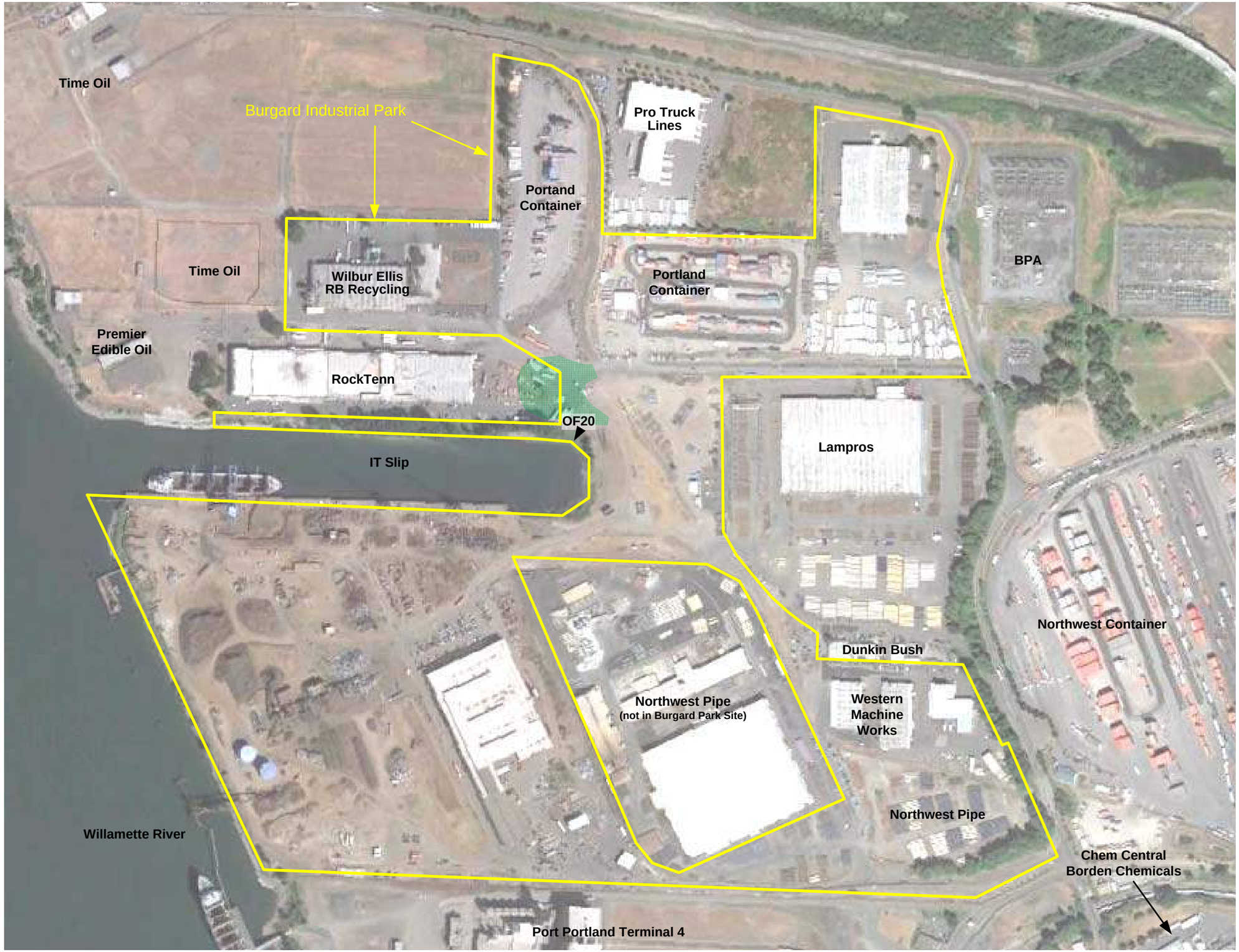
Approximate Scale

2200 feet

Figure 1
Site Location Map
Burgard Industrial Park

BRIDGEWATER GROUP, INC.

Base photograph August 2012



Basin 20

Base Photograph August 2012

Figure 2
Burgard Industrial Park Site Plan
Portland, Oregon

BRIDGEWATER GROUP, INC.

Figure 3
Basin 20 Storm Water Sample Location
Burgard Industrial Park

BRIDGEWATER GROUP, INC.

Appendix A – Analytical Laboratory Reports

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Tuesday, January 28, 2014

Ross Rieke
Bridgewater Group
4500 SW Kruse Way; Suite 110
Lake Oswego, OR 97035

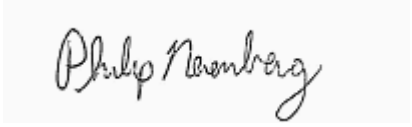
RE: Schnitzer-Burgard / HAI-8001-20

Enclosed are the results of analyses for work order A4A0131, which was received by the laboratory on 1/8/2014 at 2:00:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B22-SP1-20140107	A4A0131-01	Water	01/07/14 13:45	01/08/14 14:00
B20-SP1-20140107	A4A0131-02	Water	01/07/14 14:15	01/08/14 14:00
B18-SP1-20140107	A4A0131-03	Water	01/07/14 15:45	01/08/14 14:00
B19-SP-19-1-20140107	A4A0131-04	Water	01/07/14 15:00	01/08/14 14:00

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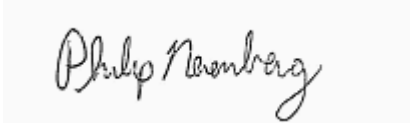

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503-718-0333 Fax

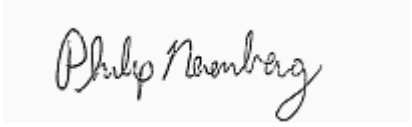
Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Diesel and Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01)			**Matrix: Water**		**Batch: 4010275**			
Diesel	ND	0.476	0.952	mg/L	5	01/14/14 22:49	NWTPH-Dx	
Oil	**2.17**	0.952	1.90	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 91 %*	*Limits: 50-150 %*	"	"	"	*S-05*
B20-SP1-20140107 (A4A0131-02)			**Matrix: Water**		**Batch: 4010275**			
Diesel	ND	0.472	0.943	mg/L	5	01/14/14 23:25	NWTPH-Dx	
Oil	**3.71**	0.943	1.89	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 85 %*	*Limits: 50-150 %*	"	"	"	*S-05*
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**		**Batch: 4010275**			
Diesel	ND	0.485	0.971	mg/L	5	01/15/14 00:01	NWTPH-Dx	
Oil	**2.90**	0.971	1.94	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 85 %*	*Limits: 50-150 %*	"	"	"	*S-05*
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**		**Batch: 4010275**			
Diesel	ND	0.952	1.90	mg/L	5	01/15/14 00:36	NWTPH-Dx	
Oil	**8.88**	1.90	3.81	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 73 %*	*Limits: 50-150 %*	"	"	"	*S-05*

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01)			**Matrix: Water**		**Batch: 4010203**			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	01/10/14 14:39	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 104 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*107 %*	*Limits: 50-150 %*	"	"	"	
B20-SP1-20140107 (A4A0131-02)			**Matrix: Water**		**Batch: 4010203**			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	01/10/14 15:06	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 108 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*109 %*	*Limits: 50-150 %*	"	"	"	
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**		**Batch: 4010203**			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	01/10/14 15:32	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 110 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*109 %*	*Limits: 50-150 %*	"	"	"	
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**		**Batch: 4010203**			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	01/10/14 15:58	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 100 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*106 %*	*Limits: 50-150 %*	"	"	"	

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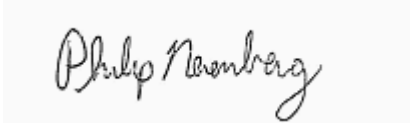

Philip Nerenberg, Lab Director

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Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

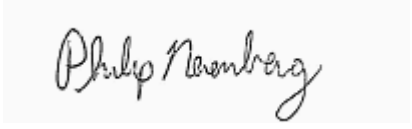
Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01)			**Matrix: Water**		**Batch: 4010401**			**C-07**
Aroclor 1016	ND	0.0208	0.0417	ug/L	1	01/21/14 10:58	EPA 8082A	
Aroclor 1221	ND	0.0208	0.0417	"	"	"	"	
Aroclor 1232	ND	0.0208	0.0417	"	"	"	"	
Aroclor 1242	**0.0332**	0.0208	0.0417	"	"	"	"	J
Aroclor 1248	ND	0.0208	0.0417	"	"	"	"	
Aroclor 1254	ND	0.0208	0.0417	"	"	"	"	
Aroclor 1260	ND	0.0208	0.0417	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 58 %*	*Limits: 40-135 %*	"	"	"	
B20-SP1-20140107 (A4A0131-02)			**Matrix: Water**		**Batch: 4010401**			**C-07**
Aroclor 1016	ND	0.0190	0.0381	ug/L	1	01/21/14 11:16	EPA 8082A	
Aroclor 1221	ND	0.0190	0.0381	"	"	"	"	
Aroclor 1232	ND	0.0190	0.0381	"	"	"	"	
Aroclor 1242	**0.0552**	0.0190	0.0381	"	"	"	"	P-10
Aroclor 1248	ND	0.0190	0.0381	"	"	"	"	
Aroclor 1254	**0.0754**	0.0190	0.0381	"	"	"	"	P-10
Aroclor 1260	**0.0425**	0.0190	0.0381	"	"	"	"	P-10
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 52 %*	*Limits: 40-135 %*	"	"	"	
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**		**Batch: 4010401**			**C-07**
Aroclor 1016	ND	0.0192	0.0385	ug/L	1	01/21/14 11:34	EPA 8082A	
Aroclor 1221	ND	0.0192	0.0385	"	"	"	"	
Aroclor 1232	ND	0.0192	0.0385	"	"	"	"	
Aroclor 1242	**0.243**	0.0192	0.0385	"	"	"	"	P-10
Aroclor 1248	ND	0.0192	0.0385	"	"	"	"	
Aroclor 1254	**0.235**	0.0192	0.0385	"	"	"	"	P-10
Aroclor 1260	**0.109**	0.0192	0.0385	"	"	"	"	P-10
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 61 %*	*Limits: 40-135 %*	"	"	"	
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**		**Batch: 4010401**			**C-07**
Aroclor 1016	ND	0.0204	0.0408	ug/L	1	01/21/14 11:52	EPA 8082A	
Aroclor 1221	ND	0.0204	0.0408	"	"	"	"	
Aroclor 1232	ND	0.0204	0.0408	"	"	"	"	
Aroclor 1242	**0.206**	0.0204	0.0408	"	"	"	"	P-10
Aroclor 1248	ND	0.0204	0.0408	"	"	"	"	
Aroclor 1254	**0.297**	0.0204	0.0408	"	"	"	"	P-10
Aroclor 1260	**0.130**	0.0204	0.0408	"	"	"	"	P-10

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

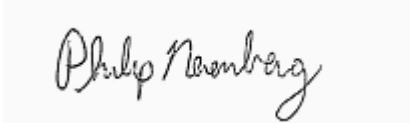
Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**		**Batch: 4010401**			**C-07**
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 52 %*	*Limits: 40-135 %*	1	"	EPA 8082A	

Apex Laboratories



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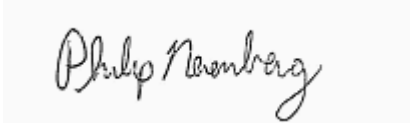
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01RE1)			**Matrix: Water**		**Batch: 4010254**			**C-05**
Aldrin	ND	0.00971	0.0194	ug/L	1	01/14/14 16:32	EPA 8081B	
alpha-BHC	ND	0.00971	0.0194	"	"	"	"	
beta-BHC	ND	0.00971	0.0194	"	"	"	"	
delta-BHC	ND	0.00971	0.0194	"	"	"	"	
gamma-BHC (Lindane)	ND	0.00971	0.0194	"	"	"	"	
cis-Chlordane	ND	0.00971	0.0194	"	"	"	"	
trans-Chlordane	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDD	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDE	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDT	ND	0.00971	0.0194	"	"	"	"	
Dieldrin	ND	0.00971	0.0194	"	"	"	"	
Endosulfan I	ND	0.0485	0.0485	"	"	"	"	R-07
Endosulfan II	ND	0.00971	0.0194	"	"	"	"	
Endosulfan sulfate	ND	0.00971	0.0194	"	"	"	"	
Endrin	ND	0.00971	0.0194	"	"	"	"	
Endrin Aldehyde	ND	0.00971	0.0194	"	"	"	"	
Endrin ketone	ND	0.00971	0.0194	"	"	"	"	
Heptachlor	ND	0.00971	0.0194	"	"	"	"	
Heptachlor epoxide	ND	0.00971	0.0194	"	"	"	"	
Methoxychlor	ND	0.0291	0.0583	"	"	"	"	
Chlordane (Technical)	ND	0.365	0.728	"	"	"	"	
Toxaphene (Total)	ND	0.365	0.728	"	"	"	"	
cis-Nonachlor	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDD	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDE	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDT	ND	0.00971	0.0194	"	"	"	"	
Hexachlorobenzene	ND	0.0291	0.0583	"	"	"	"	
Hexachlorobutadiene	ND	0.00971	0.0194	"	"	"	"	
Mirex	ND	0.00971	0.0194	"	"	"	"	
Oxychlordane	ND	0.00971	0.0194	"	"	"	"	
trans-Nonachlor	ND	0.00971	0.0194	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 89 %*	*Limits: 25-140 %*	"	"	"	
Decachlorobiphenyl (Surr)			*88 %*	*Limits: 30-135 %*	"	"	"	

Apex Laboratories



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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B20-SP1-20140107 (A4A0131-02RE1)			**Matrix: Water**		**Batch: 4010254**			**C-05**
Aldrin	ND	0.00952	0.0190	ug/L	1	01/14/14 16:49	EPA 8081B	
alpha-BHC	ND	0.00952	0.0190	"	"	"	"	
beta-BHC	ND	0.00952	0.0190	"	"	"	"	
delta-BHC	ND	0.00952	0.0190	"	"	"	"	
gamma-BHC (Lindane)	ND	0.00952	0.0190	"	"	"	"	
cis-Chlordane	ND	0.00952	0.0190	"	"	"	"	
trans-Chlordane	ND	0.00952	0.0190	"	"	"	"	
4,4'-DDD	ND	0.00952	0.0190	"	"	"	"	
4,4'-DDE	ND	0.00952	0.0190	"	"	"	"	
4,4'-DDT	ND	0.0190	0.0190	"	"	"	"	
Dieldrin	ND	0.00952	0.0190	"	"	"	"	
Endosulfan I	ND	0.0476	0.0476	"	"	"	"	R-07
Endosulfan II	ND	0.00952	0.0190	"	"	"	"	
Endosulfan sulfate	ND	0.00952	0.0190	"	"	"	"	
Endrin	ND	0.00952	0.0190	"	"	"	"	
Endrin Aldehyde	ND	0.00952	0.0190	"	"	"	"	
Endrin ketone	ND	0.00952	0.0190	"	"	"	"	
Heptachlor	ND	0.00952	0.0190	"	"	"	"	
Heptachlor epoxide	ND	0.00952	0.0190	"	"	"	"	
Methoxychlor	ND	0.0286	0.0571	"	"	"	"	
Chlordane (Technical)	ND	0.358	0.714	"	"	"	"	
Toxaphene (Total)	ND	0.358	0.714	"	"	"	"	
cis-Nonachlor	ND	0.00952	0.0190	"	"	"	"	
2,4'-DDD	ND	0.00952	0.0190	"	"	"	"	
2,4'-DDE	ND	0.00952	0.0190	"	"	"	"	
2,4'-DDT	ND	0.00952	0.0190	"	"	"	"	
Hexachlorobenzene	ND	0.0286	0.0571	"	"	"	"	
Hexachlorobutadiene	ND	0.00952	0.0190	"	"	"	"	
Mirex	ND	0.00952	0.0190	"	"	"	"	
Oxychlordane	ND	0.00952	0.0190	"	"	"	"	
trans-Nonachlor	ND	0.00952	0.0190	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 79 %*	*Limits: 25-140 %*	"	"	"	
Decachlorobiphenyl (Surr)			*72 %*	*Limits: 30-135 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-SP1-20140107 (A4A0131-03RE1)			**Matrix: Water**		**Batch: 4010254**			**C-05**
Aldrin	ND	0.00971	0.0194	ug/L	1	01/14/14 17:07	EPA 8081B	
alpha-BHC	ND	0.00971	0.0194	"	"	"	"	
beta-BHC	ND	0.00971	0.0194	"	"	"	"	
delta-BHC	ND	0.00971	0.0194	"	"	"	"	
gamma-BHC (Lindane)	ND	0.00971	0.0194	"	"	"	"	
cis-Chlordane	ND	0.00971	0.0194	"	"	"	"	
trans-Chlordane	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDD	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDE	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDT	ND	0.0291	0.0291	"	"	"	"	R-07
Dieldrin	ND	0.00971	0.0194	"	"	"	"	
Endosulfan I	ND	0.0485	0.0485	"	"	"	"	R-07
Endosulfan II	ND	0.00971	0.0194	"	"	"	"	
Endosulfan sulfate	ND	0.00971	0.0194	"	"	"	"	
Endrin	ND	0.00971	0.0194	"	"	"	"	
Endrin Aldehyde	ND	0.00971	0.0194	"	"	"	"	
Endrin ketone	ND	0.00971	0.0194	"	"	"	"	
Heptachlor	ND	0.00971	0.0194	"	"	"	"	
Heptachlor epoxide	ND	0.00971	0.0194	"	"	"	"	
Methoxychlor	ND	0.0291	0.0583	"	"	"	"	
Chlordane (Technical)	ND	0.365	0.728	"	"	"	"	
Toxaphene (Total)	ND	0.365	0.728	"	"	"	"	
cis-Nonachlor	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDD	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDE	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDT	ND	0.00971	0.0194	"	"	"	"	
Hexachlorobenzene	ND	0.0291	0.0583	"	"	"	"	
Hexachlorobutadiene	ND	0.00971	0.0194	"	"	"	"	
Mirex	ND	0.00971	0.0194	"	"	"	"	
Oxychlordane	ND	0.00971	0.0194	"	"	"	"	
trans-Nonachlor	ND	0.00971	0.0194	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 85 %*	*Limits: 25-140 %*	"	"	"	
Decachlorobiphenyl (Surr)			*94 %*	*Limits: 30-135 %*	"	"	"	

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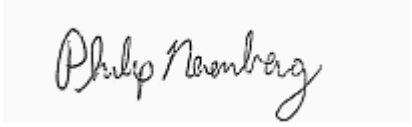

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503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B19-SP-19-1-20140107 (A4A0131-04RE1)			**Matrix: Water**		**Batch: 4010254**			**C-05**
Aldrin	ND	0.00971	0.0194	ug/L	1	01/14/14 17:25	EPA 8081B	
alpha-BHC	ND	0.00971	0.0194	"	"	"	"	
beta-BHC	ND	0.00971	0.0194	"	"	"	"	
delta-BHC	ND	0.00971	0.0194	"	"	"	"	
gamma-BHC (Lindane)	ND	0.00971	0.0194	"	"	"	"	
cis-Chlordane	ND	0.00971	0.0194	"	"	"	"	
trans-Chlordane	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDD	**0.208**	0.00971	0.0194	"	"	"	"	
4,4'-DDE	**0.170**	0.00971	0.0194	"	"	"	"	
4,4'-DDT	**0.220**	0.00971	0.0194	"	"	"	"	
Dieldrin	ND	0.0194	0.0194	"	"	"	"	
Endosulfan I	ND	0.165	0.165	"	"	"	"	R-07
Endosulfan II	ND	0.00971	0.0194	"	"	"	"	
Endosulfan sulfate	ND	0.00971	0.0194	"	"	"	"	
Endrin	ND	0.00971	0.0194	"	"	"	"	
Endrin Aldehyde	ND	0.00971	0.0194	"	"	"	"	
Endrin ketone	ND	0.00971	0.0194	"	"	"	"	
Heptachlor	ND	0.00971	0.0194	"	"	"	"	
Heptachlor epoxide	ND	0.0291	0.0291	"	"	"	"	R-07
Methoxychlor	ND	0.0291	0.0583	"	"	"	"	
Chlordane (Technical)	ND	0.365	0.728	"	"	"	"	
Toxaphene (Total)	ND	0.365	0.728	"	"	"	"	
cis-Nonachlor	ND	0.0291	0.0291	"	"	"	"	R-07
2,4'-DDD	ND	0.0777	0.0777	"	"	"	"	R-07
2,4'-DDE	ND	0.0388	0.0388	"	"	"	"	R-07
2,4'-DDT	ND	0.0485	0.0485	"	"	"	"	R-07
Hexachlorobenzene	ND	0.0291	0.0583	"	"	"	"	
Hexachlorobutadiene	ND	0.00971	0.0194	"	"	"	"	
Mirex	ND	0.00971	0.0194	"	"	"	"	
Oxychlordane	ND	0.00971	0.0194	"	"	"	"	
trans-Nonachlor	ND	0.00971	0.0194	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 73 %*	*Limits: 25-140 %*	"	"	"	
Decachlorobiphenyl (Surr)			*79 %*	*Limits: 30-135 %*	"	"	"	

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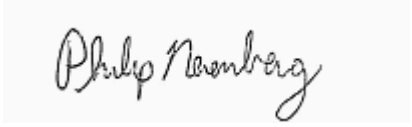

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01RE1)			**Matrix: Water**		**Batch: 4010262**			
Acenaphthene	ND	0.0777	0.155	ug/L	4	01/15/14 11:43	EPA 8270D P/P	
Acenaphthylene	ND	0.0777	0.155	"	"	"	"	
Anthracene	ND	0.0777	0.155	"	"	"	"	
Benz(a)anthracene	ND	0.0777	0.155	"	"	"	"	
Benzo(a)pyrene	ND	0.117	0.233	"	"	"	"	
Benzo(b)fluoranthene	ND	0.117	0.233	"	"	"	"	
Benzo(k)fluoranthene	ND	0.117	0.233	"	"	"	"	
Benzo(g,h,i)perylene	**0.0847**	0.0777	0.155	"	"	"	"	J
Chrysene	**0.105**	0.0777	0.155	"	"	"	"	J
Dibenz(a,h)anthracene	ND	0.0777	0.155	"	"	"	"	
Fluoranthene	**0.121**	0.0777	0.155	"	"	"	"	J
Fluorene	ND	0.0777	0.155	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0777	0.155	"	"	"	"	
1-Methylnaphthalene	ND	0.155	0.311	"	"	"	"	
2-Methylnaphthalene	ND	0.155	0.311	"	"	"	"	
Naphthalene	ND	0.155	0.311	"	"	"	"	
Phenanthrene	**0.122**	0.0777	0.155	"	"	"	"	J
Pyrene	**0.174**	0.0777	0.155	"	"	"	"	
Carbazole	ND	0.117	0.233	"	"	"	"	
Dibenzofuran	ND	0.0777	0.155	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	8.54	17.1	"	"	"	"	
Butyl benzyl phthalate	ND	11.7	23.3	"	"	"	"	
Diethylphthalate	ND	11.7	23.3	"	"	"	"	
Dimethylphthalate	ND	11.7	23.3	"	"	"	"	
Di-n-butylphthalate	ND	11.7	23.3	"	"	"	"	
Di-n-octyl phthalate	ND	11.7	23.3	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 58 %*	*Limits: 35-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*66 %*	*Limits: 30-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*79 %*	*Limits: 50-125 %*	"	"	"	

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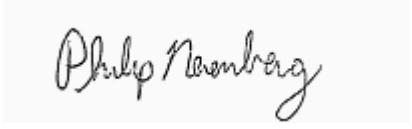

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B20-SP1-20140107 (A4A0131-02RE1)			**Matrix: Water**		**Batch: 4010262**			**R-04**
Acenaphthene	ND	0.101	0.202	ug/L	10	01/15/14 10:31	EPA 8270D P/P	
Acenaphthylene	ND	0.101	0.202	"	"	"	"	
Anthracene	ND	0.101	0.202	"	"	"	"	
Benz(a)anthracene	ND	0.101	0.202	"	"	"	"	
Benzo(a)pyrene	ND	0.152	0.303	"	"	"	"	
Benzo(b)fluoranthene	ND	0.152	0.303	"	"	"	"	
Benzo(k)fluoranthene	ND	0.152	0.303	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.101	0.202	"	"	"	"	
Chrysene	**0.124**	0.101	0.202	"	"	"	"	J
Dibenz(a,h)anthracene	ND	0.101	0.202	"	"	"	"	
Fluoranthene	**0.149**	0.101	0.202	"	"	"	"	J
Fluorene	ND	0.101	0.202	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.101	0.202	"	"	"	"	
1-Methylnaphthalene	ND	0.202	0.404	"	"	"	"	
2-Methylnaphthalene	ND	0.202	0.404	"	"	"	"	
Naphthalene	ND	0.202	0.404	"	"	"	"	
Phenanthrene	**0.115**	0.101	0.202	"	"	"	"	J
Pyrene	**0.192**	0.101	0.202	"	"	"	"	J
Carbazole	ND	0.152	0.303	"	"	"	"	
Dibenzofuran	ND	0.101	0.202	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	11.1	22.2	"	"	"	"	
Butyl benzyl phthalate	ND	15.2	30.3	"	"	"	"	
Diethylphthalate	ND	15.2	30.3	"	"	"	"	
Dimethylphthalate	ND	15.2	30.3	"	"	"	"	
Di-n-butylphthalate	ND	15.2	30.3	"	"	"	"	
Di-n-octyl phthalate	ND	15.2	30.3	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 52 %*	*Limits: 35-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*64 %*	*Limits: 30-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*81 %*	*Limits: 50-125 %*	"	"	"	

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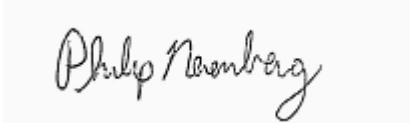

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4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-SP1-20140107 (A4A0131-03RE1)			**Matrix: Water**		**Batch: 4010262**			
Acenaphthene	ND	0.0825	0.165	ug/L	4	01/15/14 11:07	EPA 8270D P/P	
Acenaphthylene	ND	0.0825	0.165	"	"	"	"	
Anthracene	ND	0.0825	0.165	"	"	"	"	
Benz(a)anthracene	**0.138**	0.0825	0.165	"	"	"	"	J
Benzo(a)pyrene	ND	0.124	0.247	"	"	"	"	
Benzo(b)fluoranthene	**0.214**	0.124	0.247	"	"	"	"	J
Benzo(k)fluoranthene	ND	0.124	0.247	"	"	"	"	
Benzo(g,h,i)perylene	**0.151**	0.0825	0.165	"	"	"	"	J
Chrysene	**0.198**	0.0825	0.165	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0825	0.165	"	"	"	"	
Fluoranthene	**0.323**	0.0825	0.165	"	"	"	"	
Fluorene	ND	0.0825	0.165	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**0.117**	0.0825	0.165	"	"	"	"	J
1-Methylnaphthalene	ND	0.165	0.330	"	"	"	"	
2-Methylnaphthalene	ND	0.165	0.330	"	"	"	"	
Naphthalene	ND	0.165	0.330	"	"	"	"	
Phenanthrene	**0.151**	0.0825	0.165	"	"	"	"	J
Pyrene	**0.336**	0.0825	0.165	"	"	"	"	
Carbazole	ND	0.124	0.247	"	"	"	"	
Dibenzofuran	ND	0.0825	0.165	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	9.07	18.1	"	"	"	"	
Butyl benzyl phthalate	ND	12.4	24.7	"	"	"	"	
Diethylphthalate	ND	12.4	24.7	"	"	"	"	
Dimethylphthalate	ND	12.4	24.7	"	"	"	"	
Di-n-butylphthalate	ND	12.4	24.7	"	"	"	"	
Di-n-octyl phthalate	ND	12.4	24.7	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 70 %*	*Limits: 35-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*80 %*	*Limits: 30-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*85 %*	*Limits: 50-125 %*	"	"	"	

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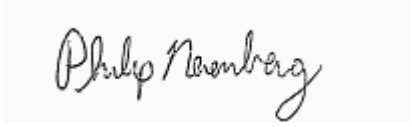

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**		**Batch: 4010262**			
Acenaphthene	ND	0.825	1.65	ug/L	40	01/14/14 18:10	EPA 8270D P/P	
Acenaphthylene	ND	0.825	1.65	"	"	"	"	
Anthracene	ND	0.825	1.65	"	"	"	"	
Benz(a)anthracene	**1.04**	0.825	1.65	"	"	"	"	J
Benzo(a)pyrene	ND	1.24	2.47	"	"	"	"	
Benzo(b)fluoranthene	**2.23**	1.24	2.47	"	"	"	"	J
Benzo(k)fluoranthene	ND	1.24	2.47	"	"	"	"	
Benzo(g,h,i)perylene	**1.17**	0.825	1.65	"	"	"	"	J
Chrysene	**1.66**	0.825	1.65	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.825	1.65	"	"	"	"	
Fluoranthene	**1.65**	0.825	1.65	"	"	"	"	
Fluorene	ND	0.825	1.65	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**1.02**	0.825	1.65	"	"	"	"	J
1-Methylnaphthalene	ND	1.65	3.30	"	"	"	"	
2-Methylnaphthalene	ND	1.65	3.30	"	"	"	"	
Naphthalene	ND	1.65	3.30	"	"	"	"	
Phenanthrene	ND	0.825	1.65	"	"	"	"	
Pyrene	**1.87**	0.825	1.65	"	"	"	"	
Carbazole	ND	1.24	2.47	"	"	"	"	
Dibenzofuran	ND	0.825	1.65	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	90.7	181	"	"	"	"	
Butyl benzyl phthalate	ND	124	247	"	"	"	"	
Diethylphthalate	ND	124	247	"	"	"	"	
Dimethylphthalate	ND	124	247	"	"	"	"	
Di-n-butylphthalate	ND	124	247	"	"	"	"	
Di-n-octyl phthalate	ND	124	247	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 62 %*	*Limits: 35-120 %*	"	"	"	*S-05*
2-Fluorobiphenyl (Surr)			*68 %*	*Limits: 30-120 %*	"	"	"	*S-05*
p-Terphenyl-d14 (Surr)			*74 %*	*Limits: 50-125 %*	"	"	"	*S-05*

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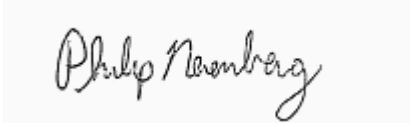

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01)			**Matrix: Water**					
Batch: 4010501								
Aluminum	**1880**	25.0	50.0	ug/L	1	01/24/14 13:57	EPA 6020A	
Antimony	**0.667**	0.500	1.00	"	"	"	"	J
Arsenic	**0.711**	0.500	1.00	"	"	"	"	J
Cadmium	**0.389**	0.0400	0.200	"	"	"	"	
Chromium	**19.6**	0.500	1.00	"	"	"	"	
Copper	**22.5**	0.500	1.00	"	"	"	"	
Lead	**18.2**	0.100	0.200	"	"	"	"	
Manganese	**203**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**3.66**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**210**	2.00	4.00	"	"	"	"	
B20-SP1-20140107 (A4A0131-02)			**Matrix: Water**					
Batch: 4010501								
Aluminum	**6040**	25.0	50.0	ug/L	1	01/24/14 14:00	EPA 6020A	
Antimony	**1.77**	0.500	1.00	"	"	"	"	
Arsenic	**1.61**	0.500	1.00	"	"	"	"	
Cadmium	**1.03**	0.0400	0.200	"	"	"	"	
Chromium	**65.4**	0.500	1.00	"	"	"	"	
Copper	**58.8**	0.500	1.00	"	"	"	"	
Lead	**77.9**	0.100	0.200	"	"	"	"	
Manganese	**744**	0.500	1.00	"	"	"	"	
Mercury	**0.0785**	0.0400	0.0800	"	"	"	"	J
Nickel	**9.19**	0.500	1.00	"	"	"	"	
Silver	**0.111**	0.100	0.200	"	"	"	"	J
Zinc	**381**	2.00	4.00	"	"	"	"	
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**					
Batch: 4010501								
Aluminum	**5140**	25.0	50.0	ug/L	1	01/24/14 14:08	EPA 6020A	
Antimony	**2.28**	0.500	1.00	"	"	"	"	
Arsenic	**5.13**	0.500	1.00	"	"	"	"	
Cadmium	**1.48**	0.0400	0.200	"	"	"	"	
Chromium	**50.1**	0.500	1.00	"	"	"	"	
Copper	**86.3**	0.500	1.00	"	"	"	"	
Lead	**122**	0.100	0.200	"	"	"	"	

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4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**					
Manganese	**2230**	0.500	1.00	ug/L	1	"	EPA 6020A	
Mercury	**0.146**	0.0400	0.0800	"	"	"	"	
Nickel	**14.9**	0.500	1.00	"	"	"	"	
Silver	**0.222**	0.100	0.200	"	"	"	"	
Zinc	**609**	2.00	4.00	"	"	"	"	
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**					
Batch: 4010501								
Aluminum	**23100**	25.0	50.0	ug/L	1	01/24/14 14:17	EPA 6020A	
Antimony	**17.9**	0.500	1.00	"	"	"	"	
Arsenic	**15.1**	0.500	1.00	"	"	"	"	
Cadmium	**18.0**	0.0400	0.200	"	"	"	"	
Chromium	**233**	0.500	1.00	"	"	"	"	
Copper	**938**	0.500	1.00	"	"	"	"	
Lead	**1680**	0.100	0.200	"	"	"	"	
Manganese	**3440**	2.50	5.00	"	5	01/24/14 15:40	"	
Mercury	**2.86**	0.200	0.400	"	"	"	"	
Nickel	**120**	0.500	1.00	"	1	01/24/14 14:17	"	
Silver	**1.93**	0.100	0.200	"	"	"	"	
Zinc	**6040**	10.0	20.0	"	5	01/24/14 15:40	"	

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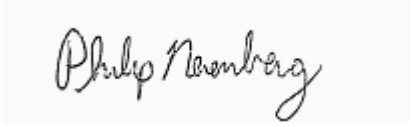

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01)			**Matrix: Water**					
Batch: 4010510								
Aluminum	**41.4**	25.0	50.0	ug/L	1	01/24/14 15:22	EPA 6020A (Diss)	J
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.0778**	0.0400	0.200	"	"	"	"	J
Chromium	**0.500**	0.500	1.00	"	"	"	"	J
Copper	**4.34**	0.500	1.00	"	"	"	"	
Lead	**0.356**	0.100	0.200	"	"	"	"	
Manganese	**18.5**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**1.09**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**45.2**	2.00	4.00	"	"	"	"	
B20-SP1-20140107 (A4A0131-02)			**Matrix: Water**					
Batch: 4010510								
Aluminum	**51.2**	25.0	50.0	ug/L	1	01/24/14 15:25	EPA 6020A (Diss)	
Antimony	**0.511**	0.500	1.00	"	"	"	"	J
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.0444**	0.0400	0.200	"	"	"	"	J
Chromium	**0.722**	0.500	1.00	"	"	"	"	J
Copper	**5.53**	0.500	1.00	"	"	"	"	
Lead	**0.333**	0.100	0.200	"	"	"	"	
Manganese	**14.8**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**0.822**	0.500	1.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**11.4**	2.00	4.00	"	"	"	"	
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**					
Batch: 4010510								
Aluminum	ND	25.0	50.0	ug/L	1	01/24/14 15:28	EPA 6020A (Diss)	
Antimony	**0.578**	0.500	1.00	"	"	"	"	J
Arsenic	**2.27**	0.500	1.00	"	"	"	"	
Cadmium	**0.244**	0.0400	0.200	"	"	"	"	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**6.38**	0.500	1.00	"	"	"	"	
Lead	**0.256**	0.100	0.200	"	"	"	"	

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4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**					
Manganese	**1120**	0.500	1.00	ug/L	1	"	EPA 6020A (Diss)	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**2.63**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**148**	2.00	4.00	"	"	"	"	
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**					
Batch: 4010510								
Aluminum	**56.4**	25.0	50.0	ug/L	1	01/24/14 15:31	EPA 6020A (Diss)	
Antimony	**3.68**	0.500	1.00	"	"	"	"	
Arsenic	**0.911**	0.500	1.00	"	"	"	"	J
Cadmium	**0.0444**	0.0400	0.200	"	"	"	"	J
Chromium	**3.44**	0.500	1.00	"	"	"	"	
Copper	**13.6**	0.500	1.00	"	"	"	"	
Lead	**1.36**	0.100	0.200	"	"	"	"	
Manganese	**26.4**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**1.63**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**9.56**	2.00	4.00	"	"	"	"	

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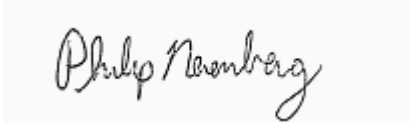

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4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01)			**Matrix: Water**					
Batch: 4010186								
Total Suspended Solids	**85.0**	5.00	5.00	mg/L	1	01/13/14 11:10	SM 2540 D	
Batch: 4010267								
Total Organic Carbon	**6.70**	1.00	1.00	"	"	01/14/14 15:08	SM 5310 B	
B20-SP1-20140107 (A4A0131-02)			**Matrix: Water**					
Batch: 4010186								
Total Suspended Solids	**215**	5.00	5.00	mg/L	1	01/13/14 11:10	SM 2540 D	
Batch: 4010267								
Total Organic Carbon	**6.42**	1.00	1.00	"	"	01/14/14 15:33	SM 5310 B	
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**					
Batch: 4010186								
Total Suspended Solids	**200**	10.0	10.0	mg/L	1	01/13/14 11:10	SM 2540 D	
Batch: 4010267								
Total Organic Carbon	**6.11**	1.00	1.00	"	"	01/14/14 15:58	SM 5310 B	
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**					
Batch: 4010186								
Total Suspended Solids	**1020**	20.0	20.0	mg/L	1	01/13/14 11:10	SM 2540 D	
Batch: 4010267								
Total Organic Carbon	**9.73**	1.00	1.00	"	"	01/14/14 16:23	SM 5310 B	

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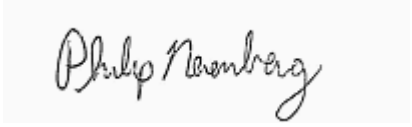

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Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010275 - EPA 3510C (Fuels/Acid Ext.)									**Water**			
Blank (4010275-BLK1)					Prepared: 01/14/14 11:14 Analyzed: 01/14/14 21:55							
NWTPH-Dx												
Diesel	ND	0.0909	0.182	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 86 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS (4010275-BS1)					Prepared: 01/14/14 11:14 Analyzed: 01/14/14 22:13							
NWTPH-Dx												
Diesel	1.04	0.100	0.200	mg/L	1	1.25	---	83	58-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 87 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS Dup (4010275-BSD1)					Prepared: 01/14/14 11:14 Analyzed: 01/14/14 22:31							**Q-19**
NWTPH-Dx												
Diesel	1.08	0.100	0.200	mg/L	1	1.25	---	86	58-115%	4	20%	
Surr: o-Terphenyl (Surr)			*Recovery: 88 %*	*Limits: 50-150 %*		*Dilution: 1x*						

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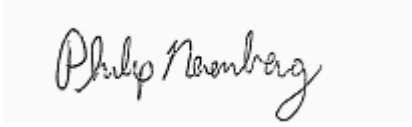

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QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010203 - EPA 5030B								**Water**				
Blank (4010203-BLK1)					Prepared: 01/10/14 10:00 Analyzed: 01/10/14 12:01							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 84 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*102 %*	*50-150 %*			*"*					
LCS (4010203-BS2)					Prepared: 01/10/14 10:00 Analyzed: 01/10/14 11:35							
NWTPH-Gx (MS)												
Gasoline Range Organics	0.415	0.0500	0.100	mg/L	1	0.500	---	83	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 89 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*100 %*	*50-150 %*			*"*					

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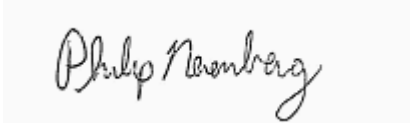

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4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010401 - EPA 3510C (Neutral pH)								**Water**				
Blank (4010401-BLK1)					Prepared: 01/20/14 10:39 Analyzed: 01/21/14 10:04							**C-07**
EPA 8082A												
Aroclor 1016	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1221	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 74 %*	*Limits: 40-135 %*		*Dilution: 1x*						
LCS (4010401-BS1)					Prepared: 01/20/14 10:39 Analyzed: 01/21/14 10:22							**C-07**
EPA 8082A												
Aroclor 1016	0.729	0.0100	0.0200	ug/L	1	1.25	---	58	40-140%	---	---	
Aroclor 1260	0.930	0.0100	0.0200	"	"	"	---	74	"	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 70 %*	*Limits: 40-135 %*		*Dilution: 1x*						
LCS Dup (4010401-BSD1)					Prepared: 01/20/14 10:39 Analyzed: 01/21/14 10:40							**C-07, Q-19**
EPA 8082A												
Aroclor 1016	0.737	0.0100	0.0200	ug/L	1	1.25	---	59	40-140%	1	30%	
Aroclor 1260	0.866	0.0100	0.0200	"	"	"	---	69	"	7	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 61 %*	*Limits: 40-135 %*		*Dilution: 1x*						

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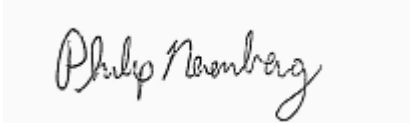

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010254 - EPA 3510C (Neutral pH)/3640A (GPC)							**Water**					
Blank (4010254-BLK1)					Prepared: 01/13/14 07:05 Analyzed: 01/14/14 10:12							**C-05**
EPA 8081B												
Aldrin	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
alpha-BHC	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
beta-BHC	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
delta-BHC	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
4,4'-DDT	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Dieldrin	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endosulfan I	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endosulfan II	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endrin	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endrin ketone	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Heptachlor	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Methoxychlor	ND	0.0273	0.0545	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	0.342	0.682	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	0.342	0.682	"	"	---	---	---	---	---	---	
cis-Nonachlor	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
2,4'-DDD	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
2,4'-DDE	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
2,4'-DDT	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	0.0273	0.0545	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Mirex	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Oxychlordane	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	

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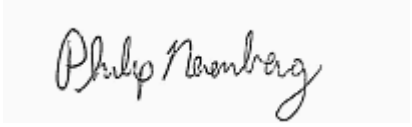

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010254 - EPA 3510C (Neutral pH)/3640A (GPC)							**Water**					
Blank (4010254-BLK1)					Prepared: 01/13/14 07:05 Analyzed: 01/14/14 10:12							**C-05**
trans-Nonachlor	ND	0.00909	0.0182	ug/L	"	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 58 %*		*Limits: 25-140 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*73 %*		*30-135 %*				*"*			
LCS (4010254-BS1)					Prepared: 01/13/14 07:05 Analyzed: 01/14/14 10:30							**C-05**
EPA 8081B												
Aldrin	0.360	0.0100	0.0200	ug/L	1	0.500	---	72	25-140%	---	---	
alpha-BHC	0.372	0.0100	0.0200	"	"	"	---	74	60-130%	---	---	
beta-BHC	0.368	0.0100	0.0200	"	"	"	---	74	65-125%	---	---	
delta-BHC	0.417	0.0100	0.0200	"	"	"	---	83	45-135%	---	---	
gamma-BHC (Lindane)	0.390	0.0100	0.0200	"	"	"	---	78	25-135%	---	---	
cis-Chlordane	0.388	0.0100	0.0200	"	"	"	---	78	65-125%	---	---	
trans-Chlordane	0.400	0.0100	0.0200	"	"	"	---	80	60-125%	---	---	
4,4'-DDD	0.404	0.0100	0.0200	"	"	"	---	81	25-150%	---	---	
4,4'-DDE	0.394	0.0100	0.0200	"	"	"	---	79	35-140%	---	---	
4,4'-DDT	0.425	0.0100	0.0200	"	"	"	---	85	45-140%	---	---	
Dieldrin	0.410	0.0100	0.0200	"	"	"	---	82	60-130%	---	---	
Endosulfan I	0.401	0.0100	0.0200	"	"	"	---	80	50-110%	---	---	
Endosulfan II	0.416	0.0100	0.0200	"	"	"	---	83	30-130%	---	---	
Endosulfan sulfate	0.403	0.0100	0.0200	"	"	"	---	81	55-135%	---	---	
Endrin	0.428	0.0100	0.0200	"	"	"	---	86	"	---	---	
Endrin Aldehyde	0.416	0.0100	0.0200	"	"	"	---	83	"	---	---	
Endrin ketone	0.402	0.0100	0.0200	"	"	"	---	80	75-125%	---	---	
Heptachlor	0.370	0.0100	0.0200	"	"	"	---	74	40-130%	---	---	
Heptachlor epoxide	0.405	0.0100	0.0200	"	"	"	---	81	60-130%	---	---	
Methoxychlor	0.404	0.0300	0.0600	"	"	"	---	81	55-150%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 66 %*		*Limits: 25-140 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*75 %*		*30-135 %*				*"*			
LCS (4010254-BS2)					Prepared: 01/13/14 07:08 Analyzed: 01/14/14 10:47							**C-05**
EPA 8081B												
cis-Nonachlor	0.468	0.0100	0.0200	ug/L	1	0.500	---	94	25-120%	---	---	

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Philip Nerenberg, Lab Director

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503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010254 - EPA 3510C (Neutral pH)/3640A (GPC)							**Water**					
LCS (4010254-BS2)					Prepared: 01/13/14 07:08		Analyzed: 01/14/14 10:47					**C-05**
2,4'-DDD	0.448	0.0100	0.0200	ug/L	"	"	---	90	30-135%	---	---	
2,4'-DDE	0.433	0.0100	0.0200	"	"	"	---	87	50-140%	---	---	
2,4'-DDT	0.441	0.0100	0.0200	"	"	"	---	88	45-140%	---	---	
Hexachlorobenzene	0.361	0.0300	0.0600	"	"	"	---	72	25-120%	---	---	
Hexachlorobutadiene	0.139	0.0100	0.0200	"	"	"	---	28	"	---	---	Q-41
Mirex	0.408	0.0100	0.0200	"	"	"	---	82	"	---	---	
Oxychlordane	0.414	0.0100	0.0200	"	"	"	---	83	"	---	---	
trans-Nonachlor	0.428	0.0100	0.0200	"	"	"	---	86	"	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 58 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*77 %*	*30-135 %*			*"*					
LCS Dup (4010254-BSD1)					Prepared: 01/13/14 07:05		Analyzed: 01/14/14 11:05					**C-05, Q-19**
EPA 8081B												
Aldrin	0.344	0.0100	0.0200	ug/L	1	0.500	---	69	25-140%	4	30%	
alpha-BHC	0.402	0.0100	0.0200	"	"	"	---	80	60-130%	8	30%	
beta-BHC	0.379	0.0100	0.0200	"	"	"	---	76	65-125%	3	30%	
delta-BHC	0.422	0.0100	0.0200	"	"	"	---	84	45-135%	1	30%	
gamma-BHC (Lindane)	0.411	0.0100	0.0200	"	"	"	---	82	25-135%	5	30%	
cis-Chlordane	0.392	0.0100	0.0200	"	"	"	---	78	65-125%	1	30%	
trans-Chlordane	0.401	0.0100	0.0200	"	"	"	---	80	60-125%	0.2	30%	
4,4'-DDD	0.395	0.0100	0.0200	"	"	"	---	79	25-150%	2	30%	
4,4'-DDE	0.406	0.0100	0.0200	"	"	"	---	81	35-140%	3	30%	
4,4'-DDT	0.423	0.0100	0.0200	"	"	"	---	85	45-140%	0.5	30%	
Dieldrin	0.405	0.0100	0.0200	"	"	"	---	81	60-130%	1	30%	
Endosulfan I	0.400	0.0100	0.0200	"	"	"	---	80	50-110%	0.3	30%	
Endosulfan II	0.406	0.0100	0.0200	"	"	"	---	81	30-130%	2	30%	
Endosulfan sulfate	0.385	0.0100	0.0200	"	"	"	---	77	55-135%	5	30%	
Endrin	0.416	0.0100	0.0200	"	"	"	---	83	"	3	30%	
Endrin Aldehyde	0.393	0.0100	0.0200	"	"	"	---	79	"	6	30%	
Endrin ketone	0.377	0.0100	0.0200	"	"	"	---	75	75-125%	6	30%	
Heptachlor	0.355	0.0100	0.0200	"	"	"	---	71	40-130%	4	30%	
Heptachlor epoxide	0.397	0.0100	0.0200	"	"	"	---	79	60-130%	2	30%	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010254 - EPA 3510C (Neutral pH)/3640A (GPC)								**Water**				
LCS Dup (4010254-BSD1)					Prepared: 01/13/14 07:05		Analyzed: 01/14/14 11:05					**C-05, Q-19**
Methoxychlor	0.382	0.0300	0.0600	"	"	"	---	76	55-150%	6	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 55 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*65 %*	*30-135 %*			*"*					
LCS Dup (4010254-BSD2)					Prepared: 01/13/14 07:08		Analyzed: 01/14/14 11:23					**Q-19, C-05**
EPA 8081B												
cis-Nonachlor	0.449	0.0100	0.0200	ug/L	1	0.500	---	90	25-120%	4	30%	
2,4'-DDD	0.429	0.0100	0.0200	"	"	"	---	86	30-135%	4	30%	
2,4'-DDE	0.416	0.0100	0.0200	"	"	"	---	83	50-140%	4	30%	
2,4'-DDT	0.430	0.0100	0.0200	"	"	"	---	86	45-140%	2	30%	
Hexachlorobenzene	0.318	0.0300	0.0600	"	"	"	---	64	25-120%	13	30%	
Mirex	0.403	0.0100	0.0200	"	"	"	---	81	"	1	30%	
Oxychlordane	0.382	0.0100	0.0200	"	"	"	---	76	"	8	30%	
trans-Nonachlor	0.411	0.0100	0.0200	"	"	"	---	82	"	4	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 45 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*73 %*	*30-135 %*			*"*					

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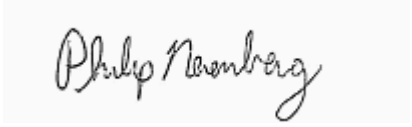

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010262 - EPA 3510C (Acid Extraction)							**Water**					
Blank (4010262-BLK1)					Prepared: 01/14/14 07:12 Analyzed: 01/14/14 15:45							
EPA 8270D P/P												
Acenaphthene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(b+k)fluoranthene(s)	ND	0.0273	0.0545	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Chrysene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluoranthene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluorene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Naphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Phenanthrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Carbazole	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	1.00	2.00	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	1.36	2.73	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	1.36	2.73	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	1.36	2.73	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	1.36	2.73	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	1.36	2.73	"	"	---	---	---	---	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 60 %*	*Limits: 35-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*58 %*	*30-120 %*	*"*
p-Terphenyl-d14 (Surr)	*69 %*	*50-125 %*	*"*

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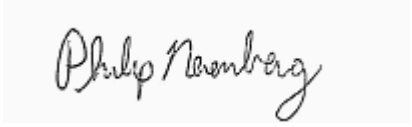

Philip Nerenberg, Lab Director

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010262 - EPA 3510C (Acid Extraction)							**Water**					
LCS (4010262-BS1)					Prepared: 01/14/14 07:12 Analyzed: 01/14/14 16:21							
EPA 8270D P/P												
Acenaphthene	2.73	0.0100	0.0200	ug/L	1	4.00	---	68	45-125%	---	---	
Acenaphthylene	2.68	0.0100	0.0200	"	"	"	---	67	50-125%	---	---	
Anthracene	2.93	0.0100	0.0200	"	"	"	---	73	55-125%	---	---	
Benz(a)anthracene	3.18	0.0100	0.0200	"	"	"	---	80	"	---	---	
Benzo(a)pyrene	3.60	0.0150	0.0300	"	"	"	---	90	"	---	---	
Benzo(b)fluoranthene	3.47	0.0150	0.0300	"	"	"	---	87	45-125%	---	---	
Benzo(k)fluoranthene	3.29	0.0150	0.0300	"	"	"	---	82	"	---	---	
Benzo(b+k)fluoranthene(s)	6.82	0.0300	0.0600	"	"	8.00	---	85	"	---	---	
Benzo(g,h,i)perylene	3.46	0.0100	0.0200	"	"	4.00	---	86	40-125%	---	---	
Chrysene	3.25	0.0100	0.0200	"	"	"	---	81	55-125%	---	---	
Dibenz(a,h)anthracene	3.35	0.0100	0.0200	"	"	"	---	84	40-125%	---	---	
Fluoranthene	3.15	0.0100	0.0200	"	"	"	---	79	55-125%	---	---	
Fluorene	2.68	0.0100	0.0200	"	"	"	---	67	50-125%	---	---	
Indeno(1,2,3-cd)pyrene	3.38	0.0100	0.0200	"	"	"	---	84	45-125%	---	---	
1-Methylnaphthalene	2.57	0.0200	0.0400	"	"	"	---	64	45-120%	---	---	
2-Methylnaphthalene	2.60	0.0200	0.0400	"	"	"	---	65	"	---	---	
Naphthalene	2.28	0.0200	0.0400	"	"	"	---	57	40-125%	---	---	
Phenanthrene	2.83	0.0100	0.0200	"	"	"	---	71	50-125%	---	---	
Pyrene	3.12	0.0100	0.0200	"	"	"	---	78	"	---	---	
Carbazole	3.19	0.0150	0.0300	"	"	"	---	80	"	---	---	
Dibenzofuran	2.71	0.0100	0.0200	"	"	"	---	68	55-125%	---	---	
Bis(2-ethylhexyl)phthalate	3.63	1.10	2.20	"	"	"	---	91	40-125%	---	---	
Butyl benzyl phthalate	3.53	1.50	3.00	"	"	"	---	88	45-125%	---	---	
Diethylphthalate	3.16	1.50	3.00	"	"	"	---	79	40-125%	---	---	
Dimethylphthalate	3.19	1.50	3.00	"	"	"	---	80	25-125%	---	---	
Di-n-butylphthalate	3.20	1.50	3.00	"	"	"	---	80	55-125%	---	---	
Di-n-octyl phthalate	3.40	1.50	3.00	"	"	"	---	85	35-125%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 55 %*	*Limits: 35-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*56 %*	*30-120 %*	*"*
p-Terphenyl-d14 (Surr)	*73 %*	*50-125 %*	*"*

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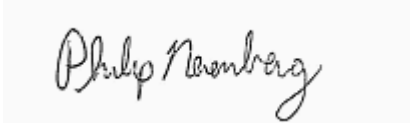

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010262 - EPA 3510C (Acid Extraction)							**Water**					
LCS Dup (4010262-BSD1)					Prepared: 01/14/14 07:12		Analyzed: 01/14/14 16:58					**Q-19**
EPA 8270D P/P												
Acenaphthene	2.73	0.0100	0.0200	ug/L	1	4.00	---	68	45-125%	0.2	30%	
Acenaphthylene	2.70	0.0100	0.0200	"	"	"	---	67	50-125%	0.6	30%	
Anthracene	3.07	0.0100	0.0200	"	"	"	---	77	55-125%	5	30%	
Benz(a)anthracene	3.34	0.0100	0.0200	"	"	"	---	83	"	5	30%	
Benzo(a)pyrene	3.74	0.0150	0.0300	"	"	"	---	94	"	4	30%	
Benzo(b)fluoranthene	3.61	0.0150	0.0300	"	"	"	---	90	45-125%	4	30%	
Benzo(k)fluoranthene	3.46	0.0150	0.0300	"	"	"	---	86	"	5	30%	
Benzo(b+k)fluoranthene(s)	7.12	0.0300	0.0600	"	"	8.00	---	89	"	4	30%	
Benzo(g,h,i)perylene	3.64	0.0100	0.0200	"	"	4.00	---	91	40-125%	5	30%	
Chrysene	3.40	0.0100	0.0200	"	"	"	---	85	55-125%	4	30%	
Dibenz(a,h)anthracene	3.50	0.0100	0.0200	"	"	"	---	87	40-125%	4	30%	
Fluoranthene	3.31	0.0100	0.0200	"	"	"	---	83	55-125%	5	30%	
Fluorene	2.73	0.0100	0.0200	"	"	"	---	68	50-125%	2	30%	
Indeno(1,2,3-cd)pyrene	3.48	0.0100	0.0200	"	"	"	---	87	45-125%	3	30%	
1-Methylnaphthalene	2.52	0.0200	0.0400	"	"	"	---	63	45-120%	2	30%	
2-Methylnaphthalene	2.52	0.0200	0.0400	"	"	"	---	63	"	3	30%	
Naphthalene	2.22	0.0200	0.0400	"	"	"	---	55	40-125%	3	30%	
Phenanthrene	2.97	0.0100	0.0200	"	"	"	---	74	50-125%	5	30%	
Pyrene	3.29	0.0100	0.0200	"	"	"	---	82	"	5	30%	
Carbazole	3.36	0.0150	0.0300	"	"	"	---	84	"	5	30%	
Dibenzofuran	2.74	0.0100	0.0200	"	"	"	---	68	55-125%	0.9	30%	
Bis(2-ethylhexyl)phthalate	3.84	1.10	2.20	"	"	"	---	96	40-125%	6	30%	
Butyl benzyl phthalate	3.78	1.50	3.00	"	"	"	---	95	45-125%	7	30%	
Diethylphthalate	3.28	1.50	3.00	"	"	"	---	82	40-125%	4	30%	
Dimethylphthalate	3.28	1.50	3.00	"	"	"	---	82	25-125%	3	30%	
Di-n-butylphthalate	3.36	1.50	3.00	"	"	"	---	84	55-125%	5	30%	
Di-n-octyl phthalate	3.54	1.50	3.00	"	"	"	---	88	35-125%	4	30%	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 60 %*	*Limits: 35-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*56 %*	*30-120 %*	*"*
p-Terphenyl-d14 (Surr)	*76 %*	*50-125 %*	*"*

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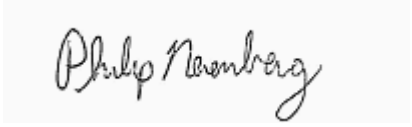

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503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010501 - EPA 3015A									**Water**			
Blank (4010501-BLK1)					Prepared: 01/24/14 09:12 Analyzed: 01/24/14 13:48							
EPA 6020A												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Antimony	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	0.0400	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (4010501-BS1)					Prepared: 01/24/14 09:12 Analyzed: 01/24/14 13:51							
EPA 6020A												
Aluminum	5370	25.0	50.0	ug/L	1	5560	---	97	80-120%	---	---	
Antimony	25.7	0.500	1.00	"	"	27.8	---	93	"	---	---	
Arsenic	52.0	0.500	1.00	"	"	55.6	---	94	"	---	---	
Cadmium	50.9	0.0400	0.200	"	"	"	---	92	"	---	---	
Chromium	54.6	0.500	1.00	"	"	"	---	98	"	---	---	
Copper	54.6	0.500	1.00	"	"	"	---	98	"	---	---	
Lead	54.9	0.100	0.200	"	"	"	---	99	"	---	---	
Manganese	56.4	0.500	1.00	"	"	"	---	101	"	---	---	
Mercury	0.982	0.0400	0.0800	"	"	1.11	---	88	"	---	---	
Nickel	53.6	0.500	1.00	"	"	55.6	---	97	"	---	---	
Silver	25.5	0.100	0.200	"	"	27.8	---	92	"	---	---	
Zinc	52.1	2.00	4.00	"	"	55.6	---	94	"	---	---	
Duplicate (4010501-DUP1)					Prepared: 01/24/14 09:12 Analyzed: 01/24/14 14:11							
QC Source Sample: B18-SP1-20140107 (A4A0131-03)												
EPA 6020A												

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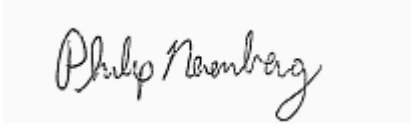

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010501 - EPA 3015A								**Water**				
Duplicate (4010501-DUP1)						Prepared: 01/24/14 09:12	Analyzed: 01/24/14 14:11					
QC Source Sample: B18-SP1-20140107 (A4A0131-03)												
Aluminum	**4800**	25.0	50.0	ug/L	1	---	5140	---	---	7	20%	
Antimony	**1.94**	0.500	1.00	"	"	---	2.28	---	---	16	20%	
Arsenic	**4.69**	0.500	1.00	"	"	---	5.13	---	---	9	20%	
Cadmium	**1.49**	0.0400	0.200	"	"	---	1.48	---	---	0.7	20%	
Chromium	**47.4**	0.500	1.00	"	"	---	50.1	---	---	6	20%	
Copper	**83.9**	0.500	1.00	"	"	---	86.3	---	---	3	20%	
Lead	**118**	0.100	0.200	"	"	---	122	---	---	3	20%	
Manganese	**2210**	0.500	1.00	"	"	---	2230	---	---	1	20%	
Mercury	**0.127**	0.0400	0.0800	"	"	---	0.146	---	---	14	20%	
Nickel	**14.2**	0.500	1.00	"	"	---	14.9	---	---	5	20%	
Silver	**0.200**	0.100	0.200	"	"	---	0.222	---	---	11	20%	
Zinc	**594**	2.00	4.00	"	"	---	609	---	---	3	20%	
Matrix Spike (4010501-MS1)						Prepared: 01/24/14 09:12	Analyzed: 01/24/14 14:14					
QC Source Sample: B18-SP1-20140107 (A4A0131-03)												
EPA 6020A												
Aluminum	10500	25.0	50.0	ug/L	1	5560	5140	97	75-125%	---	---	
Antimony	23.5	0.500	1.00	"	"	27.8	2.28	77	"	---	---	
Arsenic	58.5	0.500	1.00	"	"	55.6	5.13	96	"	---	---	
Cadmium	55.2	0.0400	0.200	"	"	"	1.48	97	"	---	---	
Chromium	107	0.500	1.00	"	"	"	50.1	102	"	---	---	
Copper	138	0.500	1.00	"	"	"	86.3	93	"	---	---	
Lead	175	0.100	0.200	"	"	"	122	97	"	---	---	
Manganese	2280	0.500	1.00	"	"	"	2230	92	"	---	---	
Mercury	1.15	0.0400	0.0800	"	"	1.11	0.146	90	"	---	---	
Nickel	67.9	0.500	1.00	"	"	55.6	14.9	95	"	---	---	
Silver	26.5	0.100	0.200	"	"	27.8	0.222	95	"	---	---	
Zinc	649	2.00	4.00	"	"	55.6	609	72	"	---	---	Q-03
Post Spike (4010501-PS1)						Prepared: 01/27/14 15:29	Analyzed: 01/27/14 16:09					

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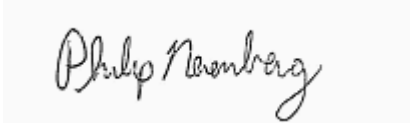

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503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010501 - EPA 3015A							**Water**					
Post Spike (4010501-PS1)					Prepared: 01/27/14 15:29 Analyzed: 01/27/14 16:09							
QC Source Sample: B18-SP1-20140107 (A4A0131-03)												
EPA 6020A												
Zinc	1040			ug/L	5	476	522	108	80-120%		---	

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010510 - EPA 3015A - Dissolved								Water				
Blank (4010510-BLK1)						Prepared: 01/24/14 12:23 Analyzed: 01/24/14 15:10						
EPA 6020A (Diss)												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Antimony	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	0.0400	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (4010510-BS1)						Prepared: 01/24/14 12:23 Analyzed: 01/24/14 15:19						
EPA 6020A (Diss)												
Aluminum	5630	25.0	50.0	ug/L	1	5560	---	101	80-120%	---	---	
Antimony	27.0	0.500	1.00	"	"	27.8	---	97	"	---	---	
Arsenic	54.2	0.500	1.00	"	"	55.6	---	98	"	---	---	
Cadmium	54.0	0.0400	0.200	"	"	"	---	97	"	---	---	
Chromium	56.2	0.500	1.00	"	"	"	---	101	"	---	---	
Copper	56.3	0.500	1.00	"	"	"	---	101	"	---	---	
Lead	56.0	0.100	0.200	"	"	"	---	101	"	---	---	
Manganese	59.0	0.500	1.00	"	"	"	---	106	"	---	---	
Mercury	1.03	0.0400	0.0800	"	"	1.11	---	92	"	---	---	
Nickel	55.8	0.500	1.00	"	"	55.6	---	100	"	---	---	
Silver	26.5	0.100	0.200	"	"	27.8	---	95	"	---	---	
Zinc	54.7	2.00	4.00	"	"	55.6	---	98	"	---	---	
Duplicate (4010510-DUP1)						Prepared: 01/24/14 12:23 Analyzed: 01/24/14 15:34						
QC Source Sample: B19-SP-19-1-20140107 (A4A0131-04)												
EPA 6020A (Diss)												

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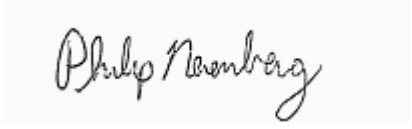

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503-718-2323 Phone
503-718-0333 Fax

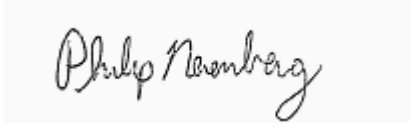
Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010510 - EPA 3015A - Dissolved							**Water**					
Duplicate (4010510-DUP1)					Prepared: 01/24/14 12:23 Analyzed: 01/24/14 15:34							
QC Source Sample: B19-SP-19-1-20140107 (A4A0131-04)												
Aluminum	**55.7**	25.0	50.0	ug/L	1	---	56.4	---	---	1	20%	
Antimony	**3.68**	0.500	1.00	"	"	---	3.68	---	---	0	20%	
Arsenic	**0.911**	0.500	1.00	"	"	---	0.911	---	---	0	20%	J
Cadmium	ND	0.0400	0.200	"	"	---	0.0444	---	---	***	20%	
Chromium	**3.42**	0.500	1.00	"	"	---	3.44	---	---	0.6	20%	
Copper	**13.8**	0.500	1.00	"	"	---	13.6	---	---	2	20%	
Lead	**1.32**	0.100	0.200	"	"	---	1.36	---	---	2	20%	
Manganese	**26.5**	0.500	1.00	"	"	---	26.4	---	---	0.3	20%	
Mercury	ND	0.0400	0.0800	"	"	---	ND	---	---	---	20%	
Nickel	**1.41**	0.500	1.00	"	"	---	1.63	---	---	15	20%	
Silver	ND	0.100	0.200	"	"	---	ND	---	---	---	20%	
Zinc	**9.53**	2.00	4.00	"	"	---	9.56	---	---	0.2	20%	
Matrix Spike (4010510-MS1)					Prepared: 01/24/14 12:23 Analyzed: 01/24/14 15:37							
QC Source Sample: B19-SP-19-1-20140107 (A4A0131-04)												
EPA 6020A (Diss)												
Aluminum	5450	25.0	50.0	ug/L	1	5560	56.4	97	75-125%	---	---	
Antimony	30.0	0.500	1.00	"	"	27.8	3.68	95	"	---	---	
Arsenic	55.3	0.500	1.00	"	"	55.6	0.911	98	"	---	---	
Cadmium	53.5	0.0400	0.200	"	"	"	0.0444	96	"	---	---	
Chromium	59.7	0.500	1.00	"	"	"	3.44	101	"	---	---	
Copper	69.1	0.500	1.00	"	"	"	13.6	100	"	---	---	
Lead	55.4	0.100	0.200	"	"	"	1.36	97	"	---	---	
Manganese	85.5	0.500	1.00	"	"	"	26.4	106	"	---	---	
Mercury	1.02	0.0400	0.0800	"	"	1.11	ND	92	"	---	---	
Nickel	56.0	0.500	1.00	"	"	55.6	1.63	98	"	---	---	
Silver	25.8	0.100	0.200	"	"	27.8	ND	93	"	---	---	
Zinc	64.2	2.00	4.00	"	"	55.6	9.56	98	"	---	---	

Apex Laboratories



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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010186 - Total Suspended Solids									Water			
Blank (4010186-BLK1)					Prepared: 01/09/14 14:07		Analyzed: 01/13/14 11:10					
SM 2540 D												
Total Suspended Solids	ND	2.00	2.00	mg/L	1	---	---	---	---	---	---	
Reference (4010186-SRM1)					Prepared: 01/09/14 14:07		Analyzed: 01/13/14 11:10					
SM 2540 D												
Total Suspended Solids	95.0			mg/L	1	100		95	90-110%	---	---	

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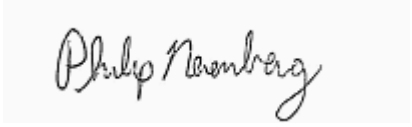

Philip Nerenberg, Lab Director

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503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010267 - Method Prep: Aq							**Water**					
Blank (4010267-BLK1)					Prepared: 01/14/14 08:03		Analyzed: 01/14/14 11:20					
SM 5310 B												
Total Organic Carbon	ND	1.00	1.00	mg/L	1	---	---	---	---	---	---	
LCS (4010267-BS1)					Prepared: 01/14/14 08:03		Analyzed: 01/14/14 11:54					
SM 5310 B												
Total Organic Carbon	10.5	1.00	1.00	mg/L	1	10.0	---	105	85-115%	---	---	
Duplicate (4010267-DUP1)					Prepared: 01/14/14 08:03		Analyzed: 01/14/14 16:47					
QC Source Sample: B19-SP-19-1-20140107 (A4A0131-04)												
SM 5310 B												
Total Organic Carbon	**9.42**	1.00	1.00	mg/L	1	---	9.73	---	---	3	20%	
Matrix Spike (4010267-MS1)					Prepared: 01/14/14 08:03		Analyzed: 01/14/14 17:13					
QC Source Sample: B19-SP-19-1-20140107 (A4A0131-04)												
SM 5310 B												
Total Organic Carbon	20.0	1.01	1.01	mg/L	1	10.0	9.73	103	75-125%	---	---	

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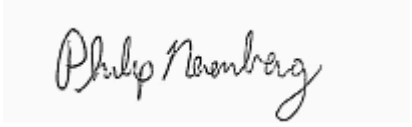

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

SAMPLE PREPARATION INFORMATION

Diesel and Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010275							
A4A0131-01	Water	NWTPH-Dx	01/07/14 13:45	01/14/14 11:14	1050mL/5mL	1000mL/5mL	0.95
A4A0131-02	Water	NWTPH-Dx	01/07/14 14:15	01/14/14 11:14	1060mL/5mL	1000mL/5mL	0.94
A4A0131-03	Water	NWTPH-Dx	01/07/14 15:45	01/14/14 11:14	1030mL/5mL	1000mL/5mL	0.97
A4A0131-04	Water	NWTPH-Dx	01/07/14 15:00	01/14/14 11:14	1050mL/10mL	1000mL/5mL	1.90

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010203							
A4A0131-01	Water	NWTPH-Gx (MS)	01/07/14 13:45	01/10/14 11:09	5mL/5mL	5mL/5mL	1.00
A4A0131-02	Water	NWTPH-Gx (MS)	01/07/14 14:15	01/10/14 11:09	5mL/5mL	5mL/5mL	1.00
A4A0131-03	Water	NWTPH-Gx (MS)	01/07/14 15:45	01/10/14 11:09	5mL/5mL	5mL/5mL	1.00
A4A0131-04	Water	NWTPH-Gx (MS)	01/07/14 15:00	01/10/14 11:09	5mL/5mL	5mL/5mL	1.00

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3510C (Neutral pH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010401							
A4A0131-01	Water	EPA 8082A	01/07/14 13:45	01/20/14 10:39	960mL/2mL	1000mL/1mL	2.08
A4A0131-02	Water	EPA 8082A	01/07/14 14:15	01/20/14 10:39	1050mL/2mL	1000mL/1mL	1.90
A4A0131-03	Water	EPA 8082A	01/07/14 15:45	01/20/14 10:39	1040mL/2mL	1000mL/1mL	1.92
A4A0131-04	Water	EPA 8082A	01/07/14 15:00	01/20/14 10:39	980mL/2mL	1000mL/1mL	2.04

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3510C (Neutral pH)/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010254							
A4A0131-01RE1	Water	EPA 8081B	01/07/14 13:45	01/13/14 12:52	1030mL/10mL	1000mL/5mL	1.94
A4A0131-02RE1	Water	EPA 8081B	01/07/14 14:15	01/13/14 12:52	1050mL/10mL	1000mL/5mL	1.90
A4A0131-03RE1	Water	EPA 8081B	01/07/14 15:45	01/13/14 12:52	1030mL/10mL	1000mL/5mL	1.94
A4A0131-04RE1	Water	EPA 8081B	01/07/14 15:00	01/13/14 12:52	1030mL/10mL	1000mL/5mL	1.94

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

SAMPLE PREPARATION INFORMATION

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010262							
A4A0131-01RE1	Water	EPA 8270D P/P	01/07/14 13:45	01/14/14 07:12	1030mL/2mL	1000mL/1mL	1.94
A4A0131-02RE1	Water	EPA 8270D P/P	01/07/14 14:15	01/14/14 07:12	990mL/1mL	1000mL/1mL	1.01
A4A0131-03RE1	Water	EPA 8270D P/P	01/07/14 15:45	01/14/14 07:12	970mL/2mL	1000mL/1mL	2.06
A4A0131-04	Water	EPA 8270D P/P	01/07/14 15:00	01/14/14 07:12	970mL/2mL	1000mL/1mL	2.06

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010501							
A4A0131-01	Water	EPA 6020A	01/07/14 13:45	01/24/14 09:12	45mL/50mL	45mL/50mL	1.00
A4A0131-02	Water	EPA 6020A	01/07/14 14:15	01/24/14 09:12	45mL/50mL	45mL/50mL	1.00
A4A0131-03	Water	EPA 6020A	01/07/14 15:45	01/24/14 09:12	45mL/50mL	45mL/50mL	1.00
A4A0131-04	Water	EPA 6020A	01/07/14 15:00	01/24/14 09:12	45mL/50mL	45mL/50mL	1.00

Dissolved Metals by EPA 6020 (ICPMS)

Prep: EPA 3015A - Dissolved

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010510							
A4A0131-01	Water	EPA 6020A (Diss)	01/07/14 13:45	01/24/14 12:23	45mL/50mL	45mL/50mL	1.00
A4A0131-02	Water	EPA 6020A (Diss)	01/07/14 14:15	01/24/14 12:23	45mL/50mL	45mL/50mL	1.00
A4A0131-03	Water	EPA 6020A (Diss)	01/07/14 15:45	01/24/14 12:23	45mL/50mL	45mL/50mL	1.00
A4A0131-04	Water	EPA 6020A (Diss)	01/07/14 15:00	01/24/14 12:23	45mL/50mL	45mL/50mL	1.00

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010267							
A4A0131-01	Water	SM 5310 B	01/07/14 13:45	01/14/14 08:03	40mL/40mL	40mL/40mL	1.00
A4A0131-02	Water	SM 5310 B	01/07/14 14:15	01/14/14 08:03	40mL/40mL	40mL/40mL	1.00
A4A0131-03	Water	SM 5310 B	01/07/14 15:45	01/14/14 08:03	40mL/40mL	40mL/40mL	1.00
A4A0131-04	Water	SM 5310 B	01/07/14 15:00	01/14/14 08:03	40mL/40mL	40mL/40mL	1.00

Prep: Total Suspended Solids

Sample	Default	RL Prep

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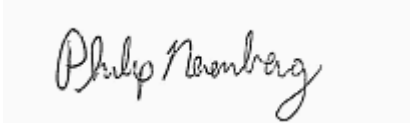

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

SAMPLE PREPARATION INFORMATION

Conventional Chemistry Parameters

Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 4010186							
A4A0131-01	Water	SM 2540 D	01/07/14 13:45	01/09/14 14:07	1N/A/1N/A	1N/A/1N/A	NA
A4A0131-02	Water	SM 2540 D	01/07/14 14:15	01/09/14 14:07	1N/A/1N/A	1N/A/1N/A	NA
A4A0131-03	Water	SM 2540 D	01/07/14 15:45	01/09/14 14:07	1N/A/1N/A	1N/A/1N/A	NA
A4A0131-04	Water	SM 2540 D	01/07/14 15:00	01/09/14 14:07	1N/A/1N/A	1N/A/1N/A	NA

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4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

Notes and Definitions

Qualifiers:

C-05	Extract has undergone a GPC (Gel-Permeation Chromotography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
J	Estimated Result . Result detected below the lowest point of the calibration curve, but above the specified MDL.
P-10	Result estimated due to the presence of multiple aroclors and/or matrix interference.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
R-04	Reporting levels elevated due to dilution necessary for analysis.
R-07	Reporting limit raised due to interference from detected multi-component analyte.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

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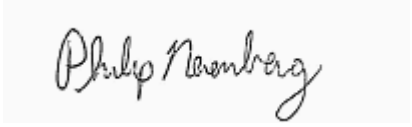

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Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

*** Used to indicate a possible discrepency with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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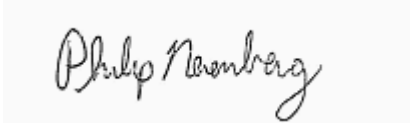

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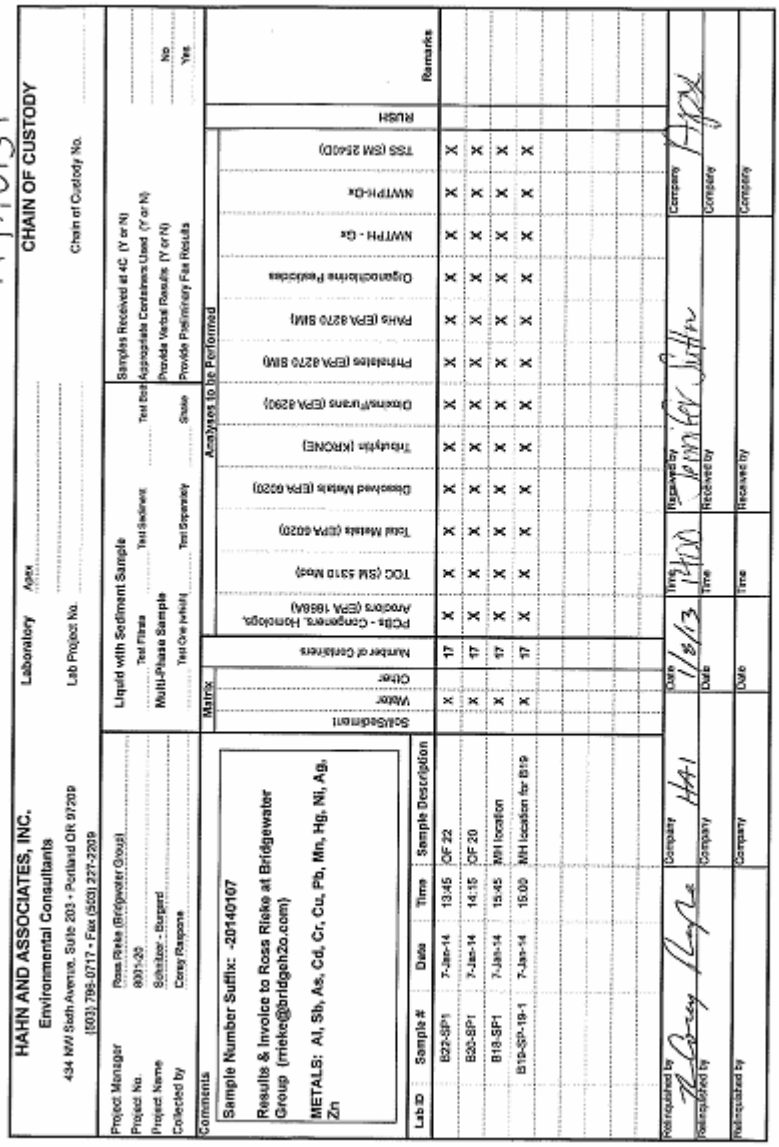
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

A4A0131



HAHN AND ASSOCIATES, INC.
Environmental Consultants
434 NW Sixth Avenue, Suite 203 • Portland OR 97209
(503) 796-0717 • Fax (503) 227-2209

CHAIN OF CUSTODY

Laboratory: Apex
Lab Project No.:
Chain of Custody No.:

Project Manager	Ross Rieke (Bridgewater Group)
Project No.	8001-20
Project Name	Schnitzer - Burgard
Collected by	Corey Raspone

Liquid with Sediment Sample: Test Filtrate / Test Sediment / Test Both
Multi-Phase Sample: Test One (which) / Test Separately / Shake
Samples Received at 4C (Y or N)
Appropriate Containers Used (Y or N)
Provide Verbal Results (Y or N) — No
Provide Preliminary Fax Results — Yes

Comments

Sample Number Suffix: -20140107

Results & Invoice to Ross Rieke at Bridgewater Group (rrieke@bridgeh2o.com)

METALS: Al, Sb, As, Cd, Cr, Cu, Pb, Mn, Hg, Ni, Ag, Zn

Analyses to be Performed

Lab ID	Sample #	Date	Time	Sample Description	Soil/Sediment	Water	Other	Number of Containers	PCBs - Congeners, Homologs, Aroclors (EPA 1668A)	TOC (SM 5310 Mod)	Total Metals (EPA 6020)	Dissolved Metals (EPA 6020)	Tributyltin (KRONE)	Dioxins/Furans (EPA 8290)	Phthalates (EPA 8270 SIM)	PAHs (EPA 8270 SIM)	Organochlorine Pesticides	NWTPH - Gx	NWTPH-Dx	TSS (SM 2540D)	RUSH	Remarks
	B22-SP1	7-Jan-14	13:45	OF 22		X		17	X	X	X	X	X	X	X	X	X	X	X	X		
	B20-SP1	7-Jan-14	14:15	OF 20		X		17	X	X	X	X	X	X	X	X	X	X	X	X		
	B18-SP1	7-Jan-14	15:45	MH location		X		17	X	X	X	X	X	X	X	X	X	X	X	X		
	B19-SP-19-1	7-Jan-14	16:00	MH location for B19		X		17	X	X	X	X	X	X	X	X	X	X	X	X		

Relinquished by: Corey Raspone	Company: HAI	Date: 1/8/13	Time: 1400	Received by: Jennifer Sutton	Company: Apex
Relinquished by	Company	Date	Time	Received by	Company
Relinquished by	Company	Date	Time	Received by	Company

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Your Project #: A4A0131
Your C.O.C. #: na

Attention: Philip Nerenberg
Apex Laboratories
12232 SW Garden Place
Tigard, OR
USA 97223

Report Date: 2014/01/30
Report #: R2818940
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B403971
Received: 2014/01/10, 12:10

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Dioxins/Furans in Water (8290A) (1)	4	2014/01/13	2014/01/17	BRL SOP-00406	EPA 8290A mod.
2378TCDF Confirmation in Water	1	N/A	2014/01/17	BRL SOP-00406	EPA 8290 mod.
PCB Congeners in Water (1668A)	4	2014/01/27	2014/01/28	BRL SOP-00408	EPA 1668A mod.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ivana Vukovic, Env Project Manager
Email: IVukovic@maxxam.ca
Phone# (905) 817-5700

==========

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Total cover pages: 1

Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8683						
Sampling Date		2014/01/07 13:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	0.85 U	0.85	22	1.00	0.850		3482485
1,2,3,7,8-Penta CDD	pg/L	1.2 U	1.2	56	1.00	1.20		3482485
1,2,3,4,7,8-Hexa CDD	pg/L	2.9 J	1.1	56	0.100	0.290		3482485
1,2,3,6,7,8-Hexa CDD	pg/L	6.70 J	0.94	56	0.100	0.670		3482485
1,2,3,7,8,9-Hexa CDD	pg/L	6.89 J	0.93	56	0.100	0.689		3482485
1,2,3,4,6,7,8-Hepta CDD	pg/L	170	1.1	56	0.0100	1.70		3482485
Octa CDD	pg/L	1500	1.4	110	0.000300	0.450		3482485
Total Tetra CDD	pg/L	0.85 U	0.85	22				3482485
Total Penta CDD	pg/L	2.2 J	1.2	56				3482485
Total Hexa CDD	pg/L	47.0 J	0.97	56				3482485
Total Hepta CDD	pg/L	326	1.1	56				3482485
2,3,7,8-Tetra CDF **	pg/L	1.2 J	1.0	22	0.100	0.120		3482485
1,2,3,7,8-Penta CDF	pg/L	1.1 U	1.1	56	0.0300	0.0330		3482485
2,3,4,7,8-Penta CDF	pg/L	1.1 U	1.1	56	0.300	0.330		3482485
1,2,3,4,7,8-Hexa CDF	pg/L	4.36 J	0.94	56	0.100	0.436		3482485
1,2,3,6,7,8-Hexa CDF	pg/L	2.92 J	0.91	56	0.100	0.292		3482485
2,3,4,6,7,8-Hexa CDF	pg/L	2.5 J	1.0	56	0.100	0.250		3482485
1,2,3,7,8,9-Hexa CDF	pg/L	1.2 U	1.2	56	0.100	0.120		3482485
1,2,3,4,6,7,8-Hepta CDF	pg/L	77 U (1)	77	56	0.0100	0.770		3482485
1,2,3,4,7,8,9-Hepta CDF	pg/L	4.4 J	1.3	56	0.0100	0.0440		3482485
Octa CDF	pg/L	202	1.1	110	0.000300	0.0606		3482485
Total Tetra CDF	pg/L	5.8 J	1.0	22				3482485
Total Penta CDF	pg/L	23.9 J	1.1	56				3482485
Total Hexa CDF	pg/L	79.9	1.0	56				3482485
Total Hepta CDF	pg/L	115	1.1	56				3482485
TOTAL TOXIC EQUIVALENCY	pg/L					8.30		
Surrogate Recovery (%)								
C13-1234678 HeptaCDD	%	80						3482485

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8683						
Sampling Date		2014/01/07 13:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	78						3482485
C13-123478 HexaCDF	%	78						3482485
C13-123678 HexaCDD *	%	89						3482485
C13-12378 PentaCDD	%	72						3482485
C13-12378 PentaCDF	%	57						3482485
C13-2378 TetraCDD	%	77						3482485
C13-2378 TetraCDF	%	62						3482485
C13-OCDD	%	85						3482485

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	0.90 U	0.90	22	1.00	0.900		3482485
1,2,3,7,8-Penta CDD	pg/L	2.90 J	0.98	56	1.00	2.90		3482485
1,2,3,4,7,8-Hexa CDD	pg/L	4.45 J	0.99	56	0.100	0.445		3482485
1,2,3,6,7,8-Hexa CDD	pg/L	15.3 J	0.87	56	0.100	1.53		3482485
1,2,3,7,8,9-Hexa CDD	pg/L	11.9 J	0.86	56	0.100	1.19		3482485
1,2,3,4,6,7,8-Hepta CDD	pg/L	375	0.93	56	0.0100	3.75		3482485
Octa CDD	pg/L	3290	1.1	110	0.000300	0.987		3482485
Total Tetra CDD	pg/L	1.01 J	0.90	22				3482485
Total Penta CDD	pg/L	7.37 J	0.98	56				3482485
Total Hexa CDD	pg/L	118	0.90	56				3482485
Total Hepta CDD	pg/L	883	0.93	56				3482485
2,3,7,8-Tetra CDF **	pg/L	5.2 J	1.1	22	0.100	0.520		3482485
1,2,3,7,8-Penta CDF	pg/L	2.0 J	1.1	56	0.0300	0.0600		3482485
2,3,4,7,8-Penta CDF	pg/L	3.2 J	1.1	56	0.300	0.960		3482485
1,2,3,4,7,8-Hexa CDF	pg/L	8.16 J	0.96	56	0.100	0.816		3482485
1,2,3,6,7,8-Hexa CDF	pg/L	3.67 J	0.93	56	0.100	0.367		3482485
2,3,4,6,7,8-Hexa CDF	pg/L	3.1 J	1.0	56	0.100	0.310		3482485
1,2,3,7,8,9-Hexa CDF	pg/L	1.2 U	1.2	56	0.100	0.120		3482485
1,2,3,4,6,7,8-Hepta CDF	pg/L	64 U (1)	64	56	0.0100	0.640		3482485
1,2,3,4,7,8,9-Hepta CDF	pg/L	4.9 U (1)	4.9	56	0.0100	0.0490		3482485
Octa CDF	pg/L	143	1.1	110	0.000300	0.0429		3482485
Total Tetra CDF	pg/L	30.9	1.1	22				3482485
Total Penta CDF	pg/L	40.3 J	1.1	56				3482485
Total Hexa CDF	pg/L	106	1.0	56				3482485
Total Hepta CDF	pg/L	126	1.2	56				3482485
TOTAL TOXIC EQUIVALENCY	pg/L					15.6		
Surrogate Recovery (%)								
C13-1234678 HeptaCDD	%	94						3482485

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	93						3482485
C13-123478 HexaCDF	%	85						3482485
C13-123678 HexaCDD *	%	96						3482485
C13-12378 PentaCDD	%	65						3482485
C13-12378 PentaCDF	%	56						3482485
C13-2378 TetraCDD	%	82						3482485
C13-2378 TetraCDF	%	71						3482485
C13-OCDD	%	102						3482485

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	1.1 U	1.1	22	1.00	1.10		3482485
1,2,3,7,8-Penta CDD	pg/L	3.82 J	0.92	56	1.00	3.82		3482485
1,2,3,4,7,8-Hexa CDD	pg/L	6.1 J	1.0	56	0.100	0.610		3482485
1,2,3,6,7,8-Hexa CDD	pg/L	20.5 J	0.89	56	0.100	2.05		3482485
1,2,3,7,8,9-Hexa CDD	pg/L	14.5 J	0.88	56	0.100	1.45		3482485
1,2,3,4,6,7,8-Hepta CDD	pg/L	494	1.8	56	0.0100	4.94		3482485
Octa CDD	pg/L	4290	2.7	110	0.000300	1.29		3482485
Total Tetra CDD	pg/L	5.4 J	1.1	22				3482485
Total Penta CDD	pg/L	12.9 J	0.92	56				3482485
Total Hexa CDD	pg/L	150	0.93	56				3482485
Total Hepta CDD	pg/L	1070	1.8	56				3482485
2,3,7,8-Tetra CDF **	pg/L	6.8 J	1.1	22	0.100	0.680		3482485
1,2,3,7,8-Penta CDF	pg/L	2.8 J	1.3	56	0.0300	0.0840		3482485
2,3,4,7,8-Penta CDF	pg/L	4.8 J	1.3	56	0.300	1.44		3482485
1,2,3,4,7,8-Hexa CDF	pg/L	10.8 J	1.0	56	0.100	1.08		3482485
1,2,3,6,7,8-Hexa CDF	pg/L	5.4 J	1.0	56	0.100	0.540		3482485
2,3,4,6,7,8-Hexa CDF	pg/L	4.4 J	1.1	56	0.100	0.440		3482485
1,2,3,7,8,9-Hexa CDF	pg/L	1.3 U	1.3	56	0.100	0.130		3482485
1,2,3,4,6,7,8-Hepta CDF	pg/L	83 U (1)	83	56	0.0100	0.830		3482485
1,2,3,4,7,8,9-Hepta CDF	pg/L	6.8 J	1.8	56	0.0100	0.0680		3482485
Octa CDF	pg/L	205	1.1	110	0.000300	0.0615		3482485
Total Tetra CDF	pg/L	55.6	1.1	22				3482485
Total Penta CDF	pg/L	74.9	1.3	56				3482485
Total Hexa CDF	pg/L	141	1.1	56				3482485
Total Hepta CDF	pg/L	151	1.6	56				3482485
TOTAL TOXIC EQUIVALENCY	pg/L					20.6		
Surrogate Recovery (%)								
C13-1234678 HeptaCDD	%	93						3482485

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	92						3482485
C13-123478 HexaCDF	%	91						3482485
C13-123678 HexaCDD *	%	100						3482485
C13-12378 PentaCDD	%	68						3482485
C13-12378 PentaCDF	%	59						3482485
C13-2378 TetraCDD	%	82						3482485
C13-2378 TetraCDF	%	71						3482485
C13-OCDD	%	107						3482485

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	6.0 J	1.1	22	1.00	6.00		3482485
1,2,3,7,8-Penta CDD	pg/L	36.2 J	1.1	56	1.00	36.2		3482485
1,2,3,4,7,8-Hexa CDD	pg/L	56.7	1.0	56	0.100	5.67		3482485
1,2,3,6,7,8-Hexa CDD	pg/L	276	0.88	56	0.100	27.6		3482485
1,2,3,7,8,9-Hexa CDD	pg/L	173	0.87	56	0.100	17.3		3482485
1,2,3,4,6,7,8-Hepta CDD	pg/L	6550	1.1	56	0.0100	65.5		3482485
Octa CDD	pg/L	67500 (1)	1.4	110	0.000300	20.3		3482485
Total Tetra CDD	pg/L	60.9	1.1	22				3482485
Total Penta CDD	pg/L	181	1.1	56				3482485
Total Hexa CDD	pg/L	2220	0.92	56				3482485
Total Hepta CDD	pg/L	15500	1.1	56				3482485
2,3,7,8-Tetra CDF **	pg/L	101	0.85	22	0.100	10.1		3482485
1,2,3,7,8-Penta CDF	pg/L	31.8 J	1.0	56	0.0300	0.954		3482485
2,3,4,7,8-Penta CDF	pg/L	59.7	1.1	56	0.300	17.9		3482485
1,2,3,4,7,8-Hexa CDF	pg/L	130	1.1	56	0.100	13.0		3482485
1,2,3,6,7,8-Hexa CDF	pg/L	61.4	1.0	56	0.100	6.14		3482485
2,3,4,6,7,8-Hexa CDF	pg/L	49.3 J	1.2	56	0.100	4.93		3482485
1,2,3,7,8,9-Hexa CDF	pg/L	4.1 J	1.3	56	0.100	0.410		3482485
1,2,3,4,6,7,8-Hepta CDF	pg/L	1000 U (2)	1000	56	0.0100	10.0		3482485
1,2,3,4,7,8,9-Hepta CDF	pg/L	78 U (2)	78	56	0.0100	0.780		3482485
Octa CDF	pg/L	2980	1.6	110	0.000300	0.894		3482485
Total Tetra CDF	pg/L	689	0.85	22				3482485
Total Penta CDF	pg/L	608	1.1	56				3482485
Total Hexa CDF	pg/L	1730	1.1	56				3482485
Total Hepta CDF	pg/L	2220	1.4	56				3482485
Confirmation 2,3,7,8-Tetra CDF	pg/L	70.2	1.2	11	0.100	7.02		3486957
TOTAL TOXIC EQUIVALENCY	pg/L					241		

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
(1) EMCL - PCDD/DF analysis - Exceeds Maximum Calibration Limit
(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			**TOXIC EQUIVALENCY**		**# of**	
	Units	**B19-SP-19-1-20140107**	**EDL**	**RDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
Surrogate Recovery (%)								
C13-1234678 HeptaCDD *	%	86						3482485
C13-1234678 HeptaCDF **	%	88						3482485
C13-123478 HexaCDF	%	83						3482485
C13-123678 HexaCDD	%	90						3482485
C13-12378 PentaCDD	%	54						3482485
C13-12378 PentaCDF	%	50						3482485
C13-2378 TetraCDD	%	77						3482485
C13-2378 TetraCDF	%	65						3482485
C13-OCDD	%	105						3482485
Confirmation C13-2378 TetraCDF	%	91						3486957

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8683						
Sampling Date		2014/01/07 13:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.0654 J	0.0015	0.095				3495980
3-MonoCB-(2)	ng/L	0.0133 J	0.0012	0.095				3495980
4-MonoCB-(3)	ng/L	0.030 U (1)	0.030	0.095				3495980
22'-DiCB-(4)	ng/L	0.629	0.018	0.095				3495980
2,3-DiCB-(5)	ng/L	0.022 U	0.022	0.095				3495980
2,3'-DiCB-(6)	ng/L	0.18 U (1)	0.18	0.095				3495980
2,4-DiCB-(7)	ng/L	0.027 U	0.027	0.095				3495980
2,4'-DiCB-(8)	ng/L	0.935	0.021	0.095				3495980
2,5-DiCB-(9)	ng/L	0.054 U (1)	0.054	0.095				3495980
2,6-DiCB-(10)	ng/L	0.016 J	0.012	0.095				3495980
3,3'-DiCB-(11)	ng/L	3.90	0.023	0.095				3495980
DiCB-(12)+(13)	ng/L	0.10 U (1)	0.10	0.19				3495980
3,5-DiCB-(14)	ng/L	0.022 U	0.022	0.095				3495980
4,4'-DiCB-(15)	ng/L	0.749	0.036	0.095				3495980
22'3-TriCB-(16)	ng/L	1.01	0.0042	0.095				3495980
22'4-TriCB-(17)	ng/L	0.739	0.0032	0.095				3495980
TriCB-(18)+(30)	ng/L	1.55	0.0025	0.19				3495980
22'6-TriCB-(19)	ng/L	0.197	0.0032	0.095				3495980
TriCB-(20) + (28)	ng/L	2.67	0.0037	0.19				3495980
TriCB-(21)+(33)	ng/L	1.76	0.0038	0.19				3495980
234'-TriCB-(22)	ng/L	1.11	0.0039	0.095				3495980
235-TriCB-(23)	ng/L	0.0039 U	0.0039	0.095				3495980
236-TriCB-(24)	ng/L	0.0022 U	0.0022	0.095				3495980
23'4-TriCB-(25)	ng/L	0.200	0.0038	0.095				3495980
TriCB-(26)+(29)	ng/L	0.438	0.0037	0.19				3495980
23'6-TriCB-(27)	ng/L	0.111	0.0022	0.095				3495980
24'5-TriCB-(31)	ng/L	2.27	0.0035	0.095				3495980
24'6-TriCB-(32)	ng/L	0.473	0.0020	0.095				3495980
23'5'-TriCB-(34)	ng/L	0.0064 J	0.0038	0.095				3495980

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8683						
Sampling Date		2014/01/07 13:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'4-TriCB-(35)	ng/L	0.0773 J	0.0040	0.095				3495980
33'5-TriCB-(36)	ng/L	0.0085 U (1)	0.0085	0.095				3495980
344'-TriCB-(37)	ng/L	0.983	0.0047	0.095				3495980
345-TriCB-(38)	ng/L	0.0039 U	0.0039	0.095				3495980
34'5-TriCB-(39)	ng/L	0.0072 J	0.0036	0.095				3495980
TetraCB-(40)+(41)+(71)	ng/L	1.10	0.0013	0.29				3495980
22'34'-TetraCB-(42)	ng/L	0.585	0.0016	0.095				3495980
22'35-TetraCB-(43)	ng/L	0.0859 J	0.0019	0.095				3495980
TetraCB-(44)+(47)+(65)	ng/L	1.76	0.0012	0.29				3495980
TetraCB-(45)+(51)	ng/L	0.316	0.0013	0.19				3495980
22'36'-TetraCB-(46)	ng/L	0.121	0.0015	0.095				3495980
22'45-TetraCB-(48)	ng/L	0.382	0.0012	0.095				3495980
TetraCB-(49)+TetraCB-(69)	ng/L	0.938	0.0011	0.19				3495980
TetraCB-(50)+(53)	ng/L	0.208	0.0012	0.19				3495980
22'55'-TetraCB-(52)	ng/L	1.66	0.0013	0.095				3495980
22'66'-TetraCB-(54)	ng/L	0.0056 J	0.0015	0.095				3495980
233'4-TetraCB-(55)	ng/L	0.0172 J	0.0012	0.095				3495980
233'4'-Tetra CB(56)	ng/L	0.728	0.0014	0.095				3495980
233'5-TetraCB-(57)	ng/L	0.0079 J	0.0012	0.095				3495980
233'5'-TetraCB-(58)	ng/L	0.0012 U	0.0012	0.095				3495980
TetraCB-(59)+(62)+(75)	ng/L	0.163 J	0.00095	0.29				3495980
2344'-TetraCB -(60)	ng/L	0.396	0.0012	0.095				3495980
TetraCB-(61)+(70)+(74)+(76)	ng/L	2.50	0.0012	0.38				3495980
234'5-TetraCB-(63)	ng/L	0.0441 J	0.0011	0.095				3495980
234'6-TetraCB-(64)	ng/L	0.869	0.0011	0.095				3495980
23'44'-TetraCB-(66)	ng/L	1.25	0.0012	0.095				3495980
23'45-TetraCB-(67)	ng/L	0.0502 J	0.0011	0.095				3495980
23'45'-TetraCB-(68)	ng/L	0.0053 U (1)	0.0053	0.095				3495980
23'55'-TetraCB-(72)	ng/L	0.0060 U (1)	0.0060	0.095				3495980

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	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'5'6-TetraCB-(73)	ng/L	0.00086 U	0.00086	0.095				3495980
33'44'-TetraCB-(77)	ng/L	0.194	0.0013	0.095	0.000100	0.0000194		3495980
33'45-TetraCB-(78)	ng/L	0.0012 U	0.0012	0.095				3495980
33'45'-TetraCB(79)	ng/L	0.0142 J	0.0011	0.095				3495980
33'55'-TetraCB-(80)	ng/L	0.0011 U	0.0011	0.095				3495980
344'5-TetraCB-(81)	ng/L	0.0039 U (1)	0.0039	0.095	0.000300	0.00000117		3495980
22'33'4-PentaCB-(82)	ng/L	0.224	0.0016	0.095				3495980
PentaCB-(83)+(99)	ng/L	0.661	0.0014	0.19				3495980
22'33'6-PentaCB-(84)	ng/L	0.396	0.0017	0.095				3495980
PentaCB-(85)+(116)+(117)	ng/L	0.210 J	0.0012	0.29				3495980
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	1.04	0.0012	0.57				3495980
PentaCB-(88)+(91)	ng/L	0.178 J	0.0014	0.19				3495980
22'346'-PentaCB-(89)	ng/L	0.0190 J	0.0015	0.095				3495980
PentaCB-(90)+(101)+(113)	ng/L	1.28	0.0012	0.29				3495980
22'355'-PentaCB-(92)	ng/L	0.218	0.0014	0.095				3495980
PentaCB-(93)+(98)+(100)+(102)	ng/L	0.0584 J	0.0014	0.38				3495980
22'356'-PentaCB-(94)	ng/L	0.0066 J	0.0014	0.095				3495980
22'35'6-PentaCB-(95)	ng/L	0.956	0.0013	0.095				3495980
22'366'-PentaCB-(96)	ng/L	0.0132 J	0.00080	0.095				3495980
22'45'6-PentaCB-(103)	ng/L	0.0063 J	0.0012	0.095				3495980
22'466'-PentaCB-(104)	ng/L	0.0011 U	0.0011	0.095				3495980
233'44'-PentaCB-(105)	ng/L	0.803	0.0015	0.095	0.0000300	0.0000241		3495980
233'45-PentaCB-(106)	ng/L	0.0014 U	0.0014	0.095				3495980
233'4'5-PentaCB-(107)	ng/L	0.104	0.0013	0.095				3495980
PentaCB-(108)+(124)	ng/L	0.0649 J	0.0014	0.19				3495980
PentaCB-(110)+(115)	ng/L	2.13	0.0012	0.19				3495980
233'55'-PentaCB-(111)	ng/L	0.0010 U	0.0010	0.095				3495980
233'56-PentaCB-(112)	ng/L	0.0011 U	0.0011	0.095				3495980
2344'5-PentaCB-(114)	ng/L	0.0431 J	0.0015	0.095	0.0000300	0.00000129		3495980

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	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'44'5-PentaCB-(118)	ng/L	1.71	0.0015	0.095	0.0000300	0.0000513		3495980
23'455'-PentaCB-(120)	ng/L	0.0029 U (1)	0.0029	0.095				3495980
23'45'6-PentaCB-(121)	ng/L	0.0010 U	0.0010	0.095				3495980
233'4'5'-PentaCB-(122)	ng/L	0.023 U (1)	0.023	0.095				3495980
23'44'5'-PentaCB-(123)	ng/L	0.0296 J	0.0016	0.095	0.0000300	0.000000888		3495980
33'44'5-PentaCB-(126)	ng/L	0.014 U (1)	0.014	0.095	0.100	0.00140		3495980
33'455'-PentaCB-(127)	ng/L	0.0020 U	0.0020	0.095				3495980
HexaCB-(128)+(166)	ng/L	0.426	0.0028	0.19				3495980
HexaCB-(129)+(138)+(163)	ng/L	2.85	0.0031	0.29				3495980
22'33'45'-HexaCB-(130)	ng/L	0.161	0.0036	0.095				3495980
22'33'46-HexaCB-(131)	ng/L	0.0327 J	0.0037	0.095				3495980
22'33'46'-HexaCB-(132)	ng/L	0.772	0.0033	0.095				3495980
22'33'55'-HexaCB-(133)	ng/L	0.0232 J	0.0032	0.095				3495980
HexaCB-(134)+(143)	ng/L	0.0894 J	0.0036	0.19				3495980
HexaCB-(135)+(151)	ng/L	0.526	0.0012	0.19				3495980
22'33'66'-HexaCB-(136)	ng/L	0.187	0.00085	0.095				3495980
22'344'5-HexaCB-(137)	ng/L	0.105	0.0030	0.095				3495980
HexaCB-(139)+(140)	ng/L	0.0340 J	0.0029	0.19				3495980
22'3455'-HexaCB-(141)	ng/L	0.472	0.0034	0.095				3495980
22'3456-HexaCB-(142)	ng/L	0.0034 U	0.0034	0.095				3495980
22'345'6-HexaCB-(144)	ng/L	0.0795 J	0.0012	0.095				3495980
22'3466'-HexaCB-(145)	ng/L	0.00087 U	0.00087	0.095				3495980
22'34'55'-HexaCB-(146)	ng/L	0.288	0.0030	0.095				3495980
HexaCB-(147)+(149)	ng/L	1.42	0.0029	0.19				3495980
22'34'56'-HexaCB-(148)	ng/L	0.0011 U	0.0011	0.095				3495980
22'34'66'-HexaCB-(150)	ng/L	0.0018 U	0.0018	0.095				3495980
22'3566'-HexaCB-(152)	ng/L	0.00083 U	0.00083	0.095				3495980
HexaCB-(153)+(168)	ng/L	1.71	0.0024	0.19				3495980
22'44'56'-HexaCB-(154)	ng/L	0.0170 J	0.0010	0.095				3495980

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COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'44'66'-HexaCB-(155)	ng/L	0.0013 U	0.0013	0.095				3495980
HexaCB-(156)+(157)	ng/L	0.306	0.0064	0.19	0.0000300	0.00000918		3495980
233'44'6-HexaCB-(158)	ng/L	0.267	0.0024	0.095				3495980
233'455'-HexaCB-(159)	ng/L	0.0214 J	0.0071	0.095				3495980
233'456-HexaCB-(160)	ng/L	0.0027 U	0.0027	0.095				3495980
233'45'6-HexaCB-(161)	ng/L	0.0023 U	0.0023	0.095				3495980
233'4'55'-HexaCB-(162)	ng/L	0.0068 U	0.0068	0.095				3495980
233'4'5'6-HexaCB-(164)	ng/L	0.189	0.0026	0.095				3495980
233'55'6-HexaCB-(165)	ng/L	0.0025 U	0.0025	0.095				3495980
23'44'55'-HexaCB-(167)	ng/L	0.0956	0.0067	0.095	0.0000300	0.00000287		3495980
33'44'55'-HexaCB-(169)	ng/L	0.0069 U	0.0069	0.095	0.0300	0.000207		3495980
22'33'44'5-HeptaCB-(170)	ng/L	0.489	0.0037	0.095				3495980
HeptaCB-(171)+(173)	ng/L	0.153 J	0.0049	0.19				3495980
22'33'455'-HeptaCB-(172)	ng/L	0.0932 J	0.0049	0.095				3495980
22'33'456'-HeptaCB-(174)	ng/L	0.501	0.0045	0.095				3495980
22'33'45'6-HeptaCB-(175)	ng/L	0.0230 J	0.0011	0.095				3495980
22'33'466'-HeptaCB-(176)	ng/L	0.0507 J	0.00081	0.095				3495980
22'33'45'6'-HeptaCB-(177)	ng/L	0.289	0.0050	0.095				3495980
22'33'55'6-HeptaCB-(178)	ng/L	0.0939 J	0.0011	0.095				3495980
22'33'566'-HeptaCB-(179)	ng/L	0.162	0.00078	0.095				3495980
HeptaCB-(180)+(193)	ng/L	1.34	0.0037	0.19				3495980
22'344'56-HeptaCB-(181)	ng/L	0.0046 U	0.0046	0.095				3495980
22'344'56'-HeptaCB-(182)	ng/L	0.0034 U (1)	0.0034	0.095				3495980
22'344'5'6-HeptaCB-(183)	ng/L	0.289	0.0038	0.095				3495980
22'344'66'-HeptaCB-(184)	ng/L	0.00073 U	0.00073	0.095				3495980
22'3455'6-HeptaCB-(185)	ng/L	0.0052 U	0.0052	0.095				3495980
22'34566'-HeptaCB-(186)	ng/L	0.00082 U	0.00082	0.095				3495980
22'34'55'6-HeptaCB-(187)	ng/L	0.619	0.0010	0.095				3495980
22'34'566'-HeptaCB-(188)	ng/L	0.0013 U	0.0013	0.095				3495980

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	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'44'55'-HeptaCB-(189)	ng/L	0.019 U (1)	0.019	0.095	0.0000300	0.000000570		3495980
233'44'56-HeptaCB-(190)	ng/L	0.0949 J	0.0040	0.095				3495980
233'44'5'6-HeptaCB-(191)	ng/L	0.0216 J	0.0037	0.095				3495980
233'455'6-HeptaCB-(192)	ng/L	0.0039 U	0.0039	0.095				3495980
22'33'44'55'-OctaCB-(194)	ng/L	0.354	0.0037	0.095				3495980
22'33'44'56-OctaCB-(195)	ng/L	0.0993	0.0039	0.095				3495980
22'33'44'56'-OctaCB-(196)	ng/L	0.184	0.0040	0.095				3495980
22'33'44'66'OctaCB-(197)	ng/L	0.0070 U (1)	0.0070	0.095				3495980
OctaCB-(198)+(199)	ng/L	0.487	0.0040	0.19				3495980
22'33'4566'-OctaCB-(200)	ng/L	0.0541 J	0.0033	0.095				3495980
22'33'45'66'-OctaCB-(201)	ng/L	0.0480 J	0.0027	0.095				3495980
22'33'55'66'-OctaCB-(202)	ng/L	0.100	0.0039	0.095				3495980
22'344'55'6-OctaCB-(203)	ng/L	0.323	0.0037	0.095				3495980
22'344'566'-OctaCB-(204)	ng/L	0.0028 U	0.0028	0.095				3495980
233'44'55'6-OctaCB-(205)	ng/L	0.0167 J	0.0027	0.095				3495980
22'33'44'55'6-NonaCB-(206)	ng/L	0.372	0.0043	0.095				3495980
22'33'44'566'-NonaCB-(207)	ng/L	0.0407 J	0.0034	0.095				3495980
22'33'455'66'-NonaCB-(208)	ng/L	0.0808 J	0.0040	0.095				3495980
DecaCB-(209)	ng/L	0.0638 J	0.0021	0.095				3495980
Monochlorobiphenyl	ng/L	0.0787	0.0015	N/A				3495980
Dichlorobiphenyl	ng/L	6.23	0.036	N/A				3495980
Trichlorobiphenyl	ng/L	13.6	0.0047	N/A				3495980
Tetrachlorobiphenyl	ng/L	13.4	0.0019	N/A				3495980
Pentachlorobiphenyl	ng/L	10.1	0.0017	N/A				3495980
Hexachlorobiphenyl	ng/L	10.1	0.0071	N/A				3495980
Heptachlorobiphenyl	ng/L	4.22	0.0052	N/A				3495980
Octachlorobiphenyl	ng/L	1.67	0.0040	N/A				3495980
Nonachlorobiphenyl	ng/L	0.493	0.0043	N/A				3495980
Decachlorobiphenyl	ng/L	0.0638	0.0021	N/A				3495980

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Total PCB	ng/L	59.9	N/A	N/A				3495980
TOTAL TOXIC EQUIVALENCY	ng/L					0.00172		
Surrogate Recovery (%)								
C13-2,44'-TriCB-(28)	%	101						3495980
C13-22'33'44'55'6-NonaCB-(206)	%	113						3495980
C13-22'33'44'5-HeptaCB-(170)	%	106						3495980
C13-22'33'455'66'-NonaCB-(208)	%	121						3495980
C13-22'33'55'66'-OctaCB-(202)	%	118						3495980
C13-22'33'55'6-HeptaCB-(178)	%	118						3495980
C13-22'344'55'-HeptaCB-(180)	%	108						3495980
C13-22'34'566'-HeptaCB-(188)	%	107						3495980
C13-22'44'66'-HexaCB-(155)	%	99						3495980
C13-22'466'-PentaCB-(104)	%	112						3495980
C13-22'66'-TetraCB-(54)	%	95						3495980
C13-22'6-TriCB-(19)	%	90						3495980
C13-22'-DiCB-(4)	%	59						3495980
C13-233'44'55'6-OctaCB-(205)	%	99						3495980
C13-233'44'55'-HeptaCB-(189)	%	94						3495980
C13-233'44'-PentaCB-(105)	%	115						3495980
C13-233'55'-PentaCB-(111)	%	116						3495980
C13-23'44'55'-HexaCB-(167)	%	97						3495980
C13-2344'5-PentaCB-(114)	%	113						3495980
C13-23'44'5-PentaCB-(118)	%	116						3495980
C13-2'344'5-PentaCB-(123)	%	115						3495980
C13-2-MonoCB-(1)	%	40						3495980
C13-33'44'55'-HexaCB-(169)	%	39						3495980
C13-33'44'5-PentaCB-(126)	%	100						3495980
C13-33'44'-TetraCB-(77)	%	109						3495980
C13-344'5-TetraCB-(81)	%	109						3495980

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Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8683						
Sampling Date		2014/01/07 13:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-344'-TriCB-(37)	%	95						3495980
C13-44'-DiCB-(15)	%	99						3495980
C13-4-MonoCB-(3)	%	51						3495980
C13-DecaCB-(209)	%	93						3495980
C13-HexaCB-(156)+(157)	%	95						3495980

RDL = Reportable Detection Limit
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QC Batch = Quality Control Batch
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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.111	0.0035	0.095				3495980
3-MonoCB-(2)	ng/L	0.0160 J	0.0029	0.095				3495980
4-MonoCB-(3)	ng/L	0.0566 J	0.0033	0.095				3495980
22'-DiCB-(4)	ng/L	0.996	0.014	0.095				3495980
2,3-DiCB-(5)	ng/L	0.031 U (1)	0.031	0.095				3495980
2,3'-DiCB-(6)	ng/L	0.327	0.021	0.095				3495980
2,4-DiCB-(7)	ng/L	0.050 U (1)	0.050	0.095				3495980
2,4'-DiCB-(8)	ng/L	1.32	0.021	0.095				3495980
2,5-DiCB-(9)	ng/L	0.086 U (1)	0.086	0.095				3495980
2,6-DiCB-(10)	ng/L	0.019 U (1)	0.019	0.095				3495980
3,3'-DiCB-(11)	ng/L	0.722	0.022	0.095				3495980
DiCB-(12)+(13)	ng/L	0.161 J	0.022	0.19				3495980
3,5-DiCB-(14)	ng/L	0.021 U	0.021	0.095				3495980
4,4'-DiCB-(15)	ng/L	1.68	0.035	0.095				3495980
22'3-TriCB-(16)	ng/L	2.00	0.0094	0.095				3495980
22'4-TriCB-(17)	ng/L	1.50	0.0071	0.095				3495980
TriCB-(18)+(30)	ng/L	2.99	0.0057	0.19				3495980
22'6-TriCB-(19)	ng/L	0.391	0.0072	0.095				3495980
TriCB-(20) + (28)	ng/L	6.06	0.0031	0.19				3495980
TriCB-(21)+(33)	ng/L	3.66	0.0032	0.19				3495980
234'-TriCB-(22)	ng/L	2.42	0.0033	0.095				3495980
235-TriCB-(23)	ng/L	0.0033 U	0.0033	0.095				3495980
236-TriCB-(24)	ng/L	0.0050 U	0.0050	0.095				3495980
23'4-TriCB-(25)	ng/L	0.437	0.0032	0.095				3495980
TriCB-(26)+(29)	ng/L	0.961	0.0032	0.19				3495980
23'6-TriCB-(27)	ng/L	0.263	0.0048	0.095				3495980
24'5-TriCB-(31)	ng/L	4.80	0.0030	0.095				3495980
24'6-TriCB-(32)	ng/L	1.10	0.0045	0.095				3495980
23'5'-TriCB-(34)	ng/L	0.0032 U	0.0032	0.095				3495980

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	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'4-TriCB-(35)	ng/L	0.118	0.0034	0.095				3495980
33'5-TriCB-(36)	ng/L	0.0030 U	0.0030	0.095				3495980
344'-TriCB-(37)	ng/L	2.15	0.0040	0.095				3495980
345-TriCB-(38)	ng/L	0.0033 U	0.0033	0.095				3495980
34'5-TriCB-(39)	ng/L	0.0223 J	0.0031	0.095				3495980
TetraCB-(40)+(41)+(71)	ng/L	3.06	0.0014	0.29				3495980
22'34'-TetraCB-(42)	ng/L	1.72	0.0018	0.095				3495980
22'35-TetraCB-(43)	ng/L	0.225	0.0020	0.095				3495980
TetraCB-(44)+(47)+(65)	ng/L	5.29	0.0013	0.29				3495980
TetraCB-(45)+(51)	ng/L	0.851	0.0014	0.19				3495980
22'36'-TetraCB-(46)	ng/L	0.313	0.0017	0.095				3495980
22'45-TetraCB-(48)	ng/L	0.923	0.0013	0.095				3495980
TetraCB-(49)+TetraCB-(69)	ng/L	2.75	0.0012	0.19				3495980
TetraCB-(50)+(53)	ng/L	0.582	0.0013	0.19				3495980
22'55'-TetraCB-(52)	ng/L	5.55	0.0013	0.095				3495980
22'66'-TetraCB-(54)	ng/L	0.010 U (1)	0.010	0.095				3495980
233'4-TetraCB-(55)	ng/L	0.0054 U	0.0054	0.095				3495980
233'4'-Tetra CB(56)	ng/L	1.83	0.0061	0.095				3495980
233'5-TetraCB-(57)	ng/L	0.0053 U	0.0053	0.095				3495980
233'5'-TetraCB-(58)	ng/L	0.0052 U	0.0052	0.095				3495980
TetraCB-(59)+(62)+(75)	ng/L	0.449	0.0010	0.29				3495980
2344'-TetraCB -(60)	ng/L	0.805	0.0055	0.095				3495980
TetraCB-(61)+(70)+(74)+(76)	ng/L	6.52	0.0055	0.38				3495980
234'5-TetraCB-(63)	ng/L	0.106	0.0051	0.095				3495980
234'6-TetraCB-(64)	ng/L	2.41	0.0011	0.095				3495980
23'44'-TetraCB-(66)	ng/L	3.39	0.0052	0.095				3495980
23'45-TetraCB-(67)	ng/L	0.128	0.0051	0.095				3495980
23'45'-TetraCB-(68)	ng/L	0.0118 J	0.0048	0.095				3495980
23'55'-TetraCB-(72)	ng/L	0.0204 J	0.0049	0.095				3495980

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COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'5'6-TetraCB-(73)	ng/L	0.00093 U	0.00093	0.095				3495980
33'44'-TetraCB-(77)	ng/L	0.462	0.0058	0.095	0.000100	0.0000462		3495980
33'45-TetraCB-(78)	ng/L	0.0056 U	0.0056	0.095				3495980
33'45'-TetraCB(79)	ng/L	0.0584 J	0.0049	0.095				3495980
33'55'-TetraCB-(80)	ng/L	0.0050 U	0.0050	0.095				3495980
344'5-TetraCB-(81)	ng/L	0.0129 J	0.0060	0.095	0.000300	0.00000387		3495980
22'33'4-PentaCB-(82)	ng/L	0.992	0.0023	0.095				3495980
PentaCB-(83)+(99)	ng/L	3.25	0.0020	0.19				3495980
22'33'6-PentaCB-(84)	ng/L	1.88	0.0023	0.095				3495980
PentaCB-(85)+(116)+(117)	ng/L	1.01	0.0017	0.29				3495980
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	5.08	0.0017	0.57				3495980
PentaCB-(88)+(91)	ng/L	0.781	0.0019	0.19				3495980
22'346'-PentaCB-(89)	ng/L	0.0682 J	0.0021	0.095				3495980
PentaCB-(90)+(101)+(113)	ng/L	6.49	0.0017	0.29				3495980
22'355'-PentaCB-(92)	ng/L	1.08	0.0020	0.095				3495980
PentaCB-(93)+(98)+(100)+(102)	ng/L	0.226 J	0.0020	0.38				3495980
22'356'-PentaCB-(94)	ng/L	0.0267 J	0.0020	0.095				3495980
22'35'6-PentaCB-(95)	ng/L	4.66	0.0018	0.095				3495980
22'366'-PentaCB-(96)	ng/L	0.0392 J	0.0019	0.095				3495980
22'45'6-PentaCB-(103)	ng/L	0.0250 J	0.0017	0.095				3495980
22'466'-PentaCB-(104)	ng/L	0.0026 U	0.0026	0.095				3495980
233'44'-PentaCB-(105)	ng/L	3.32	0.0011	0.095	0.0000300	0.0000996		3495980
233'45-PentaCB-(106)	ng/L	0.0011 U	0.0011	0.095				3495980
233'4'5-PentaCB-(107)	ng/L	0.453	0.0010	0.095				3495980
PentaCB-(108)+(124)	ng/L	0.270	0.0011	0.19				3495980
PentaCB-(110)+(115)	ng/L	10.3	0.0016	0.19				3495980
233'55'-PentaCB-(111)	ng/L	0.0014 U	0.0014	0.095				3495980
233'56-PentaCB-(112)	ng/L	0.0016 U	0.0016	0.095				3495980
2344'5-PentaCB-(114)	ng/L	0.141	0.0011	0.095	0.0000300	0.00000423		3495980

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Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'44'5-PentaCB-(118)	ng/L	7.53	0.0012	0.095	0.0000300	0.000226		3495980
23'455'-PentaCB-(120)	ng/L	0.0096 J	0.0014	0.095				3495980
23'45'6-PentaCB-(121)	ng/L	0.0014 U	0.0014	0.095				3495980
233'4'5'-PentaCB-(122)	ng/L	0.0922 J	0.0012	0.095				3495980
23'44'5'-PentaCB-(123)	ng/L	0.0897 J	0.0013	0.095	0.0000300	0.00000269		3495980
33'44'5-PentaCB-(126)	ng/L	0.0353 J	0.0011	0.095	0.100	0.00353		3495980
33'455'-PentaCB-(127)	ng/L	0.0076 U (1)	0.0076	0.095				3495980
HexaCB-(128)+(166)	ng/L	1.78	0.0080	0.19				3495980
HexaCB-(129)+(138)+(163)	ng/L	11.5	0.0087	0.29				3495980
22'33'45'-HexaCB-(130)	ng/L	0.627	0.010	0.095				3495980
22'33'46-HexaCB-(131)	ng/L	0.141	0.011	0.095				3495980
22'33'46'-HexaCB-(132)	ng/L	3.37	0.0094	0.095				3495980
22'33'55'-HexaCB-(133)	ng/L	0.0956	0.0090	0.095				3495980
HexaCB-(134)+(143)	ng/L	0.418	0.010	0.19				3495980
HexaCB-(135)+(151)	ng/L	2.14	0.0010	0.19				3495980
22'33'66'-HexaCB-(136)	ng/L	0.822	0.00077	0.095				3495980
22'344'5-HexaCB-(137)	ng/L	0.544	0.0086	0.095				3495980
HexaCB-(139)+(140)	ng/L	0.144 J	0.0082	0.19				3495980
22'3455'-HexaCB-(141)	ng/L	1.82	0.0096	0.095				3495980
22'3456-HexaCB-(142)	ng/L	0.0096 U	0.0096	0.095				3495980
22'345'6-HexaCB-(144)	ng/L	0.338	0.0010	0.095				3495980
22'3466'-HexaCB-(145)	ng/L	0.0022 U (1)	0.0022	0.095				3495980
22'34'55'-HexaCB-(146)	ng/L	1.11	0.0084	0.095				3495980
HexaCB-(147)+(149)	ng/L	5.96	0.0081	0.19				3495980
22'34'56'-HexaCB-(148)	ng/L	0.0049 J	0.0010	0.095				3495980
22'34'66'-HexaCB-(150)	ng/L	0.00750 J	0.00071	0.095				3495980
22'3566'-HexaCB-(152)	ng/L	0.0052 U (1)	0.0052	0.095				3495980
HexaCB-(153)+(168)	ng/L	6.71	0.0068	0.19				3495980
22'44'56'-HexaCB-(154)	ng/L	0.0490 J	0.00093	0.095				3495980

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	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'44'66'-HexaCB-(155)	ng/L	0.0012 U	0.0012	0.095				3495980
HexaCB-(156)+(157)	ng/L	1.29	0.0055	0.19	0.0000300	0.0000387		3495980
233'44'6-HexaCB-(158)	ng/L	1.07	0.0066	0.095				3495980
233'455'-HexaCB-(159)	ng/L	0.0663 J	0.0062	0.095				3495980
233'456-HexaCB-(160)	ng/L	0.0075 U	0.0075	0.095				3495980
233'45'6-HexaCB-(161)	ng/L	0.0065 U	0.0065	0.095				3495980
233'4'55'-HexaCB-(162)	ng/L	0.0285 J	0.0059	0.095				3495980
233'4'5'6-HexaCB-(164)	ng/L	0.669	0.0074	0.095				3495980
233'55'6-HexaCB-(165)	ng/L	0.0071 U	0.0071	0.095				3495980
23'44'55'-HexaCB-(167)	ng/L	0.412	0.0058	0.095	0.0000300	0.0000124		3495980
33'44'55'-HexaCB-(169)	ng/L	0.0060 U	0.0060	0.095	0.0300	0.000180		3495980
22'33'44'5-HeptaCB-(170)	ng/L	1.73	0.0036	0.095				3495980
HeptaCB-(171)+(173)	ng/L	0.550	0.0048	0.19				3495980
22'33'455'-HeptaCB-(172)	ng/L	0.306	0.0048	0.095				3495980
22'33'456'-HeptaCB-(174)	ng/L	0.0044 U	0.0044	0.095				3495980
22'33'45'6-HeptaCB-(175)	ng/L	0.0769 J	0.0021	0.095				3495980
22'33'466'-HeptaCB-(176)	ng/L	0.198	0.0015	0.095				3495980
22'33'45'6'-HeptaCB-(177)	ng/L	1.03	0.0049	0.095				3495980
22'33'55'6-HeptaCB-(178)	ng/L	0.327	0.0022	0.095				3495980
22'33'566'-HeptaCB-(179)	ng/L	0.664	0.0015	0.095				3495980
HeptaCB-(180)+(193)	ng/L	4.74	0.0037	0.19				3495980
22'344'56-HeptaCB-(181)	ng/L	0.0045 U	0.0045	0.095				3495980
22'344'56'-HeptaCB-(182)	ng/L	0.0021 U	0.0021	0.095				3495980
22'344'5'6-HeptaCB-(183)	ng/L	1.11	0.0037	0.095				3495980
22'344'66'-HeptaCB-(184)	ng/L	0.0014 U	0.0014	0.095				3495980
22'3455'6-HeptaCB-(185)	ng/L	2.19	0.0051	0.095				3495980
22'34566'-HeptaCB-(186)	ng/L	0.0016 U	0.0016	0.095				3495980
22'34'55'6-HeptaCB-(187)	ng/L	2.27	0.0019	0.095				3495980
22'34'566'-HeptaCB-(188)	ng/L	0.0024 U	0.0024	0.095				3495980

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COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'44'55'-HeptaCB-(189)	ng/L	0.073 U (1)	0.073	0.095	0.0000300	0.00000219		3495980
233'44'56-HeptaCB-(190)	ng/L	0.340	0.0039	0.095				3495980
233'44'5'6-HeptaCB-(191)	ng/L	0.0736 J	0.0036	0.095				3495980
233'455'6-HeptaCB-(192)	ng/L	0.0038 U	0.0038	0.095				3495980
22'33'44'55'-OctaCB-(194)	ng/L	1.18	0.011	0.095				3495980
22'33'44'56-OctaCB-(195)	ng/L	0.360	0.011	0.095				3495980
22'33'44'56'-OctaCB-(196)	ng/L	0.642	0.0058	0.095				3495980
22'33'44'66'OctaCB-(197)	ng/L	0.0276 J	0.0034	0.095				3495980
OctaCB-(198)+(199)	ng/L	1.71	0.0057	0.19				3495980
22'33'4566'-OctaCB-(200)	ng/L	0.198	0.0047	0.095				3495980
22'33'45'66'-OctaCB-(201)	ng/L	0.190	0.0039	0.095				3495980
22'33'55'66'-OctaCB-(202)	ng/L	0.352	0.0056	0.095				3495980
22'344'55'6-OctaCB-(203)	ng/L	1.10	0.0054	0.095				3495980
22'344'566'-OctaCB-(204)	ng/L	0.0040 U	0.0040	0.095				3495980
233'44'55'6-OctaCB-(205)	ng/L	0.049 U (1)	0.049	0.095				3495980
22'33'44'55'6-NonaCB-(206)	ng/L	1.25	0.0044	0.095				3495980
22'33'44'566'-NonaCB-(207)	ng/L	0.143	0.0035	0.095				3495980
22'33'455'66'-NonaCB-(208)	ng/L	0.288	0.0040	0.095				3495980
DecaCB-(209)	ng/L	0.306	0.0088	0.095				3495980
Monochlorobiphenyl	ng/L	0.184	0.0035	N/A				3495980
Dichlorobiphenyl	ng/L	5.21	0.035	N/A				3495980
Trichlorobiphenyl	ng/L	28.9	0.0094	N/A				3495980
Tetrachlorobiphenyl	ng/L	37.5	0.0061	N/A				3495980
Pentachlorobiphenyl	ng/L	47.9	0.0026	N/A				3495980
Hexachlorobiphenyl	ng/L	41.1	0.011	N/A				3495980
Heptachlorobiphenyl	ng/L	15.6	0.0070	N/A				3495980
Octachlorobiphenyl	ng/L	5.77	0.011	N/A				3495980
Nonachlorobiphenyl	ng/L	1.68	0.0044	N/A				3495980
Decachlorobiphenyl	ng/L	0.306	0.0088	N/A				3495980

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	**B20-SP1-20140107**	**EDL**	**RDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
Total PCB	ng/L	184	N/A	N/A				3495980
TOTAL TOXIC EQUIVALENCY	ng/L					0.00415		
Surrogate Recovery (%)								
C13-2,44'-TriCB-(28)	%	99						3495980
C13-22'33'44'55'6-NonaCB-(206)	%	109						3495980
C13-22'33'44'5-HeptaCB-(170)	%	114						3495980
C13-22'33'455'66'-NonaCB-(208)	%	128						3495980
C13-22'33'55'66'-OctaCB-(202)	%	127						3495980
C13-22'33'55'6-HeptaCB-(178)	%	111						3495980
C13-22'344'55'-HeptaCB-(180)	%	117						3495980
C13-22'34'566'-HeptaCB-(188)	%	107						3495980
C13-22'44'66'-HexaCB-(155)	%	106						3495980
C13-22'466'-PentaCB-(104)	%	116						3495980
C13-22'66'-TetraCB-(54)	%	87						3495980
C13-22'6-TriCB-(19)	%	75						3495980
C13-22'-DiCB-(4)	%	44						3495980
C13-233'44'55'6-OctaCB-(205)	%	96						3495980
C13-233'44'55'-HeptaCB-(189)	%	96						3495980
C13-233'44'-PentaCB-(105)	%	115						3495980
C13-233'55'-PentaCB-(111)	%	110						3495980
C13-23'44'55'-HexaCB-(167)	%	97						3495980
C13-2344'5-PentaCB-(114)	%	111						3495980
C13-23'44'5-PentaCB-(118)	%	115						3495980
C13-2'344'5-PentaCB-(123)	%	115						3495980
C13-2-MonoCB-(1)	%	29						3495980
C13-33'44'55'-HexaCB-(169)	%	79						3495980
C13-33'44'5-PentaCB-(126)	%	110						3495980
C13-33'44'-TetraCB-(77)	%	108						3495980
C13-344'5-TetraCB-(81)	%	107						3495980

RDL = Reportable Detection Limit
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Report Date: 2014/01/30

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-344'-TriCB-(37)	%	96						3495980
C13-44'-DiCB-(15)	%	92						3495980
C13-4-MonoCB-(3)	%	42						3495980
C13-DecaCB-(209)	%	93						3495980
C13-HexaCB-(156)+(157)	%	96						3495980

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.102	0.0018	0.095				3495980
3-MonoCB-(2)	ng/L	0.0216 J	0.0015	0.095				3495980
4-MonoCB-(3)	ng/L	0.0918 J	0.0017	0.095				3495980
22'-DiCB-(4)	ng/L	2.35	0.0091	0.095				3495980
2,3-DiCB-(5)	ng/L	0.020 U	0.020	0.095				3495980
2,3'-DiCB-(6)	ng/L	0.826	0.019	0.095				3495980
2,4-DiCB-(7)	ng/L	0.128	0.019	0.095				3495980
2,4'-DiCB-(8)	ng/L	4.13	0.018	0.095				3495980
2,5-DiCB-(9)	ng/L	0.218	0.019	0.095				3495980
2,6-DiCB-(10)	ng/L	0.0723 J	0.0061	0.095				3495980
3,3'-DiCB-(11)	ng/L	0.393	0.020	0.095				3495980
DiCB-(12)+(13)	ng/L	0.580	0.020	0.19				3495980
3,5-DiCB-(14)	ng/L	0.019 U	0.019	0.095				3495980
4,4'-DiCB-(15)	ng/L	7.90	0.031	0.095				3495980
22'3-TriCB-(16)	ng/L	10.8	0.012	0.095				3495980
22'4-TriCB-(17)	ng/L	8.27	0.0091	0.095				3495980
TriCB-(18)+(30)	ng/L	16.1	0.0073	0.19				3495980
22'6-TriCB-(19)	ng/L	1.75	0.0093	0.095				3495980
TriCB-(20) + (28)	ng/L	35.2	0.0053	0.19				3495980
TriCB-(21)+(33)	ng/L	17.8	0.0055	0.19				3495980
234'-TriCB-(22)	ng/L	13.1	0.0056	0.095				3495980
235-TriCB-(23)	ng/L	0.0217 J	0.0056	0.095				3495980
236-TriCB-(24)	ng/L	0.0064 U	0.0064	0.095				3495980
23'4-TriCB-(25)	ng/L	2.46	0.0054	0.095				3495980
TriCB-(26)+(29)	ng/L	5.25	0.0054	0.19				3495980
23'6-TriCB-(27)	ng/L	1.48	0.0062	0.095				3495980
24'5-TriCB-(31)	ng/L	27.0	0.0050	0.095				3495980
24'6-TriCB-(32)	ng/L	6.49	0.0058	0.095				3495980
23'5'-TriCB-(34)	ng/L	0.071 U (1)	0.071	0.095				3495980

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'4-TriCB-(35)	ng/L	0.550	0.0057	0.095				3495980
33'5-TriCB-(36)	ng/L	0.0050 U	0.0050	0.095				3495980
344'-TriCB-(37)	ng/L	13.1	0.0068	0.095				3495980
345-TriCB-(38)	ng/L	0.0056 U	0.0056	0.095				3495980
34'5-TriCB-(39)	ng/L	0.133	0.0052	0.095				3495980
TetraCB-(40)+(41)+(71)	ng/L	21.0	0.0045	0.29				3495980
22'34'-TetraCB-(42)	ng/L	12.2	0.0058	0.095				3495980
22'35-TetraCB-(43)	ng/L	1.61	0.0067	0.095				3495980
TetraCB-(44)+(47)+(65)	ng/L	34.8	0.0044	0.29				3495980
TetraCB-(45)+(51)	ng/L	6.37	0.0045	0.19				3495980
22'36'-TetraCB-(46)	ng/L	2.30	0.0055	0.095				3495980
22'45-TetraCB-(48)	ng/L	6.93	0.0043	0.095				3495980
TetraCB-(49)+TetraCB-(69)	ng/L	19.4	0.0041	0.19				3495980
TetraCB-(50)+(53)	ng/L	4.35	0.0043	0.19				3495980
22'55'-TetraCB-(52)	ng/L	33.8	0.0044	0.095				3495980
22'66'-TetraCB-(54)	ng/L	0.0670 J	0.0014	0.095				3495980
233'4-TetraCB-(55)	ng/L	0.0046 U	0.0046	0.095				3495980
233'4'-Tetra CB(56)	ng/L	14.3	0.0051	0.095				3495980
233'5-TetraCB-(57)	ng/L	0.103	0.0045	0.095				3495980
233'5'-TetraCB-(58)	ng/L	0.0044 U	0.0044	0.095				3495980
TetraCB-(59)+(62)+(75)	ng/L	3.12	0.0034	0.29				3495980
2344'-TetraCB -(60)	ng/L	7.47	0.0046	0.095				3495980
TetraCB-(61)+(70)+(74)+(76)	ng/L	45.8	0.0046	0.38				3495980
234'5-TetraCB-(63)	ng/L	0.958	0.0042	0.095				3495980
234'6-TetraCB-(64)	ng/L	17.8	0.0037	0.095				3495980
23'44'-TetraCB-(66)	ng/L	25.1	0.0044	0.095				3495980
23'45-TetraCB-(67)	ng/L	0.913	0.0043	0.095				3495980
23'45'-TetraCB-(68)	ng/L	0.0597 J	0.0040	0.095				3495980
23'55'-TetraCB-(72)	ng/L	0.125	0.0041	0.095				3495980

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Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'5'6-TetraCB-(73)	ng/L	0.0031 U	0.0031	0.095				3495980
33'44'-TetraCB-(77)	ng/L	2.97	0.0049	0.095	0.000100	0.000297		3495980
33'45-TetraCB-(78)	ng/L	0.0047 U	0.0047	0.095				3495980
33'45'-TetraCB(79)	ng/L	0.195	0.0041	0.095				3495980
33'55'-TetraCB-(80)	ng/L	0.0042 U	0.0042	0.095				3495980
344'5-TetraCB-(81)	ng/L	0.124	0.0051	0.095	0.000300	0.0000372		3495980
22'33'4-PentaCB-(82)	ng/L	4.64	0.0089	0.095				3495980
PentaCB-(83)+(99)	ng/L	14.3	0.0075	0.19				3495980
22'33'6-PentaCB-(84)	ng/L	8.51	0.0089	0.095				3495980
PentaCB-(85)+(116)+(117)	ng/L	4.91	0.0065	0.29				3495980
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	21.5	0.0066	0.57				3495980
PentaCB-(88)+(91)	ng/L	4.09	0.0074	0.19				3495980
22'346'-PentaCB-(89)	ng/L	0.473	0.0080	0.095				3495980
PentaCB-(90)+(101)+(113)	ng/L	25.6	0.0065	0.29				3495980
22'355'-PentaCB-(92)	ng/L	4.42	0.0077	0.095				3495980
PentaCB-(93)+(98)+(100)+(102)	ng/L	1.35	0.0077	0.38				3495980
22'356'-PentaCB-(94)	ng/L	0.157	0.0078	0.095				3495980
22'35'6-PentaCB-(95)	ng/L	20.2	0.0070	0.095				3495980
22'366'-PentaCB-(96)	ng/L	0.261	0.0026	0.095				3495980
22'45'6-PentaCB-(103)	ng/L	0.129	0.0067	0.095				3495980
22'466'-PentaCB-(104)	ng/L	0.0037 U	0.0037	0.095				3495980
233'44'-PentaCB-(105)	ng/L	14.4	0.0040	0.095	0.0000300	0.000432		3495980
233'45-PentaCB-(106)	ng/L	0.0037 U	0.0037	0.095				3495980
233'4'5-PentaCB-(107)	ng/L	1.88	0.0036	0.095				3495980
PentaCB-(108)+(124)	ng/L	1.06	0.0037	0.19				3495980
PentaCB-(110)+(115)	ng/L	38.4	0.0063	0.19				3495980
233'55'-PentaCB-(111)	ng/L	0.0055 U	0.0055	0.095				3495980
233'56-PentaCB-(112)	ng/L	0.0062 U	0.0062	0.095				3495980
2344'5-PentaCB-(114)	ng/L	0.770	0.0040	0.095	0.0000300	0.0000231		3495980

RDL = Reportable Detection Limit
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Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'44'5-PentaCB-(118)	ng/L	28.9	0.0040	0.095	0.0000300	0.000867		3495980
23'455'-PentaCB-(120)	ng/L	0.0299 J	0.0055	0.095				3495980
23'45'6-PentaCB-(121)	ng/L	0.0055 U	0.0055	0.095				3495980
233'4'5'-PentaCB-(122)	ng/L	0.409	0.0041	0.095				3495980
23'44'5'-PentaCB-(123)	ng/L	0.407	0.0044	0.095	0.0000300	0.0000122		3495980
33'44'5-PentaCB-(126)	ng/L	0.108	0.0039	0.095	0.100	0.0108		3495980
33'455'-PentaCB-(127)	ng/L	0.030 U (1)	0.030	0.095				3495980
HexaCB-(128)+(166)	ng/L	5.96	0.0059	0.19				3495980
HexaCB-(129)+(138)+(163)	ng/L	41.0	0.0064	0.29				3495980
22'33'45'-HexaCB-(130)	ng/L	2.18	0.0076	0.095				3495980
22'33'46-HexaCB-(131)	ng/L	0.506	0.0078	0.095				3495980
22'33'46'-HexaCB-(132)	ng/L	12.4	0.0070	0.095				3495980
22'33'55'-HexaCB-(133)	ng/L	0.328	0.0067	0.095				3495980
HexaCB-(134)+(143)	ng/L	1.74	0.0075	0.19				3495980
HexaCB-(135)+(151)	ng/L	8.48	0.0021	0.19				3495980
22'33'66'-HexaCB-(136)	ng/L	3.33	0.0016	0.095				3495980
22'344'5-HexaCB-(137)	ng/L	1.40	0.0064	0.095				3495980
HexaCB-(139)+(140)	ng/L	0.505	0.0061	0.19				3495980
22'3455'-HexaCB-(141)	ng/L	7.15	0.0072	0.095				3495980
22'3456-HexaCB-(142)	ng/L	0.0072 U	0.0072	0.095				3495980
22'345'6-HexaCB-(144)	ng/L	1.35	0.0021	0.095				3495980
22'3466'-HexaCB-(145)	ng/L	0.0101 J	0.0016	0.095				3495980
22'34'55'-HexaCB-(146)	ng/L	4.04	0.0062	0.095				3495980
HexaCB-(147)+(149)	ng/L	23.0	0.0061	0.19				3495980
22'34'56'-HexaCB-(148)	ng/L	0.0175 J	0.0021	0.095				3495980
22'34'66'-HexaCB-(150)	ng/L	0.0239 J	0.0014	0.095				3495980
22'3566'-HexaCB-(152)	ng/L	0.021 U (1)	0.021	0.095				3495980
HexaCB-(153)+(168)	ng/L	24.8	0.0050	0.19				3495980
22'44'56'-HexaCB-(154)	ng/L	0.187	0.0019	0.095				3495980

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'44'66'-HexaCB-(155)	ng/L	0.0024 U	0.0024	0.095				3495980
HexaCB-(156)+(157)	ng/L	4.34	0.012	0.19	0.0000300	0.000130		3495980
233'44'6-HexaCB-(158)	ng/L	3.95	0.0049	0.095				3495980
233'455'-HexaCB-(159)	ng/L	0.245	0.013	0.095				3495980
233'456-HexaCB-(160)	ng/L	0.0056 U	0.0056	0.095				3495980
233'45'6-HexaCB-(161)	ng/L	0.0048 U	0.0048	0.095				3495980
233'4'55'-HexaCB-(162)	ng/L	0.107	0.013	0.095				3495980
233'4'5'6-HexaCB-(164)	ng/L	2.81	0.0055	0.095				3495980
233'55'6-HexaCB-(165)	ng/L	0.0053 U	0.0053	0.095				3495980
23'44'55'-HexaCB-(167)	ng/L	1.33	0.013	0.095	0.0000300	0.0000399		3495980
33'44'55'-HexaCB-(169)	ng/L	0.013 U	0.013	0.095	0.0300	0.000390		3495980
22'33'44'5-HeptaCB-(170)	ng/L	6.25	0.0024	0.095				3495980
HeptaCB-(171)+(173)	ng/L	1.97	0.0032	0.19				3495980
22'33'455'-HeptaCB-(172)	ng/L	1.03	0.0032	0.095				3495980
22'33'456'-HeptaCB-(174)	ng/L	6.49	0.0030	0.095				3495980
22'33'45'6-HeptaCB-(175)	ng/L	0.242	0.0027	0.095				3495980
22'33'466'-HeptaCB-(176)	ng/L	0.678	0.0020	0.095				3495980
22'33'45'6'-HeptaCB-(177)	ng/L	3.72	0.0033	0.095				3495980
22'33'55'6-HeptaCB-(178)	ng/L	1.01	0.0029	0.095				3495980
22'33'566'-HeptaCB-(179)	ng/L	2.06	0.0020	0.095				3495980
HeptaCB-(180)+(193)	ng/L	15.1	0.0025	0.19				3495980
22'344'56-HeptaCB-(181)	ng/L	0.0675 J	0.0030	0.095				3495980
22'344'56'-HeptaCB-(182)	ng/L	0.024 U (1)	0.024	0.095				3495980
22'344'5'6-HeptaCB-(183)	ng/L	3.63	0.0025	0.095				3495980
22'344'66'-HeptaCB-(184)	ng/L	0.0042 U (1)	0.0042	0.095				3495980
22'3455'6-HeptaCB-(185)	ng/L	0.0034 U	0.0034	0.095				3495980
22'34566'-HeptaCB-(186)	ng/L	0.0021 U	0.0021	0.095				3495980
22'34'55'6-HeptaCB-(187)	ng/L	6.60	0.0026	0.095				3495980
22'34'566'-HeptaCB-(188)	ng/L	0.0074 U (1)	0.0074	0.095				3495980

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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'44'55'-HeptaCB-(189)	ng/L	0.284	0.015	0.095	0.0000300	0.00000852		3495980
233'44'56-HeptaCB-(190)	ng/L	1.23	0.0026	0.095				3495980
233'44'5'6-HeptaCB-(191)	ng/L	0.235	0.0024	0.095				3495980
233'455'6-HeptaCB-(192)	ng/L	0.0026 U	0.0026	0.095				3495980
22'33'44'55'-OctaCB-(194)	ng/L	3.07	0.0081	0.095				3495980
22'33'44'56-OctaCB-(195)	ng/L	1.08	0.0086	0.095				3495980
22'33'44'56'-OctaCB-(196)	ng/L	1.66	0.0065	0.095				3495980
22'33'44'66'OctaCB-(197)	ng/L	0.0747 J	0.0038	0.095				3495980
OctaCB-(198)+(199)	ng/L	3.77	0.0064	0.19				3495980
22'33'4566'-OctaCB-(200)	ng/L	0.444	0.0053	0.095				3495980
22'33'45'66'-OctaCB-(201)	ng/L	0.383	0.0044	0.095				3495980
22'33'55'66'-OctaCB-(202)	ng/L	0.666	0.0063	0.095				3495980
22'344'55'6-OctaCB-(203)	ng/L	2.34	0.0061	0.095				3495980
22'344'566'-OctaCB-(204)	ng/L	0.0045 U	0.0045	0.095				3495980
233'44'55'6-OctaCB-(205)	ng/L	0.153	0.0059	0.095				3495980
22'33'44'55'6-NonaCB-(206)	ng/L	2.10	0.0060	0.095				3495980
22'33'44'566'-NonaCB-(207)	ng/L	0.228	0.0047	0.095				3495980
22'33'455'66'-NonaCB-(208)	ng/L	0.514	0.0054	0.095				3495980
DecaCB-(209)	ng/L	0.964	0.0082	0.095				3495980
Monochlorobiphenyl	ng/L	0.215	0.0018	N/A				3495980
Dichlorobiphenyl	ng/L	16.6	0.031	N/A				3495980
Trichlorobiphenyl	ng/L	160	0.012	N/A				3495980
Tetrachlorobiphenyl	ng/L	262	0.0067	N/A				3495980
Pentachlorobiphenyl	ng/L	197	0.0089	N/A				3495980
Hexachlorobiphenyl	ng/L	151	0.013	N/A				3495980
Heptachlorobiphenyl	ng/L	50.6	0.015	N/A				3495980
Octachlorobiphenyl	ng/L	13.6	0.0087	N/A				3495980
Nonachlorobiphenyl	ng/L	2.84	0.0060	N/A				3495980
Decachlorobiphenyl	ng/L	0.964	0.0082	N/A				3495980

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	**B18-SP1-20140107**	**EDL**	**RDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
Total PCB	ng/L	854	N/A	N/A				3495980
TOTAL TOXIC EQUIVALENCY	ng/L					0.0130		
Surrogate Recovery (%)								
C13-2,44'-TriCB-(28)	%	102						3495980
C13-22'33'44'55'6-NonaCB-(206)	%	120						3495980
C13-22'33'44'5-HeptaCB-(170)	%	112						3495980
C13-22'33'455'66'-NonaCB-(208)	%	134						3495980
C13-22'33'55'66'-OctaCB-(202)	%	126						3495980
C13-22'33'55'6-HeptaCB-(178)	%	118						3495980
C13-22'344'55'-HeptaCB-(180)	%	117						3495980
C13-22'34'566'-HeptaCB-(188)	%	108						3495980
C13-22'44'66'-HexaCB-(155)	%	110						3495980
C13-22'466'-PentaCB-(104)	%	120						3495980
C13-22'66'-TetraCB-(54)	%	100						3495980
C13-22'6-TriCB-(19)	%	103						3495980
C13-22'-DiCB-(4)	%	82						3495980
C13-233'44'55'6-OctaCB-(205)	%	100						3495980
C13-233'44'55'-HeptaCB-(189)	%	99						3495980
C13-233'44'-PentaCB-(105)	%	113						3495980
C13-233'55'-PentaCB-(111)	%	113						3495980
C13-23'44'55'-HexaCB-(167)	%	98						3495980
C13-2344'5-PentaCB-(114)	%	109						3495980
C13-23'44'5-PentaCB-(118)	%	113						3495980
C13-2'344'5-PentaCB-(123)	%	112						3495980
C13-2-MonoCB-(1)	%	61						3495980
C13-33'44'55'-HexaCB-(169)	%	32						3495980
C13-33'44'5-PentaCB-(126)	%	91						3495980
C13-33'44'-TetraCB-(77)	%	103						3495980
C13-344'5-TetraCB-(81)	%	105						3495980

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-344'-TriCB-(37)	%	99						3495980
C13-44'-DiCB-(15)	%	101						3495980
C13-4-MonoCB-(3)	%	67						3495980
C13-DecaCB-(209)	%	88						3495980
C13-HexaCB-(156)+(157)	%	98						3495980

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.202	0.00087	0.095				3495980
3-MonoCB-(2)	ng/L	0.0307 J	0.00073	0.095				3495980
4-MonoCB-(3)	ng/L	0.166	0.00082	0.095				3495980
22'-DiCB-(4)	ng/L	5.60	0.015	0.095				3495980
2,3-DiCB-(5)	ng/L	0.16 U (1)	0.16	0.095				3495980
2,3'-DiCB-(6)	ng/L	2.37	0.022	0.095				3495980
2,4-DiCB-(7)	ng/L	0.354	0.022	0.095				3495980
2,4'-DiCB-(8)	ng/L	11.6	0.022	0.095				3495980
2,5-DiCB-(9)	ng/L	0.576	0.022	0.095				3495980
2,6-DiCB-(10)	ng/L	0.303	0.010	0.095				3495980
3,3'-DiCB-(11)	ng/L	0.758	0.023	0.095				3495980
DiCB-(12)+(13)	ng/L	1.45	0.023	0.19				3495980
3,5-DiCB-(14)	ng/L	0.022 U	0.022	0.095				3495980
4,4'-DiCB-(15)	ng/L	25.8	0.037	0.095				3495980
22'3-TriCB-(16)	ng/L	26.6	0.011	0.095				3495980
22'4-TriCB-(17)	ng/L	20.0	0.0088	0.095				3495980
TriCB-(18)+(30)	ng/L	41.7	0.0070	0.19				3495980
22'6-TriCB-(19)	ng/L	7.04	0.0089	0.095				3495980
TriCB-(20) + (28)	ng/L	79.6	0.0040	0.19				3495980
TriCB-(21)+(33)	ng/L	38.0	0.0042	0.19				3495980
234'-TriCB-(22)	ng/L	27.7	0.0043	0.095				3495980
235-TriCB-(23)	ng/L	0.0533 J	0.0043	0.095				3495980
236-TriCB-(24)	ng/L	0.0062 U	0.0062	0.095				3495980
23'4-TriCB-(25)	ng/L	6.03	0.0042	0.095				3495980
TriCB-(26)+(29)	ng/L	13.4	0.0042	0.19				3495980
23'6-TriCB-(27)	ng/L	5.02	0.0059	0.095				3495980
24'5-TriCB-(31)	ng/L	56.9	0.0039	0.095				3495980
24'6-TriCB-(32)	ng/L	18.5	0.0055	0.095				3495980
23'5'-TriCB-(34)	ng/L	0.179	0.0042	0.095				3495980

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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'4-TriCB-(35)	ng/L	1.51	0.0044	0.095				3495980
33'5-TriCB-(36)	ng/L	0.0039 U	0.0039	0.095				3495980
344'-TriCB-(37)	ng/L	27.3	0.0052	0.095				3495980
345-TriCB-(38)	ng/L	0.0537 J	0.0043	0.095				3495980
34'5-TriCB-(39)	ng/L	0.376	0.0040	0.095				3495980
TetraCB-(40)+(41)+(71)	ng/L	55.5	0.0013	0.29				3495980
22'34'-TetraCB-(42)	ng/L	34.2	0.0017	0.095				3495980
22'35-TetraCB-(43)	ng/L	4.67	0.0019	0.095				3495980
TetraCB-(44)+(47)+(65)	ng/L	104	0.0013	0.29				3495980
TetraCB-(45)+(51)	ng/L	19.3	0.0013	0.19				3495980
22'36'-TetraCB-(46)	ng/L	7.37	0.0016	0.095				3495980
22'45-TetraCB-(48)	ng/L	17.7	0.0013	0.095				3495980
TetraCB-(49)+TetraCB-(69)	ng/L	55.7	0.0012	0.19				3495980
TetraCB-(50)+(53)	ng/L	13.3	0.0013	0.19				3495980
22'55'-TetraCB-(52)	ng/L	112	0.0013	0.095				3495980
22'66'-TetraCB-(54)	ng/L	0.202	0.0018	0.095				3495980
233'4-TetraCB-(55)	ng/L	0.503	0.015	0.095				3495980
233'4'-Tetra CB(56)	ng/L	24.7	0.016	0.095				3495980
233'5-TetraCB-(57)	ng/L	0.014 U	0.014	0.095				3495980
233'5'-TetraCB-(58)	ng/L	0.014 U	0.014	0.095				3495980
TetraCB-(59)+(62)+(75)	ng/L	9.08	0.00098	0.29				3495980
2344'-TetraCB -(60)	ng/L	10.4	0.015	0.095				3495980
TetraCB-(61)+(70)+(74)+(76)	ng/L	97.2	0.015	0.38				3495980
234'5-TetraCB-(63)	ng/L	1.66	0.014	0.095				3495980
234'6-TetraCB-(64)	ng/L	42.8	0.0011	0.095				3495980
23'44'-TetraCB-(66)	ng/L	47.9	0.014	0.095				3495980
23'45-TetraCB-(67)	ng/L	1.92	0.014	0.095				3495980
23'45'-TetraCB-(68)	ng/L	0.174	0.013	0.095				3495980
23'55'-TetraCB-(72)	ng/L	0.357	0.013	0.095				3495980

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'5'6-TetraCB-(73)	ng/L	0.00089 U	0.00089	0.095				3495980
33'44'-TetraCB-(77)	ng/L	6.15	0.016	0.095	0.000100	0.000615		3495980
33'45-TetraCB-(78)	ng/L	0.015 U	0.015	0.095				3495980
33'45'-TetraCB(79)	ng/L	0.802	0.013	0.095				3495980
33'55'-TetraCB-(80)	ng/L	0.013 U	0.013	0.095				3495980
344'5-TetraCB-(81)	ng/L	0.182	0.016	0.095	0.000300	0.0000546		3495980
22'33'4-PentaCB-(82)	ng/L	16.0	0.013	0.095				3495980
PentaCB-(83)+(99)	ng/L	54.1	0.011	0.19				3495980
22'33'6-PentaCB-(84)	ng/L	34.2	0.013	0.095				3495980
PentaCB-(85)+(116)+(117)	ng/L	17.8	0.0096	0.29				3495980
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	83.6	0.0097	0.57				3495980
PentaCB-(88)+(91)	ng/L	14.4	0.011	0.19				3495980
22'346'-PentaCB-(89)	ng/L	1.20	0.012	0.095				3495980
PentaCB-(90)+(101)+(113)	ng/L	107	0.0096	0.29				3495980
22'355'-PentaCB-(92)	ng/L	19.1	0.011	0.095				3495980
PentaCB-(93)+(98)+(100)+(102)	ng/L	4.29	0.011	0.38				3495980
22'356'-PentaCB-(94)	ng/L	0.512	0.011	0.095				3495980
22'35'6-PentaCB-(95)	ng/L	82.5	0.010	0.095				3495980
22'366'-PentaCB-(96)	ng/L	0.825	0.0061	0.095				3495980
22'45'6-PentaCB-(103)	ng/L	0.448	0.0098	0.095				3495980
22'466'-PentaCB-(104)	ng/L	0.0086 U	0.0086	0.095				3495980
233'44'-PentaCB-(105)	ng/L	49.5	0.0041	0.095	0.0000300	0.00149		3495980
233'45-PentaCB-(106)	ng/L	0.0039 U	0.0039	0.095				3495980
233'4'5-PentaCB-(107)	ng/L	7.29	0.0037	0.095				3495980
PentaCB-(108)+(124)	ng/L	4.60	0.0038	0.19				3495980
PentaCB-(110)+(115)	ng/L	154	0.0093	0.19				3495980
233'55'-PentaCB-(111)	ng/L	0.0081 U	0.0081	0.095				3495980
233'56-PentaCB-(112)	ng/L	0.0091 U	0.0091	0.095				3495980
2344'5-PentaCB-(114)	ng/L	2.32	0.0041	0.095	0.0000300	0.0000696		3495980

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Apex Laboratories
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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'44'5-PentaCB-(118)	ng/L	115	0.0041	0.095	0.0000300	0.00345		3495980
23'455'-PentaCB-(120)	ng/L	0.066 U (1)	0.066	0.095				3495980
23'45'6-PentaCB-(121)	ng/L	0.0081 U	0.0081	0.095				3495980
233'4'5'-PentaCB-(122)	ng/L	1.42	0.0042	0.095				3495980
23'44'5'-PentaCB-(123)	ng/L	1.44	0.0045	0.095	0.0000300	0.0000432		3495980
33'44'5-PentaCB-(126)	ng/L	0.208	0.0040	0.095	0.100	0.0208		3495980
33'455'-PentaCB-(127)	ng/L	0.170	0.0039	0.095				3495980
HexaCB-(128)+(166)	ng/L	28.9	0.0070	0.19				3495980
HexaCB-(129)+(138)+(163)	ng/L	168	0.0077	0.29				3495980
22'33'45'-HexaCB-(130)	ng/L	10.4	0.0091	0.095				3495980
22'33'46-HexaCB-(131)	ng/L	2.47	0.0093	0.095				3495980
22'33'46'-HexaCB-(132)	ng/L	53.8	0.0083	0.095				3495980
22'33'55'-HexaCB-(133)	ng/L	1.43	0.0080	0.095				3495980
HexaCB-(134)+(143)	ng/L	7.65	0.0089	0.19				3495980
HexaCB-(135)+(151)	ng/L	32.7	0.0014	0.19				3495980
22'33'66'-HexaCB-(136)	ng/L	14.1	0.0010	0.095				3495980
22'344'5-HexaCB-(137)	ng/L	9.00	0.0076	0.095				3495980
HexaCB-(139)+(140)	ng/L	2.48	0.0073	0.19				3495980
22'3455'-HexaCB-(141)	ng/L	28.1	0.0085	0.095				3495980
22'3456-HexaCB-(142)	ng/L	0.0085 U	0.0085	0.095				3495980
22'345'6-HexaCB-(144)	ng/L	5.20	0.0014	0.095				3495980
22'3466'-HexaCB-(145)	ng/L	0.0446 J	0.0011	0.095				3495980
22'34'55'-HexaCB-(146)	ng/L	16.9	0.0074	0.095				3495980
HexaCB-(147)+(149)	ng/L	91.8	0.0072	0.19				3495980
22'34'56'-HexaCB-(148)	ng/L	0.0566 J	0.0014	0.095				3495980
22'34'66'-HexaCB-(150)	ng/L	0.0921 J	0.00096	0.095				3495980
22'3566'-HexaCB-(152)	ng/L	0.092 U (1)	0.092	0.095				3495980
HexaCB-(153)+(168)	ng/L	95.6	0.0060	0.19				3495980
22'44'56'-HexaCB-(154)	ng/L	0.717	0.0013	0.095				3495980

RDL = Reportable Detection Limit
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QC Batch = Quality Control Batch
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The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'44'66'-HexaCB-(155)	ng/L	0.0016 U	0.0016	0.095				3495980
HexaCB-(156)+(157)	ng/L	20.0	0.0037	0.19	0.0000300	0.000600		3495980
233'44'6-HexaCB-(158)	ng/L	17.6	0.0059	0.095				3495980
233'455'-HexaCB-(159)	ng/L	0.905	0.0041	0.095				3495980
233'456-HexaCB-(160)	ng/L	0.0066 U	0.0066	0.095				3495980
233'45'6-HexaCB-(161)	ng/L	0.0058 U	0.0058	0.095				3495980
233'4'55'-HexaCB-(162)	ng/L	0.541	0.0039	0.095				3495980
233'4'5'6-HexaCB-(164)	ng/L	11.0	0.0066	0.095				3495980
233'55'6-HexaCB-(165)	ng/L	0.0063 U	0.0063	0.095				3495980
23'44'55'-HexaCB-(167)	ng/L	6.15	0.0039	0.095	0.0000300	0.000185		3495980
33'44'55'-HexaCB-(169)	ng/L	0.0040 U	0.0040	0.095	0.0300	0.000120		3495980
22'33'44'5-HeptaCB-(170)	ng/L	19.4	0.0051	0.095				3495980
HeptaCB-(171)+(173)	ng/L	6.29	0.0067	0.19				3495980
22'33'455'-HeptaCB-(172)	ng/L	3.46	0.0067	0.095				3495980
22'33'456'-HeptaCB-(174)	ng/L	0.0062 U	0.0062	0.095				3495980
22'33'45'6-HeptaCB-(175)	ng/L	0.915	0.0029	0.095				3495980
22'33'466'-HeptaCB-(176)	ng/L	2.37	0.0022	0.095				3495980
22'33'45'6'-HeptaCB-(177)	ng/L	11.9	0.0069	0.095				3495980
22'33'55'6-HeptaCB-(178)	ng/L	4.13	0.0030	0.095				3495980
22'33'566'-HeptaCB-(179)	ng/L	8.65	0.0021	0.095				3495980
HeptaCB-(180)+(193)	ng/L	57.4	0.0051	0.19				3495980
22'344'56-HeptaCB-(181)	ng/L	0.288	0.0063	0.095				3495980
22'344'56'-HeptaCB-(182)	ng/L	0.0981	0.0029	0.095				3495980
22'344'5'6-HeptaCB-(183)	ng/L	14.4	0.0052	0.095				3495980
22'344'66'-HeptaCB-(184)	ng/L	0.0232 J	0.0020	0.095				3495980
22'3455'6-HeptaCB-(185)	ng/L	26.2	0.0071	0.095				3495980
22'34566'-HeptaCB-(186)	ng/L	0.0022 U	0.0022	0.095				3495980
22'34'55'6-HeptaCB-(187)	ng/L	33.6	0.0027	0.095				3495980
22'34'566'-HeptaCB-(188)	ng/L	0.0738 J	0.0034	0.095				3495980

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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'44'55'-HeptaCB-(189)	ng/L	0.860	0.0054	0.095	0.0000300	0.0000258		3495980
233'44'56-HeptaCB-(190)	ng/L	3.96	0.0055	0.095				3495980
233'44'5'6-HeptaCB-(191)	ng/L	0.691	0.0050	0.095				3495980
233'455'6-HeptaCB-(192)	ng/L	0.10 U (1)	0.10	0.095				3495980
22'33'44'55'-OctaCB-(194)	ng/L	26.2	0.0051	0.095				3495980
22'33'44'56-OctaCB-(195)	ng/L	5.24	0.0054	0.095				3495980
22'33'44'56'-OctaCB-(196)	ng/L	13.3	0.0047	0.095				3495980
22'33'44'66'OctaCB-(197)	ng/L	0.525	0.0028	0.095				3495980
OctaCB-(198)+(199)	ng/L	44.3	0.0046	0.19				3495980
22'33'4566'-OctaCB-(200)	ng/L	4.02	0.0038	0.095				3495980
22'33'45'66'-OctaCB-(201)	ng/L	4.09	0.0032	0.095				3495980
22'33'55'66'-OctaCB-(202)	ng/L	9.89	0.0045	0.095				3495980
22'344'55'6-OctaCB-(203)	ng/L	29.6	0.0044	0.095				3495980
22'344'566'-OctaCB-(204)	ng/L	0.026 U (1)	0.026	0.095				3495980
233'44'55'6-OctaCB-(205)	ng/L	0.713	0.0037	0.095				3495980
22'33'44'55'6-NonaCB-(206)	ng/L	44.1	0.0084	0.095				3495980
22'33'44'566'-NonaCB-(207)	ng/L	4.01	0.0066	0.095				3495980
22'33'455'66'-NonaCB-(208)	ng/L	9.78	0.0077	0.095				3495980
DecaCB-(209)	ng/L	5.56	0.0082	0.095				3495980
Monochlorobiphenyl	ng/L	0.399	0.00087	N/A				3495980
Dichlorobiphenyl	ng/L	48.8	0.037	N/A				3495980
Trichlorobiphenyl	ng/L	370	0.011	N/A				3495980
Tetrachlorobiphenyl	ng/L	668	0.016	N/A				3495980
Pentachlorobiphenyl	ng/L	772	0.013	N/A				3495980
Hexachlorobiphenyl	ng/L	626	0.0093	N/A				3495980
Heptachlorobiphenyl	ng/L	195	0.0071	N/A				3495980
Octachlorobiphenyl	ng/L	138	0.0054	N/A				3495980
Nonachlorobiphenyl	ng/L	57.8	0.0084	N/A				3495980
Decachlorobiphenyl	ng/L	5.56	0.0082	N/A				3495980

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QC Batch = Quality Control Batch
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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	**B19-SP-19-1-20140107**	**EDL**	**RDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
Total PCB	ng/L	2880	N/A	N/A				3495980
TOTAL TOXIC EQUIVALENCY	ng/L					0.0275		
Surrogate Recovery (%)								
C13-2,44'-TriCB-(28)	%	104						3495980
C13-22'33'44'55'6-NonaCB-(206)	%	115						3495980
C13-22'33'44'5-HeptaCB-(170)	%	108						3495980
C13-22'33'455'66'-NonaCB-(208)	%	125						3495980
C13-22'33'55'66'-OctaCB-(202)	%	120						3495980
C13-22'33'55'6-HeptaCB-(178)	%	110						3495980
C13-22'344'55'-HeptaCB-(180)	%	112						3495980
C13-22'34'566'-HeptaCB-(188)	%	103						3495980
C13-22'44'66'-HexaCB-(155)	%	105						3495980
C13-22'466'-PentaCB-(104)	%	117						3495980
C13-22'66'-TetraCB-(54)	%	98						3495980
C13-22'6-TriCB-(19)	%	97						3495980
C13-22'-DiCB-(4)	%	83						3495980
C13-233'44'55'6-OctaCB-(205)	%	99						3495980
C13-233'44'55'-HeptaCB-(189)	%	94						3495980
C13-233'44'-PentaCB-(105)	%	113						3495980
C13-233'55'-PentaCB-(111)	%	111						3495980
C13-23'44'55'-HexaCB-(167)	%	94						3495980
C13-2344'5-PentaCB-(114)	%	108						3495980
C13-23'44'5-PentaCB-(118)	%	113						3495980
C13-2'344'5-PentaCB-(123)	%	112						3495980
C13-2-MonoCB-(1)	%	66						3495980
C13-33'44'55'-HexaCB-(169)	%	31						3495980
C13-33'44'5-PentaCB-(126)	%	90						3495980
C13-33'44'-TetraCB-(77)	%	105						3495980
C13-344'5-TetraCB-(81)	%	106						3495980

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-344'-TriCB-(37)	%	99						3495980
C13-44'-DiCB-(15)	%	102						3495980
C13-4-MonoCB-(3)	%	67						3495980
C13-DecaCB-(209)	%	88						3495980
C13-HexaCB-(156)+(157)	%	95						3495980

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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Report Date: 2014/01/30

Apex Laboratories
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Package 1	3.5°C
Package 2	3.5°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

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Apex Laboratories
Attention: Philip Nerenberg
Client Project #: A4A0131
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB403971

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3482485	KKS	Spiked Blank	C13-1234678 HeptaCDD	2014/01/17		88	%	40 - 135
			C13-1234678 HeptaCDF	2014/01/17		90	%	40 - 135
			C13-123478 HexaCDF	2014/01/17		85	%	40 - 135
			C13-123678 HexaCDD	2014/01/17		91	%	40 - 135
			C13-12378 PentaCDD	2014/01/17		56	%	40 - 135
			C13-12378 PentaCDF	2014/01/17		50	%	40 - 135
			C13-2378 TetraCDD	2014/01/17		71	%	40 - 135
			C13-2378 TetraCDF	2014/01/17		60	%	40 - 135
			C13-OCDD	2014/01/17		94	%	40 - 135
			2,3,7,8-Tetra CDD	2014/01/17		90	%	80 - 140
			1,2,3,7,8-Penta CDD	2014/01/17		106	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2014/01/17		101	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2014/01/17		90	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2014/01/17		106	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2014/01/17		93	%	80 - 140
			Octa CDD	2014/01/17		89	%	80 - 140
			2,3,7,8-Tetra CDF	2014/01/17		87	%	80 - 140
			1,2,3,7,8-Penta CDF	2014/01/17		95	%	80 - 140
			2,3,4,7,8-Penta CDF	2014/01/17		108	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2014/01/17		93	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2014/01/17		89	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2014/01/17		94	%	80 - 140
			1,2,3,7,8,9-Hexa CDF	2014/01/17		105	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2014/01/17		90	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2014/01/17		91	%	80 - 140
			Octa CDF	2014/01/17		80	%	80 - 140
		Method Blank	C13-1234678 HeptaCDD	2014/01/17		82	%	40 - 135
			C13-1234678 HeptaCDF	2014/01/17		81	%	40 - 135
			C13-123478 HexaCDF	2014/01/17		75	%	40 - 135
			C13-123678 HexaCDD	2014/01/17		84	%	40 - 135
			C13-12378 PentaCDD	2014/01/17		57	%	40 - 135
			C13-12378 PentaCDF	2014/01/17		49	%	40 - 135
			C13-2378 TetraCDD	2014/01/17		64	%	40 - 135
			C13-2378 TetraCDF	2014/01/17		52	%	40 - 135
			C13-OCDD	2014/01/17		91	%	40 - 135
			2,3,7,8-Tetra CDD	2014/01/17	0.93 U, EDL=0.93		pg/L	
			1,2,3,7,8-Penta CDD	2014/01/17	0.91 U, EDL=0.91		pg/L	
			1,2,3,4,7,8-Hexa CDD	2014/01/17	1.1 U, EDL=1.1		pg/L	
			1,2,3,6,7,8-Hexa CDD	2014/01/17	1.0 U, EDL=1.0		pg/L	
			1,2,3,7,8,9-Hexa CDD	2014/01/17	0.99 U, EDL=0.99		pg/L	
			1,2,3,4,6,7,8-Hepta CDD	2014/01/17	1.3 J, EDL=1.0		pg/L	
			Octa CDD	2014/01/17	2.4 J, EDL=1.2		pg/L	
			Total Tetra CDD	2014/01/17	0.93 U, EDL=0.93		pg/L	
			Total Penta CDD	2014/01/17	0.91 U, EDL=0.91		pg/L	
			Total Hexa CDD	2014/01/17	1.0 U, EDL=1.0		pg/L	
			Total Hepta CDD	2014/01/17	1.3 J, EDL=1.0		pg/L	
			2,3,7,8-Tetra CDF	2014/01/17	0.73 U, EDL=0.73		pg/L	
			1,2,3,7,8-Penta CDF	2014/01/17	0.89 U, EDL=0.89		pg/L	
			2,3,4,7,8-Penta CDF	2014/01/17	0.90 U, EDL=0.90		pg/L	
			1,2,3,4,7,8-Hexa CDF	2014/01/17	0.99 U, EDL=0.99		pg/L	
			1,2,3,6,7,8-Hexa CDF	2014/01/17	0.97 U, EDL=0.97		pg/L	
			2,3,4,6,7,8-Hexa CDF	2014/01/17	1.1 U, EDL=1.1		pg/L	
			1,2,3,7,8,9-Hexa CDF	2014/01/17	1.2 U, EDL=1.2		pg/L	
			1,2,3,4,6,7,8-Hepta CDF	2014/01/17	0.89 U, EDL=0.89		pg/L	
			1,2,3,4,7,8,9-Hepta CDF	2014/01/17	1.1 U, EDL=1.1		pg/L	

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Apex Laboratories
Attention: Philip Nerenberg
Client Project #: A4A0131
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB403971

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3482485	KKS	Method Blank	Octa CDF	2014/01/17	1.7 J, EDL=1.2		pg/L	
			Total Tetra CDF	2014/01/17	0.73 U, EDL=0.73		pg/L	
			Total Penta CDF	2014/01/17	0.89 U, EDL=0.89		pg/L	
			Total Hexa CDF	2014/01/17	1.1 U, EDL=1.1		pg/L	
			Total Hepta CDF	2014/01/17	1.0 U, EDL=1.0		pg/L	
3486957	KKS	Method Blank	Confirmation C13-2378 TetraCDF	2014/01/17		61	%	40 - 135
			Confirmation 2,3,7,8-Tetra CDF	2014/01/17	0.48 U, EDL=0.48		pg/L	
3495980	BY	Spiked Blank	C13-2,44'-TriCB-(28)	2014/01/28		79	%	40 - 125
			C13-22'33'44'55'6-NonaCB-(206)	2014/01/28		120	%	30 - 140
			C13-22'33'44'5-HeptaCB-(170)	2014/01/28		100	%	30 - 140
			C13-22'33'455'66'-NonaCB-(208)	2014/01/28		125	%	30 - 140
			C13-22'33'55'66'-OctaCB-(202)	2014/01/28		113	%	30 - 140
			C13-22'33'55'6-HeptaCB-(178)	2014/01/28		121	%	40 - 125
			C13-22'344'55'-HeptaCB-(180)	2014/01/28		102	%	30 - 140
			C13-22'34'566'-HeptaCB-(188)	2014/01/28		107	%	30 - 140
			C13-22'44'66'-HexaCB-(155)	2014/01/28		100	%	30 - 140
			C13-22'466'-PentaCB-(104)	2014/01/28		101	%	30 - 140
			C13-22'66'-TetraCB-(54)	2014/01/28		69	%	30 - 140
			C13-22'6-TriCB-(19)	2014/01/28		67	%	30 - 140
			C13-22'-DiCB-(4)	2014/01/28		48	%	30 - 140
			C13-233'44'55'6-OctaCB-(205)	2014/01/28		101	%	30 - 140
			C13-233'44'55'-HeptaCB-(189)	2014/01/28		91	%	30 - 140
			C13-233'44'-PentaCB-(105)	2014/01/28		107	%	30 - 140
			C13-233'55'-PentaCB-(111)	2014/01/28		108	%	40 - 125
			C13-23'44'55'-HexaCB-(167)	2014/01/28		95	%	30 - 140
			C13-2344'5-PentaCB-(114)	2014/01/28		104	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2014/01/28		104	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2014/01/28		106	%	30 - 140
			C13-2-MonoCB-(1)	2014/01/28		35	%	15 - 140
			C13-33'44'55'-HexaCB-(169)	2014/01/28		38	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2014/01/28		93	%	30 - 140
			C13-33'44'-TetraCB-(77)	2014/01/28		93	%	30 - 140
			C13-344'5-TetraCB-(81)	2014/01/28		91	%	30 - 140
			C13-344'-TriCB-(37)	2014/01/28		76	%	30 - 140
			C13-44'-DiCB-(15)	2014/01/28		74	%	30 - 140
			C13-4-MonoCB-(3)	2014/01/28		39	%	15 - 140
			C13-DecaCB-(209)	2014/01/28		106	%	30 - 140
			C13-HexaCB-(156)+(157)	2014/01/28		96	%	30 - 140
			2-MonoCB-(1)	2014/01/28		102	%	50 - 150
			4-MonoCB-(3)	2014/01/28		100	%	50 - 150
			22'-DiCB-(4)	2014/01/28		94	%	50 - 150
			4,4'-DiCB-(15)	2014/01/28		98	%	50 - 150
			22'6-TriCB-(19)	2014/01/28		95	%	50 - 150
			235-TriCB-(23)	2014/01/28		91	%	50 - 150
			23'5'-TriCB-(34)	2014/01/28		87	%	50 - 150
			344'-TriCB-(37)	2014/01/28		100	%	50 - 150
			22'66'-TetraCB-(54)	2014/01/28		101	%	50 - 150
			33'44'-TetraCB-(77)	2014/01/28		97	%	50 - 150
			344'5-TetraCB-(81)	2014/01/28		97	%	50 - 150
			22'466'-PentaCB-(104)	2014/01/28		94	%	50 - 150
			233'44'-PentaCB-(105)	2014/01/28		93	%	50 - 150
			2344'5-PentaCB-(114)	2014/01/28		94	%	50 - 150
			23'44'5-PentaCB-(118)	2014/01/28		95	%	50 - 150
			23'44'5'-PentaCB-(123)	2014/01/28		95	%	50 - 150
			33'44'5-PentaCB-(126)	2014/01/28		91	%	50 - 150

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Apex Laboratories
Attention: Philip Nerenberg
Client Project #: A4A0131
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Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB403971

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3495980	BY	Spiked Blank	22'44'66'-HexaCB-(155)	2014/01/28		88	%	50 - 150
			HexaCB-(156)+(157)	2014/01/28		95	%	50 - 150
			23'44'55'-HexaCB-(167)	2014/01/28		95	%	50 - 150
			33'44'55'-HexaCB-(169)	2014/01/28		98	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2014/01/28		90	%	50 - 150
			HeptaCB-(180)+(193)	2014/01/28		82	%	50 - 150
			22'344'56'-HeptaCB-(182)	2014/01/28		87	%	50 - 150
			22'34'55'6-HeptaCB-(187)	2014/01/28		85	%	50 - 150
			22'34'566'-HeptaCB-(188)	2014/01/28		92	%	50 - 150
			233'44'55'-HeptaCB-(189)	2014/01/28		93	%	50 - 150
			22'33'55'66'-OctaCB-(202)	2014/01/28		92	%	50 - 150
			233'44'55'6-OctaCB-(205)	2014/01/28		93	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2014/01/28		87	%	50 - 150
			22'33'455'66'-NonaCB-(208)	2014/01/28		86	%	50 - 150
			DecaCB-(209)	2014/01/28		83	%	50 - 150
		Method Blank	C13-2,44'-TriCB-(28)	2014/01/28		64	%	40 - 125
			C13-22'33'44'55'6-NonaCB-(206)	2014/01/28		122	%	30 - 140
			C13-22'33'44'5-HeptaCB-(170)	2014/01/28		99	%	30 - 140
			C13-22'33'455'66'-NonaCB-(208)	2014/01/28		127	%	30 - 140
			C13-22'33'55'66'-OctaCB-(202)	2014/01/28		111	%	30 - 140
			C13-22'33'55'6-HeptaCB-(178)	2014/01/28		121	%	40 - 125
			C13-22'344'55'-HeptaCB-(180)	2014/01/28		101	%	30 - 140
			C13-22'34'566'-HeptaCB-(188)	2014/01/28		101	%	30 - 140
			C13-22'44'66'-HexaCB-(155)	2014/01/28		82	%	30 - 140
			C13-22'466'-PentaCB-(104)	2014/01/28		80	%	30 - 140
			C13-22'66'-TetraCB-(54)	2014/01/28		52	%	30 - 140
			C13-22'6-TriCB-(19)	2014/01/28		49	%	30 - 140
			C13-22'-DiCB-(4)	2014/01/28		32	%	30 - 140
			C13-233'44'55'6-OctaCB-(205)	2014/01/28		100	%	30 - 140
			C13-233'44'55'-HeptaCB-(189)	2014/01/28		94	%	30 - 140
			C13-233'44'-PentaCB-(105)	2014/01/28		110	%	30 - 140
			C13-233'55'-PentaCB-(111)	2014/01/28		102	%	40 - 125
			C13-23'44'55'-HexaCB-(167)	2014/01/28		95	%	30 - 140
			C13-2344'5-PentaCB-(114)	2014/01/28		103	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2014/01/28		105	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2014/01/28		102	%	30 - 140
			C13-2-MonoCB-(1)	2014/01/28		23	%	15 - 140
			C13-33'44'55'-HexaCB-(169)	2014/01/28		26 (1)	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2014/01/28		92	%	30 - 140
			C13-33'44'-TetraCB-(77)	2014/01/28		93	%	30 - 140
			C13-344'5-TetraCB-(81)	2014/01/28		91	%	30 - 140
			C13-344'-TriCB-(37)	2014/01/28		67	%	30 - 140
			C13-44'-DiCB-(15)	2014/01/28		55	%	30 - 140
			C13-4-MonoCB-(3)	2014/01/28		26	%	15 - 140
			C13-DecaCB-(209)	2014/01/28		110	%	30 - 140
			C13-HexaCB-(156)+(157)	2014/01/28		94	%	30 - 140
			2-MonoCB-(1)	2014/01/28	0.015 U, EDL=0.015		ng/L	
			3-MonoCB-(2)	2014/01/28	0.012 U, EDL=0.012		ng/L	
			4-MonoCB-(3)	2014/01/28	0.014 U, EDL=0.014		ng/L	
			22'-DiCB-(4)	2014/01/28	0.018 U, EDL=0.018		ng/L	
			2,3-DiCB-(5)	2014/01/28	0.021 U, EDL=0.021		ng/L	
			2,3'-DiCB-(6)	2014/01/28	0.020 U, EDL=0.020		ng/L	
			2,4-DiCB-(7)	2014/01/28	0.020 U, EDL=0.020		ng/L	
			2,4'-DiCB-(8)	2014/01/28	0.020 U, EDL=0.020		ng/L	
			2,5-DiCB-(9)	2014/01/28	0.020 U, EDL=0.020		ng/L	

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Quality Assurance Report (Continued)

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3495980	BY	Method Blank	2,6-DiCB-(10)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			3,3'-DiCB-(11)	2014/01/28	0.021 U,	EDL=0.021	ng/L	
			DiCB-(12)+(13)	2014/01/28	0.021 U,	EDL=0.021	ng/L	
			3,5-DiCB-(14)	2014/01/28	0.020 U,	EDL=0.020	ng/L	
			4,4'-DiCB-(15)	2014/01/28	0.033 U,	EDL=0.033	ng/L	
			22'3-TriCB-(16)	2014/01/28	0.022 U,	EDL=0.022	ng/L	
			22'4-TriCB-(17)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			TriCB-(18)+(30)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			22'6-TriCB-(19)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			TriCB-(20) + (28)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			TriCB-(21)+(33)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			234'-TriCB-(22)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			235-TriCB-(23)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			236-TriCB-(24)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			23'4-TriCB-(25)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			TriCB-(26)+(29)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			23'6-TriCB-(27)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			24'5-TriCB-(31)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			24'6-TriCB-(32)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			23'5'-TriCB-(34)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			33'4-TriCB-(35)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			33'5-TriCB-(36)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			344'-TriCB-(37)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			345-TriCB-(38)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			34'5-TriCB-(39)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			TetraCB-(40)+(41)+(71)	2014/01/28	0.018 U,	EDL=0.018	ng/L	
			22'34'-TetraCB-(42)	2014/01/28	0.023 U,	EDL=0.023	ng/L	
			22'35-TetraCB-(43)	2014/01/28	0.026 U,	EDL=0.026	ng/L	
			TetraCB-(44)+(47)+(65)	2014/01/28	0.028 J,	EDL=0.017	ng/L	
			TetraCB-(45)+(51)	2014/01/28	0.018 U,	EDL=0.018	ng/L	
			22'36'-TetraCB-(46)	2014/01/28	0.021 U,	EDL=0.021	ng/L	
			22'45-TetraCB-(48)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			TetraCB-(49)+TetraCB-(69)	2014/01/28	0.016 U,	EDL=0.016	ng/L	
			TetraCB-(50)+(53)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			22'55'-TetraCB-(52)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			22'66'-TetraCB-(54)	2014/01/28	0.0031 U,	EDL=0.0031	ng/L	
			233'4-TetraCB-(55)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			233'4'-Tetra CB(56)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			233'5-TetraCB-(57)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			233'5'-TetraCB-(58)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			TetraCB-(59)+(62)+(75)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			2344'-TetraCB -(60)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			TetraCB-(61)+(70)+(74)+(76)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			234'5-TetraCB-(63)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			234'6-TetraCB-(64)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			23'44'-TetraCB-(66)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			23'45-TetraCB-(67)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			23'45'-TetraCB-(68)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			23'55'-TetraCB-(72)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			23'5'6-TetraCB-(73)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			33'44'-TetraCB-(77)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			33'45-TetraCB-(78)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			33'45'-TetraCB(79)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			33'55'-TetraCB-(80)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			344'5-TetraCB-(81)	2014/01/28	0.015 U,	EDL=0.015	ng/L	

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Maxxam Job Number: GB403971

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3495980	BY	Method Blank	22'33'4-PentaCB-(82)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			PentaCB-(83)+(99)	2014/01/28	0.0092 U,	EDL=0.0092	ng/L	
			22'33'6-PentaCB-(84)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			PentaCB-(85)+(116)+(117)	2014/01/28	0.0079 U,	EDL=0.0079	ng/L	
			PentaCB-(86)(87)(97)(109)(119)(125)	2014/01/28	0.0080 U,	EDL=0.0080	ng/L	
			PentaCB-(88)+(91)	2014/01/28	0.0090 U,	EDL=0.0090	ng/L	
			22'346'-PentaCB-(89)	2014/01/28	0.0097 U,	EDL=0.0097	ng/L	
			PentaCB-(90)+(101)+(113)	2014/01/28	0.0080 U,	EDL=0.0080	ng/L	
			22'355'-PentaCB-(92)	2014/01/28	0.0093 U,	EDL=0.0093	ng/L	
			PentaCB-(93)+(98)+(100)+(102)	2014/01/28	0.0094 U,	EDL=0.0094	ng/L	
			22'356'-PentaCB-(94)	2014/01/28	0.0094 U,	EDL=0.0094	ng/L	
			22'35'6-PentaCB-(95)	2014/01/28	0.0085 U,	EDL=0.0085	ng/L	
			22'366'-PentaCB-(96)	2014/01/28	0.0017 U,	EDL=0.0017	ng/L	
			22'45'6-PentaCB-(103)	2014/01/28	0.0081 U,	EDL=0.0081	ng/L	
			22'466'-PentaCB-(104)	2014/01/28	0.0024 U,	EDL=0.0024	ng/L	
			233'44'-PentaCB-(105)	2014/01/28	0.010 U,	EDL=0.010	ng/L	
			233'45-PentaCB-(106)	2014/01/28	0.0098 U,	EDL=0.0098	ng/L	
			233'4'5-PentaCB-(107)	2014/01/28	0.0095 U,	EDL=0.0095	ng/L	
			PentaCB-(108)+(124)	2014/01/28	0.0096 U,	EDL=0.0096	ng/L	
			PentaCB-(110)+(115)	2014/01/28	0.0077 U,	EDL=0.0077	ng/L	
			233'55'-PentaCB-(111)	2014/01/28	0.0067 U,	EDL=0.0067	ng/L	
			233'56-PentaCB-(112)	2014/01/28	0.0075 U,	EDL=0.0075	ng/L	
			2344'5-PentaCB-(114)	2014/01/28	0.010 U,	EDL=0.010	ng/L	
			23'44'5-PentaCB-(118)	2014/01/28	0.010 U,	EDL=0.010	ng/L	
			23'455'-PentaCB-(120)	2014/01/28	0.0067 U,	EDL=0.0067	ng/L	
			23'45'6-PentaCB-(121)	2014/01/28	0.0067 U,	EDL=0.0067	ng/L	
			233'4'5'-PentaCB-(122)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			23'44'5'-PentaCB-(123)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			33'44'5-PentaCB-(126)	2014/01/28	0.010 U,	EDL=0.010	ng/L	
			33'455'-PentaCB-(127)	2014/01/28	0.0099 U,	EDL=0.0099	ng/L	
			HexaCB-(128)+(166)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			HexaCB-(129)+(138)+(163)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			22'33'45'-HexaCB-(130)	2014/01/28	0.018 U,	EDL=0.018	ng/L	
			22'33'46-HexaCB-(131)	2014/01/28	0.019 U,	EDL=0.019	ng/L	
			22'33'46'-HexaCB-(132)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			22'33'55'-HexaCB-(133)	2014/01/28	0.016 U,	EDL=0.016	ng/L	
			HexaCB-(134)+(143)	2014/01/28	0.018 U,	EDL=0.018	ng/L	
			HexaCB-(135)+(151)	2014/01/28	0.0037 U,	EDL=0.0037	ng/L	
			22'33'66'-HexaCB-(136)	2014/01/28	0.0028 U,	EDL=0.0028	ng/L	
			22'344'5-HexaCB-(137)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			HexaCB-(139)+(140)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			22'3455'-HexaCB-(141)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			22'3456-HexaCB-(142)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			22'345'6-HexaCB-(144)	2014/01/28	0.0038 U,	EDL=0.0038	ng/L	
			22'3466'-HexaCB-(145)	2014/01/28	0.0028 U,	EDL=0.0028	ng/L	
			22'34'55'-HexaCB-(146)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			HexaCB-(147)+(149)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			22'34'56'-HexaCB-(148)	2014/01/28	0.0037 U,	EDL=0.0037	ng/L	
			22'34'66'-HexaCB-(150)	2014/01/28	0.0025 U,	EDL=0.0025	ng/L	
			22'3566'-HexaCB-(152)	2014/01/28	0.0027 U,	EDL=0.0027	ng/L	
			HexaCB-(153)+(168)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			22'44'56'-HexaCB-(154)	2014/01/28	0.0034 U,	EDL=0.0034	ng/L	
			22'44'66'-HexaCB-(155)	2014/01/28	0.0042 U,	EDL=0.0042	ng/L	
			HexaCB-(156)+(157)	2014/01/28	0.0051 U,	EDL=0.0051	ng/L	
			233'44'6-HexaCB-(158)	2014/01/28	0.012 U,	EDL=0.012	ng/L	

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3495980	BY	Method Blank	233'455'-HexaCB-(159)	2014/01/28	0.0057 U,	EDL=0.0057	ng/L	
			233'456-HexaCB-(160)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			233'45'6-HexaCB-(161)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			233'4'55'-HexaCB-(162)	2014/01/28	0.0055 U,	EDL=0.0055	ng/L	
			233'4'5'6-HexaCB-(164)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			233'55'6-HexaCB-(165)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			23'44'55'-HexaCB-(167)	2014/01/28	0.0054 U,	EDL=0.0054	ng/L	
			33'44'55'-HexaCB-(169)	2014/01/28	0.0056 U,	EDL=0.0056	ng/L	
			22'33'44'5-HeptaCB-(170)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			HeptaCB-(171)+(173)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			22'33'455'-HeptaCB-(172)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			22'33'456'-HeptaCB-(174)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			22'33'45'6-HeptaCB-(175)	2014/01/28	0.0045 U,	EDL=0.0045	ng/L	
			22'33'466'-HeptaCB-(176)	2014/01/28	0.0033 U,	EDL=0.0033	ng/L	
			22'33'45'6'-HeptaCB-(177)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			22'33'55'6-HeptaCB-(178)	2014/01/28	0.0047 U,	EDL=0.0047	ng/L	
			22'33'566'-HeptaCB-(179)	2014/01/28	0.0032 U,	EDL=0.0032	ng/L	
			HeptaCB-(180)+(193)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			22'344'56-HeptaCB-(181)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			22'344'56'-HeptaCB-(182)	2014/01/28	0.0045 U,	EDL=0.0045	ng/L	
			22'344'5'6-HeptaCB-(183)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			22'344'66'-HeptaCB-(184)	2014/01/28	0.0030 U,	EDL=0.0030	ng/L	
			22'3455'6-HeptaCB-(185)	2014/01/28	0.016 U,	EDL=0.016	ng/L	
			22'34566'-HeptaCB-(186)	2014/01/28	0.0034 U,	EDL=0.0034	ng/L	
			22'34'55'6-HeptaCB-(187)	2014/01/28	0.0042 U,	EDL=0.0042	ng/L	
			22'34'566'-HeptaCB-(188)	2014/01/28	0.0053 U,	EDL=0.0053	ng/L	
			233'44'55'-HeptaCB-(189)	2014/01/28	0.0065 U,	EDL=0.0065	ng/L	
			233'44'56-HeptaCB-(190)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			233'44'5'6-HeptaCB-(191)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			233'455'6-HeptaCB-(192)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			22'33'44'55'-OctaCB-(194)	2014/01/28	0.0075 U,	EDL=0.0075	ng/L	
			22'33'44'56-OctaCB-(195)	2014/01/28	0.0080 U,	EDL=0.0080	ng/L	
			22'33'44'56'-OctaCB-(196)	2014/01/28	0.0083 U,	EDL=0.0083	ng/L	
			22'33'44'66'OctaCB-(197)	2014/01/28	0.0049 U,	EDL=0.0049	ng/L	
			OctaCB-(198)+(199)	2014/01/28	0.0082 U,	EDL=0.0082	ng/L	
			22'33'4566'-OctaCB-(200)	2014/01/28	0.0068 U,	EDL=0.0068	ng/L	
			22'33'45'66'-OctaCB-(201)	2014/01/28	0.0057 U,	EDL=0.0057	ng/L	
			22'33'55'66'-OctaCB-(202)	2014/01/28	0.0081 U,	EDL=0.0081	ng/L	
			22'344'55'6-OctaCB-(203)	2014/01/28	0.0078 U,	EDL=0.0078	ng/L	
			22'344'566'-OctaCB-(204)	2014/01/28	0.0057 U,	EDL=0.0057	ng/L	
			233'44'55'6-OctaCB-(205)	2014/01/28	0.0054 U,	EDL=0.0054	ng/L	
			22'33'44'55'6-NonaCB-(206)	2014/01/28	0.0042 U,	EDL=0.0042	ng/L	
			22'33'44'566'-NonaCB-(207)	2014/01/28	0.0033 U,	EDL=0.0033	ng/L	
			22'33'455'66'-NonaCB-(208)	2014/01/28	0.0039 U,	EDL=0.0039	ng/L	
			DecaCB-(209)	2014/01/28	0.0054 U,	EDL=0.0054	ng/L	
			Monochlorobiphenyl	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			Dichlorobiphenyl	2014/01/28	0.033 U,	EDL=0.033	ng/L	
			Trichlorobiphenyl	2014/01/28	0.022 U,	EDL=0.022	ng/L	
			Tetrachlorobiphenyl	2014/01/28	0.028,	EDL=0.026	ng/L	
			Pentachlorobiphenyl	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			Hexachlorobiphenyl	2014/01/28	0.019 U,	EDL=0.019	ng/L	
			Heptachlorobiphenyl	2014/01/28	0.016 U,	EDL=0.016	ng/L	
			Octachlorobiphenyl	2014/01/28	0.0083 U,	EDL=0.0083	ng/L	
			Nonachlorobiphenyl	2014/01/28	0.0042 U,	EDL=0.0042	ng/L	
			Decachlorobiphenyl	2014/01/28	0.0054 U,	EDL=0.0054	ng/L	

Apex Laboratories
Attention: Philip Nerenberg
Client Project #: A4A0131
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB403971

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3495980	BY	Method Blank	Total PCB	2014/01/28	0.0276		ng/L	

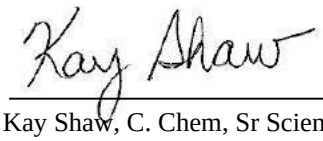
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
(1) Within method acceptable criteria range(25-150%).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

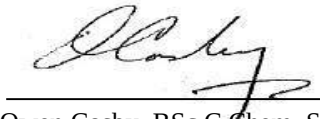
Validation Signature Page

Maxxam Job #: B403971

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Kay Shaw, C. Chem, Sr Scientific Specialist, HRMS Services



Owen Cosby, BSc.C.Chem, Supervisor, HRMS Services

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Analytical Resources, Incorporated
Analytical Chemists and Consultants

January 20, 2014

Philip Nerenberg
Apex Laboratories
12232 SW Garden Place
Tigard, OR 97223

Client Project: A4A0131
ARI Job No.: XU17

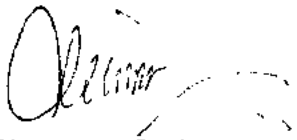
Dear Mr. Nerenberg:

Please find enclosed the original Chain of Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above.

Sample receipt information and analytical details are addressed in the Case Narrative.

An electronic copy of this report and all supporting raw data will be kept on file at ARI. Should you have any questions or concerns, please feel free to call me at your convenience.

Respectfully,
ANALYTICAL RESOURCES, INC.



Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile: XU17

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

KH 1-9-14

SUBCONTRACT ORDER

Apex Laboratories

A4A0131

XU17

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Analytical Resources, INC
4611 S. 134th Place
Tukwila, WA 98168
Phone :(206) 695-6200
Fax: (206) 695-6201

OF 22

Sample Name: B22-SP1-20140107 **Water** **Sampled: 01/07/14 13:45** (A4A0131-01)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	01/22/14 17:00	01/21/14 13:45	Krone--ARI
Containers Supplied:			
(P)1 L Amber Glass - Non Preserved			
(Q)1 L Amber Glass - Non Preserved			

OF 20, IDs say B20-20A

Sample Name: B20-SP1-20140107 **Water** **Sampled: 01/07/14 14:15** (A4A0131-02)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	01/22/14 17:00	01/21/14 14:15	Krone--ARI
Containers Supplied:			
(Q)1 L Amber Glass - Non Preserved			

MH Location

Sample Name: B18-SP1-20140107 **Water** **Sampled: 01/07/14 15:45** (A4A0131-03)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	01/22/14 17:00	01/21/14 15:45	Krone--ARI
Containers Supplied:			
(P)1 L Amber Glass - Non Preserved			
(Q)1 L Amber Glass - Non Preserved			

MH Location for B19, ID prefex reads B19-SPI

Sample Name: B19-SP-19-1-20140107 **Water** **Sampled: 01/07/14 15:00** (A4A0131-04)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	01/22/14 17:00	01/21/14 15:00	Krone--ARI
Containers Supplied:			
(P)1 L Amber Glass - Non Preserved			
(Q)1 L Amber Glass - Non Preserved			

standard TAT

1/9/14

Released By	Date	Received By	Date
UPS (Shipper)		UPS (Shipper)	
Released By	Date	Received By	Date
			1/10/14 1030

XU17 : 00002

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Apex Project Name: _____

COC No(s): _____ (NA) Delivered by: Fed-Ex (UPS) Courier Hand Delivered Other: _____

Assigned ARI Job No: XU17 Tracking No: 1ZX47202139487084? NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 1.5
Time: 1030

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90879982

Cooler Accepted by: AV Date: 1/10/14 Time: 1030

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		(YES)	NO
What kind of packing material was used?	Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI: (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: AV Date: 1/10/14 Time: 1207

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • •	● ● ●

Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Case Narrative

Client: Apex Laboratories
Project: A4A0131
ARI Job No.: XU17

Sample Receipt

Analytical Resources, Inc. (ARI) accepted four water samples January 10, 2014 under ARI job XU17. The cooler temperature measured by IR thermometer following ARI SOP was 1.5°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

The samples were analyzed for parameters as requested on the COC.

Butyltins by Krone 1988 SIM

The LCS percent recovery of Butyltin fell outside the control limits low for **LCS-011314**. All other percent recoveries were within control limits. No corrective action was taken.

There were no other irregularities with this analysis.

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: XU17
Client: Apex Labs
Project Event: A4A0131
Project Name: N/A

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	B22-SP1-20140107	XU17A	14-592	Water	01/07/14 13:45	01/10/14 10:30
2.	B20-SP1-20140107	XU17B	14-593	Water	01/07/14 14:15	01/10/14 10:30
3.	B18-SP1-20140107	XU17C	14-594	Water	01/07/14 15:45	01/10/14 10:30
4.	B19-SP-19-1-20140107	XU17D	14-595	Water	01/07/14 15:00	01/10/14 10:30

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: B22-SP1-20140107**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: XU17A
LIMS ID: 14-592
Matrix: Water
Data Release Authorized:
Reported: 01/20/14

QC Report No: XU17-Apex Labs
Project: A4A0131
Event: NA
Date Sampled: 01/07/14
Date Received: 01/10/14

Date Extracted: 01/13/14
Date Analyzed: 01/15/14 12:18
Instrument/Analyst: NT12/JLW

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	63.6%
Tripentyl Tin Chloride	75.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: B20-SP1-20140107**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: XU17B
LIMS ID: 14-593
Matrix: Water
Data Release Authorized:
Reported: 01/20/14

QC Report No: XU17-Apex Labs
Project: A4A0131
Event: NA
Date Sampled: 01/07/14
Date Received: 01/10/14

Date Extracted: 01/13/14
Date Analyzed: 01/15/14 12:32
Instrument/Analyst: NT12/JLW

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	62.8%
Tripentyl Tin Chloride	72.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: B18-SP1-20140107**
Extraction Method: SW3510C **SAMPLE**
Page 1 of 1

Lab Sample ID: XU17C
LIMS ID: 14-594
Matrix: Water
Data Release Authorized:
Reported: 01/20/14

QC Report No: XU17-Apex Labs
Project: A4A0131
Event: NA
Date Sampled: 01/07/14
Date Received: 01/10/14

Date Extracted: 01/13/14
Date Analyzed: 01/15/14 12:46
Instrument/Analyst: NT12/JLW

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	49.7%
Tripentyl Tin Chloride	56.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: B19-SP-19-1-20140107**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: XU17D
LIMS ID: 14-595
Matrix: Water
Data Release Authorized:
Reported: 01/20/14

QC Report No: XU17-Apex Labs
Project: A4A0131
Event: NA
Date Sampled: 01/07/14
Date Received: 01/10/14

Date Extracted: 01/13/14
Date Analyzed: 01/15/14 12:59
Instrument/Analyst: NT12/JLW

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	42.9%
Tripentyl Tin Chloride	50.6%

ANALYTICAL RESOURCES INCORPORATED

TBT SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: XU17-Apex Labs
Project: A4A0131
Event: NA

Client ID	TPRT	TPNT	TOT OUT
MB-011314	53.9%	62.0%	0
LCS-011314	52.9%	61.5%	0
LCSD-011314	62.4%	71.4%	0
B22-SP1-20140107	63.6%	75.8%	0
B20-SP1-20140107	62.8%	72.9%	0
B18-SP1-20140107	49.7%	56.7%	0
B19-SP-19-1-20140107	42.9%	50.6%	0

	LCS/MB LIMITS	QC LIMITS
(TPRT) = Tripropyl Tin Chloride	(30-160)	(30-160)
(TPNT) = Tripentyl Tin Chloride	(30-160)	(30-160)

Prep Method: SW3510C
Analytical Method: TBT (Hexyl) Krone 1988
Log Number Range: 14-592 to 14-595

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: LCS-011314**
Page 1 of 1 **LAB CONTROL SAMPLE**

Lab Sample ID: LCS-011314
LIMS ID: 14-592
Matrix: Water
Data Release Authorized: *B*
Reported: 01/20/14

QC Report No: XU17-Apex Labs
Project: A4A0131
Date Sampled: NA
Date Received: NA

Date Extracted LCS: 01/13/14

Date Analyzed LCS: 01/15/14 11:51
LCSD: 01/15/14 12:05
Instrument/Analyst LCS: NT12/JLW
LCSD: NT12/JLW

Sample Amount LCS: 100 mL
LCSD: 100 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Alumina Cleanup: Yes

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Tributyltin Ion	1.50	2.23	67.3%	1.70	2.23	76.2%	12.5%
Dibutyltin Ion	1.17	1.92	60.9%	1.31	1.92	68.2%	11.3%
Butyltin Ion	0.45	1.56	28.8%	0.51	1.56	32.7%	12.5%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

TBT Surrogate Recovery

	LCS	LCSD
Tripropyl Tin Chloride	52.9%	62.4%
Tripentyl Tin Chloride	61.5%	71.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: MB-011314**
Extraction Method: SW3510C **METHOD BLANK**

Lab Sample ID: MB-011314
LIMS ID: 14-592
Matrix: Water
Data Release Authorized:
Reported: 01/20/14

QC Report No: XU17-Apex Labs
Project: A4A0131
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 01/13/14
Date Analyzed: 01/15/14 11:37
Instrument/Analyst: NT12/JLW

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	53.9%
Tripentyl Tin Chloride	62.0%

Basin 22 Storm Water Sampling and Analysis Data
January 7, 2014 Sampling Events, Source Control Evaluation,
Burgard Industrial Park, Portland, Oregon
Bridgewater Group, Inc., 2014

BRIDGEWATER GROUP, INC.

Basin 22 Storm Water Sampling and Analysis Data
January 7, 2014 Sampling Events
Source Control Evaluation
Burgard Industrial Park
Portland, Oregon

TO: Jim Orr/Oregon DEQ

CC: Mat Cusma/Schnitzer
Mark Bartee/Schnitzer

FROM: Ross Rieke/Bridgewater Group

DATE: April 2, 2014

This memorandum presents the results of the January 7, 2014 storm water sampling and analysis performed at Basin 22 at the Burgard Industrial Park (BIP) in Portland, Oregon (Figure 1, Figure 2). The storm water sampling and analysis were performed in general accordance with the March 1, 2012 *Source Control Evaluation, Basin 22 Sampling and Analysis Plan,* as revised by a March 20, 2013 email from Bridgewater Group to DEQ and approved by DEQ in an October 7, 2013 email.

Basin 22 Description

Basin 22 consists of an approximately 14 acre area in the northwest corner of the BIP. Figure 3 shows the approximate boundaries of Basin 22. The Basin 22 boundaries are estimated from observations of the site during wet weather conditions, the locations of catch basins, storm water system assessments on adjacent properties, storm water plan drawings, and the general topography of the basin. About ½ of Basin 22 is outside the boundaries of the BIP on the RockTenn property.

As shown on Figure 3, a series of catch basins drains almost the entire northern portion of Basin 22 to a storm water pump station which pumps the storm water into a storm water detention pond. If the water level in the pond nears the top of the pond, water is manually discharged by opening a valve allowing discharge to a manhole located near the southern edge of the BIP. Building roof drains also discharge to the manhole. Discharge from the manhole joins with runoff from the southern portion of Basin 22 (the RockTenn property outside of the BIP) and is discharged out Outfall 22 to the IT Slip.

The southern boundary of Basin 22 is the top of bank along the northern edge of the IT Slip. The narrow strip of land south of this boundary is part of the BIP and consists of the heavily vegetated and/or armored slope of the bank. This slope does not receive any runoff from Basin 22 (or any other portion of the Burgard uplands) and any precipitation falling on this slope infiltrates down through the vegetation and armor, and does not become part of the Basin 22 discharge. Surface and near-surface soils in this bank area have been assessed through separate sampling activities.

The relevant (northern) portion of Basin 22 consists of approximately 8.3 acres and includes a 72,000 sq. ft. building occupied by two business entities. The western portion of the building is occupied by Wilbur-Ellis Co., operating a dry-bulk (animal feed and organic fertilizer) packaging,

ingredient blending, and transloading facility. These activities are conducted inside the building or under cover. The eastern portion of the building is occupied by RB Recycling, Inc., operating a tire shredding and rubber processing facility. The majority of this facility's storage and packaging operations are conducted inside the building. The stormwater drainage from areas directly beneath outside processing and conveying equipment is either recycled as process cooling water or is discharged to the sanitary sewer. All operations in this basin occur on paved areas.

Basin 22 Storm Water Sampling and Analysis

Storm Water Sample Collection

A Basin 22 storm water sample was collected on January 7, 2014 at the Basin 22 outfall on the north shore of the IT Slip. Table 1 presents the rainfall conditions preceding, and during, the storm water sampling event. A January 8, 2014 email to DEQ described the specific rainfall and flow conditions during the sampling event and requested DEQ's input on whether the samples sufficiently met the criteria to be acceptable for analysis. DEQ reviewed the rainfall and flow conditions and concurred that the samples are representative in a subsequent January 8, 2014 email.

Storm Water Sample Analysis

The Basin 22 storm water sample was analyzed for the following:

- PCB aroclors, homologs, and congeners;
- Phthalates;
- Dioxins/furans;
- Butyltins;
- Aluminum, antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, and zinc;
- Polycyclic aromatic hydrocarbons (PAHs);
- Organochlorine pesticides;
- Petroleum Hydrocarbons (gasoline, diesel, and heavy oil);
- Total suspended solids (TSS); and
- Total organic carbon (TOC).

Table 2 presents the results of the Basin 22 storm water sample analyses. Copies of the analytical laboratory reports are provided in Appendix A. Review of the laboratory QA/QC results did not indicate any issues requiring corrective action.

Attachments:

Table 1 – Storm Water Sampling Event Rainfall Data, 1/7/2014 Sampling Event
Table 2 – Storm Water Sample Analytical Laboratory Results
Figure 1 – Site Location Map
Figure 2 – Burgard Industrial Park Site Plan

Figure 3 – Basin 22 Sample Location
Appendix A – Analytical Laboratory Reports

Tables

Table 1
Storm Water Sampling Event Rainfall Data
1/7/2014 Sampling Event
Burgard Industrial Park Basin 22

Date	Daily Total	Hourly Rain Fall (0.01 inches)																							
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
12/25/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/26/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/27/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/28/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/29/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/30/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12/31/13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/1/14	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/2/14	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	3
1/3/14	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/4/14	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/5/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1/6/14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1
1/7/14	45	0	0	0	1	0	0	0	0	1	0	0	0	2	13	3	0	1	0	6	10	3	0	3	2

Sample collected 13:45

Data from Shipyard Rain Gage - 8900 N. Sever Road

Sampling Day

Sampling Hour

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 22

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	SP1 11/18/2013	SP1 1/7/2014
PAHs (ug/l)				
Acenaphthene	0.2		0.042 U	0.078 U
Acenaphthylene	0.2		0.078 J	0.078 U
Anthracene			0.042 U	0.078 U
Benzo(a)anthracene	0.018		0.042 U	0.078 U
Benzo(a)pyrene	0.018		0.048 J	0.12 U
Benzo(b+k)fluoranthene	0.018		0.042 U	0.12 U
Benzo(g,h,i)perylene	0.2		0.042 U	0.085 J
Chrysene	0.018		0.042 U	0.11 J
Dibenzo(a,h)anthracene	0.018		0.042 U	0.078 U
Fluoranthene	0.2		0.042 U	0.12 J
Fluorene	0.2		0.042 U	0.078 U
Indeno(1,2,3-cd)pyrene	0.018		0.042 U	0.078 U
Naphthalene	0.2		0.083 U	0.16 U
Phenanthrene	0.2		0.042 U	0.12 J
Pyrene	0.2		0.042 U	0.17
Total Detected PAHs		1	0.13	0.50
PCBs (ug/l)				
Aroclor 1016	0.96		0.010 U	0.021 U
Aroclor 1221	0.034		0.010 U	0.021 U
Aroclor 1232	0.034		0.019 U	0.021 U
Aroclor 1242	0.034		0.010 U	0.033 J
Aroclor 1248	0.034		0.010 U	0.021 U
Aroclor 1254	0.034		0.010 U	0.021 U
Aroclor 1260	0.034		0.010 U	0.021 U
Total Detected PCB aroclors	0.000064		0.000	0.000
PCB Congeners (ng/l)				
2-MonoCB-(1)			0.035 J	0.065 J
3-MonoCB-(2)			0.016 U	0.013 J
4-MonoCB-(3)			0.018 U	0.030 U
22'-DiCB-(4)			0.22	0.63
2,3-DiCB-(5)			0.015 U	0.022 U
2,3'-DiCB-(6)			0.042 J	0.18 U
2,4-DiCB-(7)			0.013 U	0.027 U
2,4'-DiCB-(8)			0.20	0.94
2,5-DiCB-(9)			0.013 U	0.054 U
2,6-DiCB-(10)			0.015 U	0.016 J
3,3'-DiCB-(11)			0.44	3.9
DiCB-(12)+(13)			0.013 U	0.10 U
3,5-DiCB-(14)			0.013 U	0.022 U
4,4'-DiCB-(15)			0.12	0.75
22'3-TriCB-(16)			0.16	1.0
22'4-TriCB-(17)			0.13	0.74
TriCB-(18)+(30)			0.27	1.6
22'6-TriCB-(19)			0.051 J	0.20
TriCB-(20) + (28)			0.39	2.7
TriCB-(21)+(33)			0.26	1.8
234'-TriCB-(22)			0.17	1.1
235-TriCB-(23)			0.015 U	0.0039 U
236-TriCB-(24)			0.015 U	0.0022 U
23'4-TriCB-(25)			0.03 J	0.20
TriCB-(26)+(29)			0.0680 J	0.44
23'6-TriCB-(27)			0.021 J	0.11
24'5-TriCB-(31)			0.34	2.3
24'6-TriCB-(32)			0.081 J	0.47

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 22

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	SP1 11/18/2013	SP1 1/7/2014
23'5'-TriCB-(34)			0.014 U	0.0064 J
33'4-TriCB-(35)			0.013 U	0.077 J
33'5-TriCB-(36)			0.012 U	0.0085 U
344'-TriCB-(37)			0.12	1.0
345-TriCB-(38)			0.014 U	0.0039 U
34'5-TriCB-(39)			0.013 U	0.0072 J
TetraCB-(40)+(41)+(71)			0.16 J	1.1
22'34'-TetraCB-(42)			0.079 J	0.59
22'35-TetraCB-(43)			0.033 U	0.086 J
TetraCB-(44)+(47)+(65)			0.25 J	1.8
TetraCB-(45)+(51)			0.050 J	0.32
22'36'-TetraCB-(46)			0.025 U	0.12
22'45-TetraCB-(48)			0.055 J	0.38
TetraCB-(49)+TetraCB-(69)			0.13 J	0.94
TetraCB-(50)+(53)			0.032 J	0.21
22'55'-TetraCB-(52)			0.22	1.7
22'66'-TetraCB-(54)			0.0094 U	0.0056 J
233'4-TetraCB-(55)			0.015 U	0.017 J
233'4'-Tetra CB(56)			0.10	0.73
233'5-TetraCB-(57)			0.014 U	0.0079 J
233'5'-TetraCB-(58)			0.014 U	0.0012 U
TetraCB-(59)+(62)+(75)			0.025 J	0.16 J
2344'-TetraCB -(60)			0.053 J	0.40
TetraCB-(61)+(70)+(74)+(76)			0.32 J	2.5
234'5-TetraCB-(63)			0.013 U	0.044 J
234'6-TetraCB-(64)			0.13	0.87
23'44'-TetraCB-(66)			0.14	1.3
23'45-TetraCB-(67)			0.014 U	0.050 J
23'45'-TetraCB-(68)			0.013 U	0.0053 U
23'55'-TetraCB-(72)			0.014 U	0.0060 U
23'5'6-TetraCB-(73)			0.014 U	0.00086 U
33'44'-TetraCB-(77)			0.024 J	0.19
33'45-TetraCB-(78)			0.015 U	0.0012 U
33'45'-TetraCB(79)			0.013 U	0.014 J
33'55'-TetraCB-(80)			0.013 U	0.0011 U
344'5-TetraCB-(81)			0.018 U	0.0039 U
22'33'4-PentaCB-(82)			0.037 J	0.22
PentaCB-(83)+(99)			0.11 J	0.66
22'33'6-PentaCB-(84)			0.061 U	0.40
PentaCB-(85)+(116)+(117)			0.036 J	0.21 J
PentaCB-(86)(87)(97)(109)(119)(125)			0.17 J	1.0
PentaCB-(88)+(91)			0.030 J	0.18 J
22'346'-PentaCB-(89)			0.020 U	0.019 J
PentaCB-(90)+(101)+(113)			0.20 J	1.3
22'355'-PentaCB-(92)			0.038 J	0.22
PentaCB-(93)+(98)+(100)+(102)			0.019 U	0.058 J
22'356'-PentaCB-(94)			0.020 U	0.0066 J
22'35'6-PentaCB-(95)			0.16	1.0
22'366'-PentaCB-(96)			0.010 U	0.013 J
22'45'6-PentaCB-(103)			0.017 U	0.0063 J
22'466'-PentaCB-(104)			0.0087 U	0.0011 U
233'44'-PentaCB-(105)			0.12	0.80
233'45-PentaCB-(106)			0.016 U	0.0014 U
233'4'5-PentaCB-(107)			0.015 U	0.10
PentaCB-(108)+(124)			0.015 U	0.065 J
PentaCB-(110)+(115)			0.34	2.1
233'55'-PentaCB-(111)			0.013 U	0.0010 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 22

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	SP1 11/18/2013	SP1 1/7/2014
233'56-PentaCB-(112)			0.014 U	0.0011 U
2344'5-PentaCB-(114)			0.018 U	0.043 J
23'44'5-PentaCB-(118)			0.24	1.7
23'455'-PentaCB-(120)			0.013 U	0.0029 U
23'45'6-PentaCB-(121)			0.014 U	0.0010 U
233'4'5'-PentaCB-(122)			0.017 U	0.023 U
23'44'5'-PentaCB-(123)			0.019 U	0.030 J
33'44'5-PentaCB-(126)			0.018 U	0.014 U
33'455'-PentaCB-(127)			0.016 U	0.002 U
HexaCB-(128)+(166)			0.06 U	0.43
HexaCB-(129)+(138)+(163)			0.40	2.9
22'33'45'-HexaCB-(130)			0.034 U	0.16
22'33'46-HexaCB-(131)			0.039 U	0.033 J
22'33'46'-HexaCB-(132)			0.12	0.77
22'33'55'-HexaCB-(133)			0.032 U	0.023 J
HexaCB-(134)+(143)			0.035 U	0.0894 J
HexaCB-(135)+(151)			0.08 J	0.53
22'33'66'-HexaCB-(136)			0.031 J	0.19
22'344'5-HexaCB-(137)			0.034 U	0.11
HexaCB-(139)+(140)			0.029 U	0.034 J
22'3455'-HexaCB-(141)			0.06 J	0.47
22'3456-HexaCB-(142)			0.034 U	0.0034 U
22'345'6-HexaCB-(144)			0.030 U	0.080 J
22'3466'-HexaCB-(145)			0.023 U	0.00087 U
22'34'55'-HexaCB-(146)			0.037 J	0.29
HexaCB-(147)+(149)			0.20	1.4
22'34'56'-HexaCB-(148)			0.030 U	0.0011 U
22'34'66'-HexaCB-(150)			0.021 U	0.0018 U
22'3566'-HexaCB-(152)			0.023 U	0.00083 U
HexaCB-(153)+(168)			0.22	1.7
22'44'56'-HexaCB-(154)			0.027 U	0.017 J
22'44'66'-HexaCB-(155)			0.023 U	0.0013 U
HexaCB-(156)+(157)			0.045 J	0.31
233'44'6-HexaCB-(158)			0.036 U	0.27
233'455'-HexaCB-(159)			0.018 U	0.021 J
233'456-HexaCB-(160)			0.023 U	0.0027 U
233'45'6-HexaCB-(161)			0.023 U	0.0023 U
233'4'55'-HexaCB-(162)			0.018 U	0.0068 U
233'4'5'6-HexaCB-(164)			0.024 J	0.19
233'55'6-HexaCB-(165)			0.025 U	0.0025 U
23'44'55'-HexaCB-(167)			0.020 U	0.10
33'44'55'-HexaCB-(169)			0.021 U	0.0069 U
22'33'44'5-HeptaCB-(170)			0.08 J	0.49
HeptaCB-(171)+(173)			0.028 U	0.15 J
22'33'455'-HeptaCB-(172)			0.028 U	0.093 J
22'33'456'-HeptaCB-(174)			0.061 J	0.50
22'33'45'6-HeptaCB-(175)			0.024 U	0.023 J
22'33'466'-HeptaCB-(176)			0.018 U	0.051 J
22'33'45'6'-HeptaCB-(177)			0.033 J	0.29
22'33'55'6-HeptaCB-(178)			0.025 U	0.094 J
22'33'566'-HeptaCB-(179)			0.018 U	0.16
HeptaCB-(180)+(193)			0.16 J	1.3
22'344'56-HeptaCB-(181)			0.026 U	0.0046 U
22'344'56'-HeptaCB-(182)			0.025 U	0.0034 U
22'344'5'6-HeptaCB-(183)			0.035 J	0.29
22'344'66'-HeptaCB-(184)			0.017 U	0.00073 U
22'3455'6-HeptaCB-(185)			0.030 U	0.0052 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 22

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	SP1 11/18/2013	SP1 1/7/2014
22'34566'-HeptaCB-(186)			0.018 U	0.00082 U
22'34'55'6-HeptaCB-(187)			0.07 J	0.62
22'34'566'-HeptaCB-(188)			0.021 U	0.0013 U
233'44'55'-HeptaCB-(189)			0.013 U	0.019 U
233'44'56-HeptaCB-(190)			0.022 U	0.095 J
233'44'5'6-HeptaCB-(191)			0.020 U	0.022 J
233'455'6-HeptaCB-(192)			0.021 U	0.0039 U
22'33'44'55'-OctaCB-(194)			0.039 J	0.35
22'33'44'56-OctaCB-(195)			0.023 U	0.10
22'33'44'56'-OctaCB-(196)			0.020 U	0.18
22'33'44'66'OctaCB-(197)			0.014 U	0.0070 U
OctaCB-(198)+(199)			0.048 J	0.49
22'33'4566'-OctaCB-(200)			0.013 U	0.054 J
22'33'45'66'-OctaCB-(201)			0.013 U	0.048 J
22'33'55'66'-OctaCB-(202)			0.018 U	0.10
22'344'55'6-OctaCB-(203)			0.026 J	0.32
22'344'566'-OctaCB-(204)			0.014 U	0.0028 U
233'44'55'6-OctaCB-(205)			0.019 U	0.017 J
22'33'44'55'6-NonaCB-(206)			0.026 U	0.37
22'33'44'566'-NonaCB-(207)			0.020 U	0.041 J
22'33'455'66'-NonaCB-(208)			0.024 U	0.081 J
DecaCB-(209)			0.016 U	0.064 J
PCB Homologs (ng/l)				
Monochlorobiphenyl			0.035	0.079
Dichlorobiphenyl			1.0	6.2
Trichlorobiphenyl			2.1	14
Tetrachlorobiphenyl			1.8	13
Pentachlorobiphenyl			1.5	10
Hexachlorobiphenyl			1.2	10
Heptachlorobiphenyl			0.44	4.2
Octachlorobiphenyl			0.11	1.7
Nonachlorobiphenyl			0.026 U	0.49
Decachlorobiphenyl			0.016 U	0.064
Total Detected PCBs (Method 1668)	0.064	400	8.2	60
Phthalates (ug/l)				
Bis(2-ethylhexyl) phthalate	2.2	5	4.6 U	8.5 U
Butylbenzyl phthalate	3		6.3 U	12 U
Dibutyl phthalate	3		6.3 U	12 U
Diethyl phthalate	3		6.3 U	12 U
Dimethyl phthalate	3		6.3 U	12 U
Di-n-octyl phthalate	3		6.3 U	12 U
Pesticides (ug/l)				
2,4'-DDD	0.00031		0.010 U	0.010 U
2,4'-DDE	0.00022		0.010 U	0.010 U
2,4'-DDT	0.2		0.010 U	0.010 U
4,4'-DDD	0.00031		0.010 U	0.010 U
4,4'-DDE	0.00022		0.010 U	0.010 U
4,4'-DDT	0.00022		0.010 U	0.010 U
Aldrin	0.00005		0.010 U	0.010 U
alpha-BHC	0.0049		0.010 U	0.010 U
beta-BHC	0.017		0.010 U	0.010 U
cis-Chlordane	0.00081		0.010 U	0.010 U
cis-Nonachlor	0.19		0.010 U	0.010 U
Chlordane Technical			0.38 U	0.37 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 22

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	SP1 11/18/2013	SP1 1/7/2014
delta-BHC	0.052		0.010 U	0.010 U
Dieldrin	0.000054		0.010 U	0.010 U
Endosulfan I	0.051		0.010 U	0.049 U
Endosulfan II	0.051		0.010 U	0.010 U
Endosulfan sulfate	89		0.0101 U	0.010 U
Endrin	0.036		0.010 U	0.010 U
Endrin aldehyde			0.01 U	0.010 U
Endrin ketone			0.010 U	0.010 U
gamma-BHC	0.037		0.010 U	0.010 U
Heptachlor	0.000079		0.010 U	0.010 U
Heptachlor epoxide	0.000039		0.010 U	0.010 U
Hexachlorobenzene	0.00029		0.030 U	0.029 U
Hexachlorobutadiene	0.86		0.010 U	0.010 U
Hexachloroethane	3.3			
Methoxychlor	0.03		0.030 U	0.029 U
Mirex	NC		0.010 U	0.010 U
Oxychlordane	0.19		0.010 U	0.010 U
Toxaphene	0.0002		0.38 U	0.37 U
trans-Chlordane	0.00081		0.010 U	0.010 U
trans-Nonachlor	0.19		0.010 U	0.010 U
Dioxins (pg/l)				
1,2,3,4,6,7,8-HeptaCDD			34	170
1,2,3,4,6,7,8-HeptaCDF			19 U	77 U
1,2,3,4,7,8,9-HeptaCDF			1.3 U	4.4 J
1,2,3,4,7,8-HexaCDD			1.0 U	2.9 J
1,2,3,4,7,8-HexaCDF			1.1 U	4.4 J
1,2,3,6,7,8-HexaCDD			1.1 U	7 J
1,2,3,6,7,8-HexaCDF			1.0 J	2.9 J
1,2,3,7,8,9-HexaCDD			1.2 U	7 J
1,2,3,7,8,9-HexaCDF			1.4 U	1.2 U
1,2,3,7,8-PentaCDD			1.5 U	1.2 U
1,2,3,7,8-PentaCDF			1.3 U	1.1 U
2,3,4,6,7,8-HexaCDF			1.1 U	2.5 J
2,3,4,7,8-PentaCDF			1.4 U	1.1 U
2,3,7,8-TetraCDD	0.0051		1.2 U	0.85 U
2,3,7,8-TetraCDF			1.0 U	1.2 J
OCDD			256	1500
OCDF			34	202
HeptaCDD homologs			64	326
HeptaCDF homologs			26	115
HexaCDD homologs			7.5 J	47 J
HexaCDF homologs			18	80
PentaCDD homologs			1.5 U	2.2 J
PentaCDF homologs			1.4 U	24 J
TetraCDD homologs			1.2 U	0.85 U
TetraCDF homologs			1.0 U	6 J
Total Dioxin TEQ (ND=DL/2)	0.0051		2.6	6.7
Total Dioxin TEQ (ND=0)	0.0051		0.53	5.0
Butyltins (ug/l)				
Butyltin ion			0.20 U	0.20 U
Dibutyltin ion			0.29 U	0.29 U
Tributyltin ion	0.072		0.19 U	0.19 U
Total Metals (ug/l)				
Aluminum			322	1880

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 22

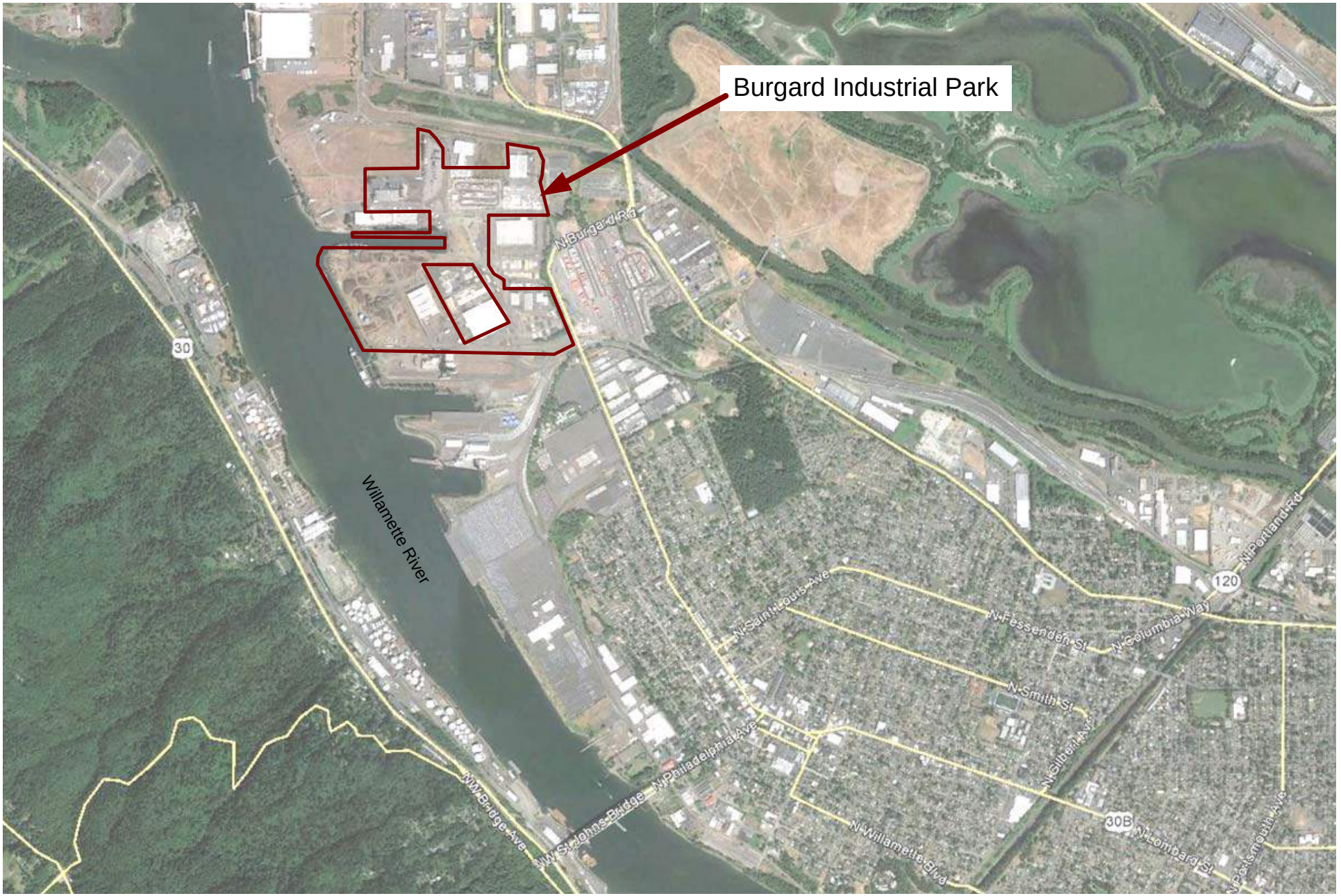
Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	SP1 11/18/2013	SP1 1/7/2014
Antimony	6		0.50 U	0.67 J
Arsenic	0.045	2	0.50 U	0.71 J
Cadmium	0.094	0.7	0.96 J	0.39
Chromium	100	7	2 J	20
Copper	2.7	60	6.5	23
Lead	0.54	50	2.3	18
Manganese	50		28	203
Mercury	0.77	0.2	0.040 U	0.040 U
Nickel	16	8	1.0	3.7
Silver	0.12	0.1	0.10 U	0.10 U
Zinc	36	500	80	210
Dissolved Metals (ug/l)				
Aluminum			28 J	41 J
Antimony	6		0.50 U	0.50 U
Arsenic	0.045	2	0.50 U	0.50 U
Cadmium	0.094	0.7	0.10 J	0.08 J
Chromium	100	7	0.50 U	0.50 J
Copper	2.7	60	5.1	4.3
Lead	0.54	50	0.36	0.36
Manganese	50		17	19
Mercury	0.77	0.2	0.040 U	0.040 U
Nickel	16	8	0.74 J	1.1
Silver	0.12	0.1	0.10 U	0.10 U
Zinc	36	500	68	45
Pertroleum Hydrocarbons (mg/l)				
Gasoline			0.050 U	0.05 U
Diesel			0.10 U	0.48 U
Oil			0.52	2.2
TSS (mg/l)		60	5.0 U	85
TOC (mg/l)			8.5	6.7

U - Not detectet at noted detection limit
J- Estimated value

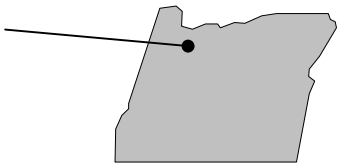
1 - Table 3-1 PH JSCS Guidance, 7/16/2007 revision
2 - October 2010, DEQ Guidance for Evaluating Stormwater Pathway at Upland Sites, Appendix E, Tool For Evaluating Stormwater Data

Detected concentration > 10 x SLV
Detected concentration > 100 x SLV
Detected concentration > 1000 x SLV

Figures



Portland, Oregon



N

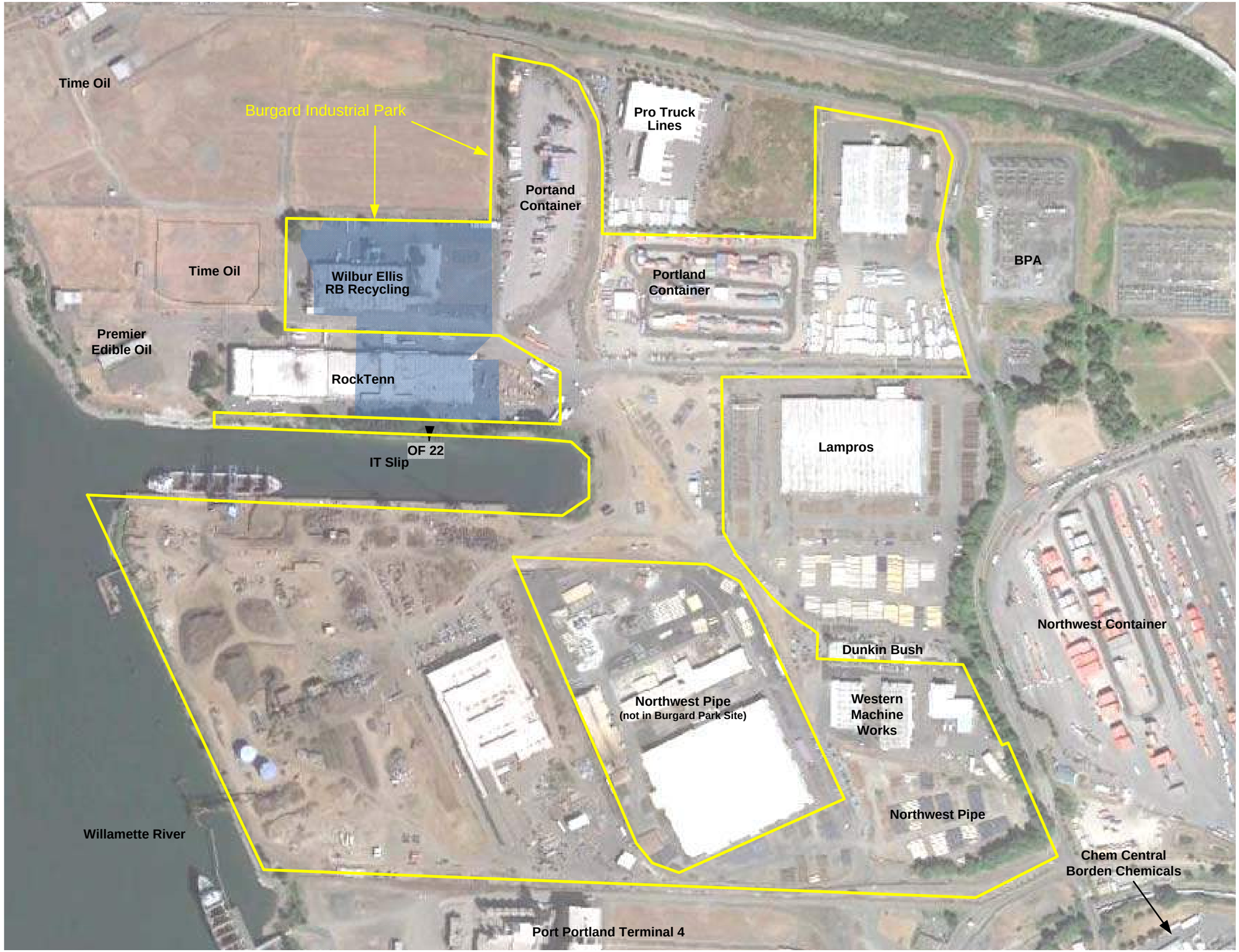
Approximate Scale

2200 feet

Figure 1
Site Location Map
Burgard Industrial Park

BRIDGEWATER GROUP, INC.

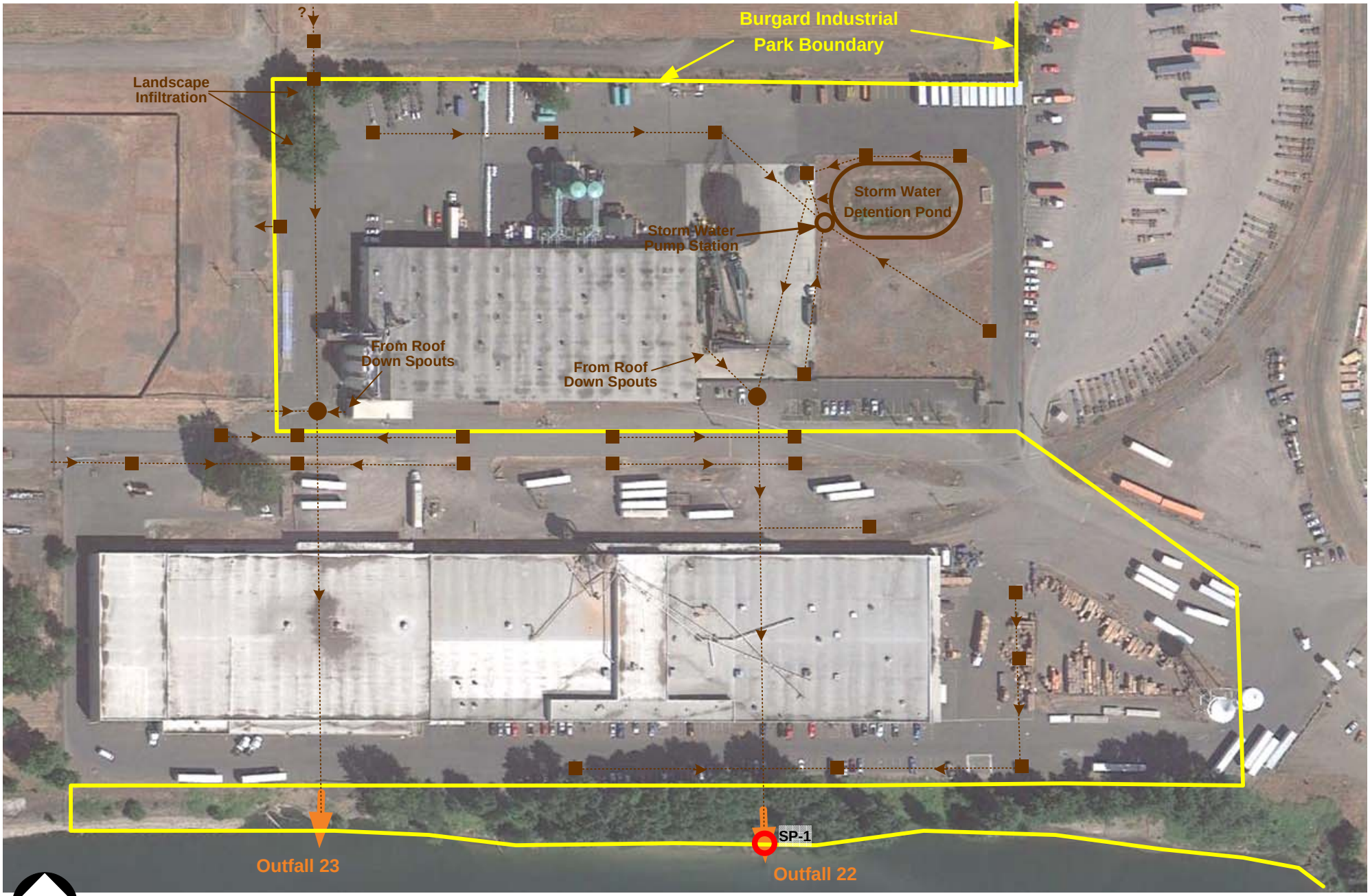
Base photograph August 2012



Base Photograph August 2012

Figure 2
Burgard Industrial Park Site Plan
Portland, Oregon

BRIDGEWATER GROUP, INC.



N

Approximate Scale

160 feet

Base photograph August 2012

Catch Basin

Manhole

Storm Water Sample Location

Figure 3
Basin 22 Sample Location
Burgard Industrial Park

BRIDGEWATER GROUP, INC.

Appendix A – Analytical Laboratory Reports

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Tuesday, January 28, 2014

Ross Rieke
Bridgewater Group
4500 SW Kruse Way; Suite 110
Lake Oswego, OR 97035

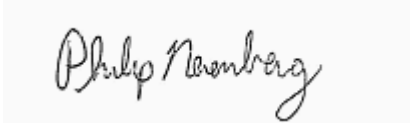
RE: Schnitzer-Burgard / HAI-8001-20

Enclosed are the results of analyses for work order A4A0131, which was received by the laboratory on 1/8/2014 at 2:00:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B22-SP1-20140107	A4A0131-01	Water	01/07/14 13:45	01/08/14 14:00
B20-SP1-20140107	A4A0131-02	Water	01/07/14 14:15	01/08/14 14:00
B18-SP1-20140107	A4A0131-03	Water	01/07/14 15:45	01/08/14 14:00
B19-SP-19-1-20140107	A4A0131-04	Water	01/07/14 15:00	01/08/14 14:00

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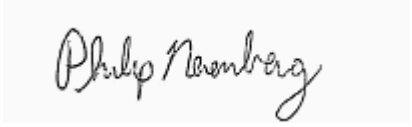

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503-718-0333 Fax

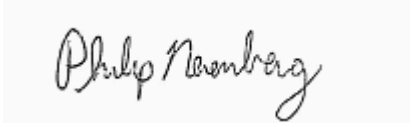
Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Diesel and Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01)			**Matrix: Water**		**Batch: 4010275**			
Diesel	ND	0.476	0.952	mg/L	5	01/14/14 22:49	NWTPH-Dx	
Oil	**2.17**	0.952	1.90	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 91 %*	*Limits: 50-150 %*	"	"	"	*S-05*
B20-SP1-20140107 (A4A0131-02)			**Matrix: Water**		**Batch: 4010275**			
Diesel	ND	0.472	0.943	mg/L	5	01/14/14 23:25	NWTPH-Dx	
Oil	**3.71**	0.943	1.89	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 85 %*	*Limits: 50-150 %*	"	"	"	*S-05*
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**		**Batch: 4010275**			
Diesel	ND	0.485	0.971	mg/L	5	01/15/14 00:01	NWTPH-Dx	
Oil	**2.90**	0.971	1.94	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 85 %*	*Limits: 50-150 %*	"	"	"	*S-05*
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**		**Batch: 4010275**			
Diesel	ND	0.952	1.90	mg/L	5	01/15/14 00:36	NWTPH-Dx	
Oil	**8.88**	1.90	3.81	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 73 %*	*Limits: 50-150 %*	"	"	"	*S-05*

Apex Laboratories



Philip Nerenberg, Lab Director

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01)			**Matrix: Water**		**Batch: 4010203**			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	01/10/14 14:39	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 104 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*107 %*	*Limits: 50-150 %*	"	"	"	
B20-SP1-20140107 (A4A0131-02)			**Matrix: Water**		**Batch: 4010203**			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	01/10/14 15:06	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 108 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*109 %*	*Limits: 50-150 %*	"	"	"	
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**		**Batch: 4010203**			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	01/10/14 15:32	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 110 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*109 %*	*Limits: 50-150 %*	"	"	"	
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**		**Batch: 4010203**			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	01/10/14 15:58	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 100 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*106 %*	*Limits: 50-150 %*	"	"	"	

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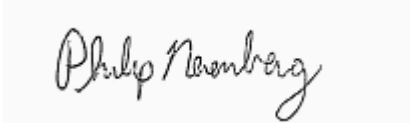

Philip Nerenberg, Lab Director

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Tigard, OR 97223
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503-718-0333 Fax

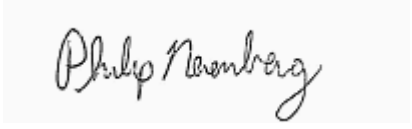
Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01)			**Matrix: Water**		**Batch: 4010401**			**C-07**
Aroclor 1016	ND	0.0208	0.0417	ug/L	1	01/21/14 10:58	EPA 8082A	
Aroclor 1221	ND	0.0208	0.0417	"	"	"	"	
Aroclor 1232	ND	0.0208	0.0417	"	"	"	"	
Aroclor 1242	**0.0332**	0.0208	0.0417	"	"	"	"	J
Aroclor 1248	ND	0.0208	0.0417	"	"	"	"	
Aroclor 1254	ND	0.0208	0.0417	"	"	"	"	
Aroclor 1260	ND	0.0208	0.0417	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 58 %*	*Limits: 40-135 %*	"	"	"	
B20-SP1-20140107 (A4A0131-02)			**Matrix: Water**		**Batch: 4010401**			**C-07**
Aroclor 1016	ND	0.0190	0.0381	ug/L	1	01/21/14 11:16	EPA 8082A	
Aroclor 1221	ND	0.0190	0.0381	"	"	"	"	
Aroclor 1232	ND	0.0190	0.0381	"	"	"	"	
Aroclor 1242	**0.0552**	0.0190	0.0381	"	"	"	"	P-10
Aroclor 1248	ND	0.0190	0.0381	"	"	"	"	
Aroclor 1254	**0.0754**	0.0190	0.0381	"	"	"	"	P-10
Aroclor 1260	**0.0425**	0.0190	0.0381	"	"	"	"	P-10
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 52 %*	*Limits: 40-135 %*	"	"	"	
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**		**Batch: 4010401**			**C-07**
Aroclor 1016	ND	0.0192	0.0385	ug/L	1	01/21/14 11:34	EPA 8082A	
Aroclor 1221	ND	0.0192	0.0385	"	"	"	"	
Aroclor 1232	ND	0.0192	0.0385	"	"	"	"	
Aroclor 1242	**0.243**	0.0192	0.0385	"	"	"	"	P-10
Aroclor 1248	ND	0.0192	0.0385	"	"	"	"	
Aroclor 1254	**0.235**	0.0192	0.0385	"	"	"	"	P-10
Aroclor 1260	**0.109**	0.0192	0.0385	"	"	"	"	P-10
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 61 %*	*Limits: 40-135 %*	"	"	"	
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**		**Batch: 4010401**			**C-07**
Aroclor 1016	ND	0.0204	0.0408	ug/L	1	01/21/14 11:52	EPA 8082A	
Aroclor 1221	ND	0.0204	0.0408	"	"	"	"	
Aroclor 1232	ND	0.0204	0.0408	"	"	"	"	
Aroclor 1242	**0.206**	0.0204	0.0408	"	"	"	"	P-10
Aroclor 1248	ND	0.0204	0.0408	"	"	"	"	
Aroclor 1254	**0.297**	0.0204	0.0408	"	"	"	"	P-10
Aroclor 1260	**0.130**	0.0204	0.0408	"	"	"	"	P-10

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

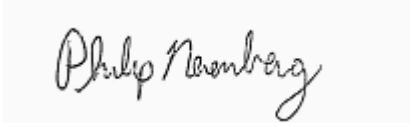
Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**		**Batch: 4010401**			**C-07**
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 52 %*	*Limits: 40-135 %*	1	"	EPA 8082A	

Apex Laboratories



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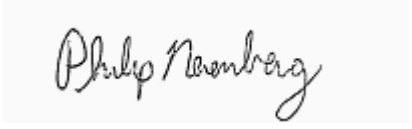
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01RE1)			**Matrix: Water**		**Batch: 4010254**			**C-05**
Aldrin	ND	0.00971	0.0194	ug/L	1	01/14/14 16:32	EPA 8081B	
alpha-BHC	ND	0.00971	0.0194	"	"	"	"	
beta-BHC	ND	0.00971	0.0194	"	"	"	"	
delta-BHC	ND	0.00971	0.0194	"	"	"	"	
gamma-BHC (Lindane)	ND	0.00971	0.0194	"	"	"	"	
cis-Chlordane	ND	0.00971	0.0194	"	"	"	"	
trans-Chlordane	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDD	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDE	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDT	ND	0.00971	0.0194	"	"	"	"	
Dieldrin	ND	0.00971	0.0194	"	"	"	"	
Endosulfan I	ND	0.0485	0.0485	"	"	"	"	R-07
Endosulfan II	ND	0.00971	0.0194	"	"	"	"	
Endosulfan sulfate	ND	0.00971	0.0194	"	"	"	"	
Endrin	ND	0.00971	0.0194	"	"	"	"	
Endrin Aldehyde	ND	0.00971	0.0194	"	"	"	"	
Endrin ketone	ND	0.00971	0.0194	"	"	"	"	
Heptachlor	ND	0.00971	0.0194	"	"	"	"	
Heptachlor epoxide	ND	0.00971	0.0194	"	"	"	"	
Methoxychlor	ND	0.0291	0.0583	"	"	"	"	
Chlordane (Technical)	ND	0.365	0.728	"	"	"	"	
Toxaphene (Total)	ND	0.365	0.728	"	"	"	"	
cis-Nonachlor	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDD	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDE	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDT	ND	0.00971	0.0194	"	"	"	"	
Hexachlorobenzene	ND	0.0291	0.0583	"	"	"	"	
Hexachlorobutadiene	ND	0.00971	0.0194	"	"	"	"	
Mirex	ND	0.00971	0.0194	"	"	"	"	
Oxychlordane	ND	0.00971	0.0194	"	"	"	"	
trans-Nonachlor	ND	0.00971	0.0194	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 89 %*	*Limits: 25-140 %*	"	"	"	
Decachlorobiphenyl (Surr)			*88 %*	*Limits: 30-135 %*	"	"	"	

Apex Laboratories



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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B20-SP1-20140107 (A4A0131-02RE1)			**Matrix: Water**		**Batch: 4010254**			**C-05**
Aldrin	ND	0.00952	0.0190	ug/L	1	01/14/14 16:49	EPA 8081B	
alpha-BHC	ND	0.00952	0.0190	"	"	"	"	
beta-BHC	ND	0.00952	0.0190	"	"	"	"	
delta-BHC	ND	0.00952	0.0190	"	"	"	"	
gamma-BHC (Lindane)	ND	0.00952	0.0190	"	"	"	"	
cis-Chlordane	ND	0.00952	0.0190	"	"	"	"	
trans-Chlordane	ND	0.00952	0.0190	"	"	"	"	
4,4'-DDD	ND	0.00952	0.0190	"	"	"	"	
4,4'-DDE	ND	0.00952	0.0190	"	"	"	"	
4,4'-DDT	ND	0.0190	0.0190	"	"	"	"	
Dieldrin	ND	0.00952	0.0190	"	"	"	"	
Endosulfan I	ND	0.0476	0.0476	"	"	"	"	R-07
Endosulfan II	ND	0.00952	0.0190	"	"	"	"	
Endosulfan sulfate	ND	0.00952	0.0190	"	"	"	"	
Endrin	ND	0.00952	0.0190	"	"	"	"	
Endrin Aldehyde	ND	0.00952	0.0190	"	"	"	"	
Endrin ketone	ND	0.00952	0.0190	"	"	"	"	
Heptachlor	ND	0.00952	0.0190	"	"	"	"	
Heptachlor epoxide	ND	0.00952	0.0190	"	"	"	"	
Methoxychlor	ND	0.0286	0.0571	"	"	"	"	
Chlordane (Technical)	ND	0.358	0.714	"	"	"	"	
Toxaphene (Total)	ND	0.358	0.714	"	"	"	"	
cis-Nonachlor	ND	0.00952	0.0190	"	"	"	"	
2,4'-DDD	ND	0.00952	0.0190	"	"	"	"	
2,4'-DDE	ND	0.00952	0.0190	"	"	"	"	
2,4'-DDT	ND	0.00952	0.0190	"	"	"	"	
Hexachlorobenzene	ND	0.0286	0.0571	"	"	"	"	
Hexachlorobutadiene	ND	0.00952	0.0190	"	"	"	"	
Mirex	ND	0.00952	0.0190	"	"	"	"	
Oxychlordane	ND	0.00952	0.0190	"	"	"	"	
trans-Nonachlor	ND	0.00952	0.0190	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 79 %*	*Limits: 25-140 %*	"	"	"	
Decachlorobiphenyl (Surr)			*72 %*	*Limits: 30-135 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-SP1-20140107 (A4A0131-03RE1)			**Matrix: Water**		**Batch: 4010254**			**C-05**
Aldrin	ND	0.00971	0.0194	ug/L	1	01/14/14 17:07	EPA 8081B	
alpha-BHC	ND	0.00971	0.0194	"	"	"	"	
beta-BHC	ND	0.00971	0.0194	"	"	"	"	
delta-BHC	ND	0.00971	0.0194	"	"	"	"	
gamma-BHC (Lindane)	ND	0.00971	0.0194	"	"	"	"	
cis-Chlordane	ND	0.00971	0.0194	"	"	"	"	
trans-Chlordane	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDD	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDE	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDT	ND	0.0291	0.0291	"	"	"	"	R-07
Dieldrin	ND	0.00971	0.0194	"	"	"	"	
Endosulfan I	ND	0.0485	0.0485	"	"	"	"	R-07
Endosulfan II	ND	0.00971	0.0194	"	"	"	"	
Endosulfan sulfate	ND	0.00971	0.0194	"	"	"	"	
Endrin	ND	0.00971	0.0194	"	"	"	"	
Endrin Aldehyde	ND	0.00971	0.0194	"	"	"	"	
Endrin ketone	ND	0.00971	0.0194	"	"	"	"	
Heptachlor	ND	0.00971	0.0194	"	"	"	"	
Heptachlor epoxide	ND	0.00971	0.0194	"	"	"	"	
Methoxychlor	ND	0.0291	0.0583	"	"	"	"	
Chlordane (Technical)	ND	0.365	0.728	"	"	"	"	
Toxaphene (Total)	ND	0.365	0.728	"	"	"	"	
cis-Nonachlor	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDD	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDE	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDT	ND	0.00971	0.0194	"	"	"	"	
Hexachlorobenzene	ND	0.0291	0.0583	"	"	"	"	
Hexachlorobutadiene	ND	0.00971	0.0194	"	"	"	"	
Mirex	ND	0.00971	0.0194	"	"	"	"	
Oxychlordane	ND	0.00971	0.0194	"	"	"	"	
trans-Nonachlor	ND	0.00971	0.0194	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 85 %*	*Limits: 25-140 %*	"	"	"	
Decachlorobiphenyl (Surr)			*94 %*	*Limits: 30-135 %*	"	"	"	

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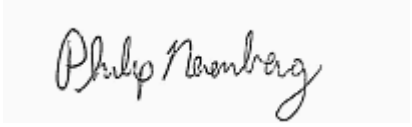

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B19-SP-19-1-20140107 (A4A0131-04RE1)			**Matrix: Water**		**Batch: 4010254**			**C-05**
Aldrin	ND	0.00971	0.0194	ug/L	1	01/14/14 17:25	EPA 8081B	
alpha-BHC	ND	0.00971	0.0194	"	"	"	"	
beta-BHC	ND	0.00971	0.0194	"	"	"	"	
delta-BHC	ND	0.00971	0.0194	"	"	"	"	
gamma-BHC (Lindane)	ND	0.00971	0.0194	"	"	"	"	
cis-Chlordane	ND	0.00971	0.0194	"	"	"	"	
trans-Chlordane	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDD	**0.208**	0.00971	0.0194	"	"	"	"	
4,4'-DDE	**0.170**	0.00971	0.0194	"	"	"	"	
4,4'-DDT	**0.220**	0.00971	0.0194	"	"	"	"	
Dieldrin	ND	0.0194	0.0194	"	"	"	"	
Endosulfan I	ND	0.165	0.165	"	"	"	"	R-07
Endosulfan II	ND	0.00971	0.0194	"	"	"	"	
Endosulfan sulfate	ND	0.00971	0.0194	"	"	"	"	
Endrin	ND	0.00971	0.0194	"	"	"	"	
Endrin Aldehyde	ND	0.00971	0.0194	"	"	"	"	
Endrin ketone	ND	0.00971	0.0194	"	"	"	"	
Heptachlor	ND	0.00971	0.0194	"	"	"	"	
Heptachlor epoxide	ND	0.0291	0.0291	"	"	"	"	R-07
Methoxychlor	ND	0.0291	0.0583	"	"	"	"	
Chlordane (Technical)	ND	0.365	0.728	"	"	"	"	
Toxaphene (Total)	ND	0.365	0.728	"	"	"	"	
cis-Nonachlor	ND	0.0291	0.0291	"	"	"	"	R-07
2,4'-DDD	ND	0.0777	0.0777	"	"	"	"	R-07
2,4'-DDE	ND	0.0388	0.0388	"	"	"	"	R-07
2,4'-DDT	ND	0.0485	0.0485	"	"	"	"	R-07
Hexachlorobenzene	ND	0.0291	0.0583	"	"	"	"	
Hexachlorobutadiene	ND	0.00971	0.0194	"	"	"	"	
Mirex	ND	0.00971	0.0194	"	"	"	"	
Oxychlordane	ND	0.00971	0.0194	"	"	"	"	
trans-Nonachlor	ND	0.00971	0.0194	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 73 %*	*Limits: 25-140 %*	"	"	"	
Decachlorobiphenyl (Surr)			*79 %*	*Limits: 30-135 %*	"	"	"	

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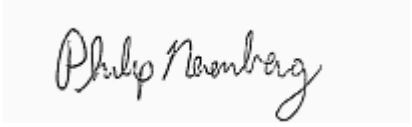

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01RE1)			**Matrix: Water**		**Batch: 4010262**			
Acenaphthene	ND	0.0777	0.155	ug/L	4	01/15/14 11:43	EPA 8270D P/P	
Acenaphthylene	ND	0.0777	0.155	"	"	"	"	
Anthracene	ND	0.0777	0.155	"	"	"	"	
Benz(a)anthracene	ND	0.0777	0.155	"	"	"	"	
Benzo(a)pyrene	ND	0.117	0.233	"	"	"	"	
Benzo(b)fluoranthene	ND	0.117	0.233	"	"	"	"	
Benzo(k)fluoranthene	ND	0.117	0.233	"	"	"	"	
Benzo(g,h,i)perylene	**0.0847**	0.0777	0.155	"	"	"	"	J
Chrysene	**0.105**	0.0777	0.155	"	"	"	"	J
Dibenz(a,h)anthracene	ND	0.0777	0.155	"	"	"	"	
Fluoranthene	**0.121**	0.0777	0.155	"	"	"	"	J
Fluorene	ND	0.0777	0.155	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0777	0.155	"	"	"	"	
1-Methylnaphthalene	ND	0.155	0.311	"	"	"	"	
2-Methylnaphthalene	ND	0.155	0.311	"	"	"	"	
Naphthalene	ND	0.155	0.311	"	"	"	"	
Phenanthrene	**0.122**	0.0777	0.155	"	"	"	"	J
Pyrene	**0.174**	0.0777	0.155	"	"	"	"	
Carbazole	ND	0.117	0.233	"	"	"	"	
Dibenzofuran	ND	0.0777	0.155	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	8.54	17.1	"	"	"	"	
Butyl benzyl phthalate	ND	11.7	23.3	"	"	"	"	
Diethylphthalate	ND	11.7	23.3	"	"	"	"	
Dimethylphthalate	ND	11.7	23.3	"	"	"	"	
Di-n-butylphthalate	ND	11.7	23.3	"	"	"	"	
Di-n-octyl phthalate	ND	11.7	23.3	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 58 %*	*Limits: 35-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*66 %*	*Limits: 30-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*79 %*	*Limits: 50-125 %*	"	"	"	

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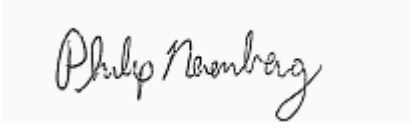

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B20-SP1-20140107 (A4A0131-02RE1)			**Matrix: Water**		**Batch: 4010262**			**R-04**
Acenaphthene	ND	0.101	0.202	ug/L	10	01/15/14 10:31	EPA 8270D P/P	
Acenaphthylene	ND	0.101	0.202	"	"	"	"	
Anthracene	ND	0.101	0.202	"	"	"	"	
Benz(a)anthracene	ND	0.101	0.202	"	"	"	"	
Benzo(a)pyrene	ND	0.152	0.303	"	"	"	"	
Benzo(b)fluoranthene	ND	0.152	0.303	"	"	"	"	
Benzo(k)fluoranthene	ND	0.152	0.303	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.101	0.202	"	"	"	"	
Chrysene	**0.124**	0.101	0.202	"	"	"	"	J
Dibenz(a,h)anthracene	ND	0.101	0.202	"	"	"	"	
Fluoranthene	**0.149**	0.101	0.202	"	"	"	"	J
Fluorene	ND	0.101	0.202	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.101	0.202	"	"	"	"	
1-Methylnaphthalene	ND	0.202	0.404	"	"	"	"	
2-Methylnaphthalene	ND	0.202	0.404	"	"	"	"	
Naphthalene	ND	0.202	0.404	"	"	"	"	
Phenanthrene	**0.115**	0.101	0.202	"	"	"	"	J
Pyrene	**0.192**	0.101	0.202	"	"	"	"	J
Carbazole	ND	0.152	0.303	"	"	"	"	
Dibenzofuran	ND	0.101	0.202	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	11.1	22.2	"	"	"	"	
Butyl benzyl phthalate	ND	15.2	30.3	"	"	"	"	
Diethylphthalate	ND	15.2	30.3	"	"	"	"	
Dimethylphthalate	ND	15.2	30.3	"	"	"	"	
Di-n-butylphthalate	ND	15.2	30.3	"	"	"	"	
Di-n-octyl phthalate	ND	15.2	30.3	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 52 %*	*Limits: 35-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*64 %*	*Limits: 30-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*81 %*	*Limits: 50-125 %*	"	"	"	

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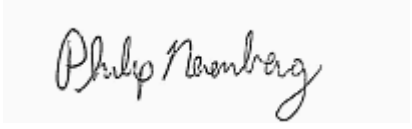

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-SP1-20140107 (A4A0131-03RE1)			**Matrix: Water**		**Batch: 4010262**			
Acenaphthene	ND	0.0825	0.165	ug/L	4	01/15/14 11:07	EPA 8270D P/P	
Acenaphthylene	ND	0.0825	0.165	"	"	"	"	
Anthracene	ND	0.0825	0.165	"	"	"	"	
Benz(a)anthracene	**0.138**	0.0825	0.165	"	"	"	"	J
Benzo(a)pyrene	ND	0.124	0.247	"	"	"	"	
Benzo(b)fluoranthene	**0.214**	0.124	0.247	"	"	"	"	J
Benzo(k)fluoranthene	ND	0.124	0.247	"	"	"	"	
Benzo(g,h,i)perylene	**0.151**	0.0825	0.165	"	"	"	"	J
Chrysene	**0.198**	0.0825	0.165	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0825	0.165	"	"	"	"	
Fluoranthene	**0.323**	0.0825	0.165	"	"	"	"	
Fluorene	ND	0.0825	0.165	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**0.117**	0.0825	0.165	"	"	"	"	J
1-Methylnaphthalene	ND	0.165	0.330	"	"	"	"	
2-Methylnaphthalene	ND	0.165	0.330	"	"	"	"	
Naphthalene	ND	0.165	0.330	"	"	"	"	
Phenanthrene	**0.151**	0.0825	0.165	"	"	"	"	J
Pyrene	**0.336**	0.0825	0.165	"	"	"	"	
Carbazole	ND	0.124	0.247	"	"	"	"	
Dibenzofuran	ND	0.0825	0.165	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	9.07	18.1	"	"	"	"	
Butyl benzyl phthalate	ND	12.4	24.7	"	"	"	"	
Diethylphthalate	ND	12.4	24.7	"	"	"	"	
Dimethylphthalate	ND	12.4	24.7	"	"	"	"	
Di-n-butylphthalate	ND	12.4	24.7	"	"	"	"	
Di-n-octyl phthalate	ND	12.4	24.7	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 70 %*	*Limits: 35-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*80 %*	*Limits: 30-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*85 %*	*Limits: 50-125 %*	"	"	"	

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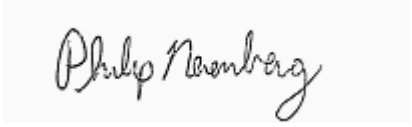

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503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**		**Batch: 4010262**			
Acenaphthene	ND	0.825	1.65	ug/L	40	01/14/14 18:10	EPA 8270D P/P	
Acenaphthylene	ND	0.825	1.65	"	"	"	"	
Anthracene	ND	0.825	1.65	"	"	"	"	
Benz(a)anthracene	**1.04**	0.825	1.65	"	"	"	"	J
Benzo(a)pyrene	ND	1.24	2.47	"	"	"	"	
Benzo(b)fluoranthene	**2.23**	1.24	2.47	"	"	"	"	J
Benzo(k)fluoranthene	ND	1.24	2.47	"	"	"	"	
Benzo(g,h,i)perylene	**1.17**	0.825	1.65	"	"	"	"	J
Chrysene	**1.66**	0.825	1.65	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.825	1.65	"	"	"	"	
Fluoranthene	**1.65**	0.825	1.65	"	"	"	"	
Fluorene	ND	0.825	1.65	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**1.02**	0.825	1.65	"	"	"	"	J
1-Methylnaphthalene	ND	1.65	3.30	"	"	"	"	
2-Methylnaphthalene	ND	1.65	3.30	"	"	"	"	
Naphthalene	ND	1.65	3.30	"	"	"	"	
Phenanthrene	ND	0.825	1.65	"	"	"	"	
Pyrene	**1.87**	0.825	1.65	"	"	"	"	
Carbazole	ND	1.24	2.47	"	"	"	"	
Dibenzofuran	ND	0.825	1.65	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	90.7	181	"	"	"	"	
Butyl benzyl phthalate	ND	124	247	"	"	"	"	
Diethylphthalate	ND	124	247	"	"	"	"	
Dimethylphthalate	ND	124	247	"	"	"	"	
Di-n-butylphthalate	ND	124	247	"	"	"	"	
Di-n-octyl phthalate	ND	124	247	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 62 %*	*Limits: 35-120 %*	"	"	"	*S-05*
2-Fluorobiphenyl (Surr)			*68 %*	*Limits: 30-120 %*	"	"	"	*S-05*
p-Terphenyl-d14 (Surr)			*74 %*	*Limits: 50-125 %*	"	"	"	*S-05*

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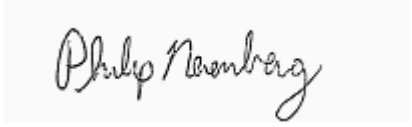

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01)			**Matrix: Water**					
Batch: 4010501								
Aluminum	**1880**	25.0	50.0	ug/L	1	01/24/14 13:57	EPA 6020A	
Antimony	**0.667**	0.500	1.00	"	"	"	"	J
Arsenic	**0.711**	0.500	1.00	"	"	"	"	J
Cadmium	**0.389**	0.0400	0.200	"	"	"	"	
Chromium	**19.6**	0.500	1.00	"	"	"	"	
Copper	**22.5**	0.500	1.00	"	"	"	"	
Lead	**18.2**	0.100	0.200	"	"	"	"	
Manganese	**203**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**3.66**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**210**	2.00	4.00	"	"	"	"	
B20-SP1-20140107 (A4A0131-02)			**Matrix: Water**					
Batch: 4010501								
Aluminum	**6040**	25.0	50.0	ug/L	1	01/24/14 14:00	EPA 6020A	
Antimony	**1.77**	0.500	1.00	"	"	"	"	
Arsenic	**1.61**	0.500	1.00	"	"	"	"	
Cadmium	**1.03**	0.0400	0.200	"	"	"	"	
Chromium	**65.4**	0.500	1.00	"	"	"	"	
Copper	**58.8**	0.500	1.00	"	"	"	"	
Lead	**77.9**	0.100	0.200	"	"	"	"	
Manganese	**744**	0.500	1.00	"	"	"	"	
Mercury	**0.0785**	0.0400	0.0800	"	"	"	"	J
Nickel	**9.19**	0.500	1.00	"	"	"	"	
Silver	**0.111**	0.100	0.200	"	"	"	"	J
Zinc	**381**	2.00	4.00	"	"	"	"	
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**					
Batch: 4010501								
Aluminum	**5140**	25.0	50.0	ug/L	1	01/24/14 14:08	EPA 6020A	
Antimony	**2.28**	0.500	1.00	"	"	"	"	
Arsenic	**5.13**	0.500	1.00	"	"	"	"	
Cadmium	**1.48**	0.0400	0.200	"	"	"	"	
Chromium	**50.1**	0.500	1.00	"	"	"	"	
Copper	**86.3**	0.500	1.00	"	"	"	"	
Lead	**122**	0.100	0.200	"	"	"	"	

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4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**					
Manganese	**2230**	0.500	1.00	ug/L	1	"	EPA 6020A	
Mercury	**0.146**	0.0400	0.0800	"	"	"	"	
Nickel	**14.9**	0.500	1.00	"	"	"	"	
Silver	**0.222**	0.100	0.200	"	"	"	"	
Zinc	**609**	2.00	4.00	"	"	"	"	
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**					
Batch: 4010501								
Aluminum	**23100**	25.0	50.0	ug/L	1	01/24/14 14:17	EPA 6020A	
Antimony	**17.9**	0.500	1.00	"	"	"	"	
Arsenic	**15.1**	0.500	1.00	"	"	"	"	
Cadmium	**18.0**	0.0400	0.200	"	"	"	"	
Chromium	**233**	0.500	1.00	"	"	"	"	
Copper	**938**	0.500	1.00	"	"	"	"	
Lead	**1680**	0.100	0.200	"	"	"	"	
Manganese	**3440**	2.50	5.00	"	5	01/24/14 15:40	"	
Mercury	**2.86**	0.200	0.400	"	"	"	"	
Nickel	**120**	0.500	1.00	"	1	01/24/14 14:17	"	
Silver	**1.93**	0.100	0.200	"	"	"	"	
Zinc	**6040**	10.0	20.0	"	5	01/24/14 15:40	"	

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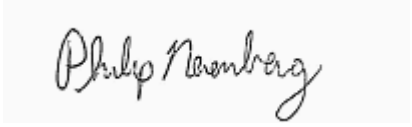

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01)			**Matrix: Water**					
Batch: 4010510								
Aluminum	**41.4**	25.0	50.0	ug/L	1	01/24/14 15:22	EPA 6020A (Diss)	J
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.0778**	0.0400	0.200	"	"	"	"	J
Chromium	**0.500**	0.500	1.00	"	"	"	"	J
Copper	**4.34**	0.500	1.00	"	"	"	"	
Lead	**0.356**	0.100	0.200	"	"	"	"	
Manganese	**18.5**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**1.09**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**45.2**	2.00	4.00	"	"	"	"	
B20-SP1-20140107 (A4A0131-02)			**Matrix: Water**					
Batch: 4010510								
Aluminum	**51.2**	25.0	50.0	ug/L	1	01/24/14 15:25	EPA 6020A (Diss)	
Antimony	**0.511**	0.500	1.00	"	"	"	"	J
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.0444**	0.0400	0.200	"	"	"	"	J
Chromium	**0.722**	0.500	1.00	"	"	"	"	J
Copper	**5.53**	0.500	1.00	"	"	"	"	
Lead	**0.333**	0.100	0.200	"	"	"	"	
Manganese	**14.8**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**0.822**	0.500	1.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**11.4**	2.00	4.00	"	"	"	"	
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**					
Batch: 4010510								
Aluminum	ND	25.0	50.0	ug/L	1	01/24/14 15:28	EPA 6020A (Diss)	
Antimony	**0.578**	0.500	1.00	"	"	"	"	J
Arsenic	**2.27**	0.500	1.00	"	"	"	"	
Cadmium	**0.244**	0.0400	0.200	"	"	"	"	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**6.38**	0.500	1.00	"	"	"	"	
Lead	**0.256**	0.100	0.200	"	"	"	"	

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4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**					
Manganese	**1120**	0.500	1.00	ug/L	1	"	EPA 6020A (Diss)	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**2.63**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**148**	2.00	4.00	"	"	"	"	
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**					
Batch: 4010510								
Aluminum	**56.4**	25.0	50.0	ug/L	1	01/24/14 15:31	EPA 6020A (Diss)	
Antimony	**3.68**	0.500	1.00	"	"	"	"	
Arsenic	**0.911**	0.500	1.00	"	"	"	"	J
Cadmium	**0.0444**	0.0400	0.200	"	"	"	"	J
Chromium	**3.44**	0.500	1.00	"	"	"	"	
Copper	**13.6**	0.500	1.00	"	"	"	"	
Lead	**1.36**	0.100	0.200	"	"	"	"	
Manganese	**26.4**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**1.63**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**9.56**	2.00	4.00	"	"	"	"	

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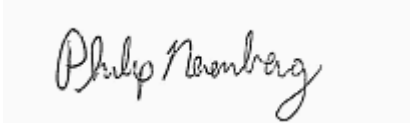

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SP1-20140107 (A4A0131-01)			**Matrix: Water**					
Batch: 4010186								
Total Suspended Solids	**85.0**	5.00	5.00	mg/L	1	01/13/14 11:10	SM 2540 D	
Batch: 4010267								
Total Organic Carbon	**6.70**	1.00	1.00	"	"	01/14/14 15:08	SM 5310 B	
B20-SP1-20140107 (A4A0131-02)			**Matrix: Water**					
Batch: 4010186								
Total Suspended Solids	**215**	5.00	5.00	mg/L	1	01/13/14 11:10	SM 2540 D	
Batch: 4010267								
Total Organic Carbon	**6.42**	1.00	1.00	"	"	01/14/14 15:33	SM 5310 B	
B18-SP1-20140107 (A4A0131-03)			**Matrix: Water**					
Batch: 4010186								
Total Suspended Solids	**200**	10.0	10.0	mg/L	1	01/13/14 11:10	SM 2540 D	
Batch: 4010267								
Total Organic Carbon	**6.11**	1.00	1.00	"	"	01/14/14 15:58	SM 5310 B	
B19-SP-19-1-20140107 (A4A0131-04)			**Matrix: Water**					
Batch: 4010186								
Total Suspended Solids	**1020**	20.0	20.0	mg/L	1	01/13/14 11:10	SM 2540 D	
Batch: 4010267								
Total Organic Carbon	**9.73**	1.00	1.00	"	"	01/14/14 16:23	SM 5310 B	

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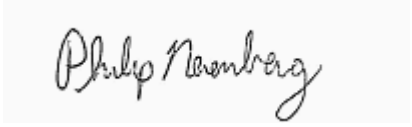

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Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010275 - EPA 3510C (Fuels/Acid Ext.)									**Water**			
Blank (4010275-BLK1)					Prepared: 01/14/14 11:14 Analyzed: 01/14/14 21:55							
NWTPH-Dx												
Diesel	ND	0.0909	0.182	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 86 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS (4010275-BS1)					Prepared: 01/14/14 11:14 Analyzed: 01/14/14 22:13							
NWTPH-Dx												
Diesel	1.04	0.100	0.200	mg/L	1	1.25	---	83	58-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 87 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS Dup (4010275-BSD1)					Prepared: 01/14/14 11:14 Analyzed: 01/14/14 22:31							**Q-19**
NWTPH-Dx												
Diesel	1.08	0.100	0.200	mg/L	1	1.25	---	86	58-115%	4	20%	
Surr: o-Terphenyl (Surr)			*Recovery: 88 %*	*Limits: 50-150 %*		*Dilution: 1x*						

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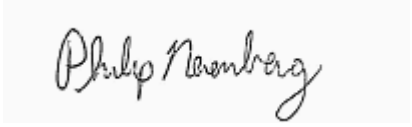

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QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010203 - EPA 5030B								**Water**				
Blank (4010203-BLK1)					Prepared: 01/10/14 10:00 Analyzed: 01/10/14 12:01							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 84 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*102 %*	*50-150 %*			*"*					
LCS (4010203-BS2)					Prepared: 01/10/14 10:00 Analyzed: 01/10/14 11:35							
NWTPH-Gx (MS)												
Gasoline Range Organics	0.415	0.0500	0.100	mg/L	1	0.500	---	83	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 89 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*100 %*	*50-150 %*			*"*					

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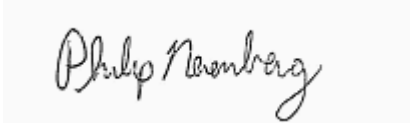

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4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010401 - EPA 3510C (Neutral pH)								**Water**				
Blank (4010401-BLK1)					Prepared: 01/20/14 10:39 Analyzed: 01/21/14 10:04							**C-07**
EPA 8082A												
Aroclor 1016	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1221	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 74 %*	*Limits: 40-135 %*		*Dilution: 1x*						
LCS (4010401-BS1)					Prepared: 01/20/14 10:39 Analyzed: 01/21/14 10:22							**C-07**
EPA 8082A												
Aroclor 1016	0.729	0.0100	0.0200	ug/L	1	1.25	---	58	40-140%	---	---	
Aroclor 1260	0.930	0.0100	0.0200	"	"	"	---	74	"	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 70 %*	*Limits: 40-135 %*		*Dilution: 1x*						
LCS Dup (4010401-BSD1)					Prepared: 01/20/14 10:39 Analyzed: 01/21/14 10:40							**C-07, Q-19**
EPA 8082A												
Aroclor 1016	0.737	0.0100	0.0200	ug/L	1	1.25	---	59	40-140%	1	30%	
Aroclor 1260	0.866	0.0100	0.0200	"	"	"	---	69	"	7	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 61 %*	*Limits: 40-135 %*		*Dilution: 1x*						

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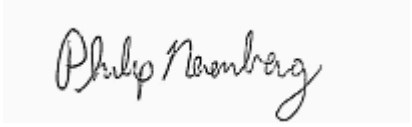

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010254 - EPA 3510C (Neutral pH)/3640A (GPC)							**Water**					
Blank (4010254-BLK1)					Prepared: 01/13/14 07:05 Analyzed: 01/14/14 10:12							**C-05**
EPA 8081B												
Aldrin	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
alpha-BHC	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
beta-BHC	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
delta-BHC	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
4,4'-DDT	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Dieldrin	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endosulfan I	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endosulfan II	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endrin	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endrin ketone	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Heptachlor	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Methoxychlor	ND	0.0273	0.0545	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	0.342	0.682	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	0.342	0.682	"	"	---	---	---	---	---	---	
cis-Nonachlor	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
2,4'-DDD	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
2,4'-DDE	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
2,4'-DDT	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	0.0273	0.0545	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Mirex	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Oxychlordane	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	

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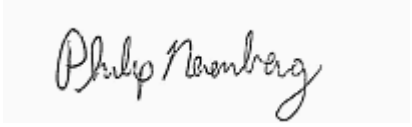

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010254 - EPA 3510C (Neutral pH)/3640A (GPC)							**Water**					
Blank (4010254-BLK1)					Prepared: 01/13/14 07:05 Analyzed: 01/14/14 10:12							**C-05**
trans-Nonachlor	ND	0.00909	0.0182	ug/L	"	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 58 %*		*Limits: 25-140 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*73 %*		*30-135 %*				*"*			
LCS (4010254-BS1)					Prepared: 01/13/14 07:05 Analyzed: 01/14/14 10:30							**C-05**
EPA 8081B												
Aldrin	0.360	0.0100	0.0200	ug/L	1	0.500	---	72	25-140%	---	---	
alpha-BHC	0.372	0.0100	0.0200	"	"	"	---	74	60-130%	---	---	
beta-BHC	0.368	0.0100	0.0200	"	"	"	---	74	65-125%	---	---	
delta-BHC	0.417	0.0100	0.0200	"	"	"	---	83	45-135%	---	---	
gamma-BHC (Lindane)	0.390	0.0100	0.0200	"	"	"	---	78	25-135%	---	---	
cis-Chlordane	0.388	0.0100	0.0200	"	"	"	---	78	65-125%	---	---	
trans-Chlordane	0.400	0.0100	0.0200	"	"	"	---	80	60-125%	---	---	
4,4'-DDD	0.404	0.0100	0.0200	"	"	"	---	81	25-150%	---	---	
4,4'-DDE	0.394	0.0100	0.0200	"	"	"	---	79	35-140%	---	---	
4,4'-DDT	0.425	0.0100	0.0200	"	"	"	---	85	45-140%	---	---	
Dieldrin	0.410	0.0100	0.0200	"	"	"	---	82	60-130%	---	---	
Endosulfan I	0.401	0.0100	0.0200	"	"	"	---	80	50-110%	---	---	
Endosulfan II	0.416	0.0100	0.0200	"	"	"	---	83	30-130%	---	---	
Endosulfan sulfate	0.403	0.0100	0.0200	"	"	"	---	81	55-135%	---	---	
Endrin	0.428	0.0100	0.0200	"	"	"	---	86	"	---	---	
Endrin Aldehyde	0.416	0.0100	0.0200	"	"	"	---	83	"	---	---	
Endrin ketone	0.402	0.0100	0.0200	"	"	"	---	80	75-125%	---	---	
Heptachlor	0.370	0.0100	0.0200	"	"	"	---	74	40-130%	---	---	
Heptachlor epoxide	0.405	0.0100	0.0200	"	"	"	---	81	60-130%	---	---	
Methoxychlor	0.404	0.0300	0.0600	"	"	"	---	81	55-150%	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 66 %*		*Limits: 25-140 %*				*Dilution: 1x*			
Decachlorobiphenyl (Surr)			*75 %*		*30-135 %*				*"*			
LCS (4010254-BS2)					Prepared: 01/13/14 07:08 Analyzed: 01/14/14 10:47							**C-05**
EPA 8081B												
cis-Nonachlor	0.468	0.0100	0.0200	ug/L	1	0.500	---	94	25-120%	---	---	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010254 - EPA 3510C (Neutral pH)/3640A (GPC)							**Water**					
LCS (4010254-BS2)					Prepared: 01/13/14 07:08		Analyzed: 01/14/14 10:47					**C-05**
2,4'-DDD	0.448	0.0100	0.0200	ug/L	"	"	---	90	30-135%	---	---	
2,4'-DDE	0.433	0.0100	0.0200	"	"	"	---	87	50-140%	---	---	
2,4'-DDT	0.441	0.0100	0.0200	"	"	"	---	88	45-140%	---	---	
Hexachlorobenzene	0.361	0.0300	0.0600	"	"	"	---	72	25-120%	---	---	
Hexachlorobutadiene	0.139	0.0100	0.0200	"	"	"	---	28	"	---	---	Q-41
Mirex	0.408	0.0100	0.0200	"	"	"	---	82	"	---	---	
Oxychlordane	0.414	0.0100	0.0200	"	"	"	---	83	"	---	---	
trans-Nonachlor	0.428	0.0100	0.0200	"	"	"	---	86	"	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 58 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*77 %*	*30-135 %*			*"*					
LCS Dup (4010254-BSD1)					Prepared: 01/13/14 07:05		Analyzed: 01/14/14 11:05					**C-05, Q-19**
EPA 8081B												
Aldrin	0.344	0.0100	0.0200	ug/L	1	0.500	---	69	25-140%	4	30%	
alpha-BHC	0.402	0.0100	0.0200	"	"	"	---	80	60-130%	8	30%	
beta-BHC	0.379	0.0100	0.0200	"	"	"	---	76	65-125%	3	30%	
delta-BHC	0.422	0.0100	0.0200	"	"	"	---	84	45-135%	1	30%	
gamma-BHC (Lindane)	0.411	0.0100	0.0200	"	"	"	---	82	25-135%	5	30%	
cis-Chlordane	0.392	0.0100	0.0200	"	"	"	---	78	65-125%	1	30%	
trans-Chlordane	0.401	0.0100	0.0200	"	"	"	---	80	60-125%	0.2	30%	
4,4'-DDD	0.395	0.0100	0.0200	"	"	"	---	79	25-150%	2	30%	
4,4'-DDE	0.406	0.0100	0.0200	"	"	"	---	81	35-140%	3	30%	
4,4'-DDT	0.423	0.0100	0.0200	"	"	"	---	85	45-140%	0.5	30%	
Dieldrin	0.405	0.0100	0.0200	"	"	"	---	81	60-130%	1	30%	
Endosulfan I	0.400	0.0100	0.0200	"	"	"	---	80	50-110%	0.3	30%	
Endosulfan II	0.406	0.0100	0.0200	"	"	"	---	81	30-130%	2	30%	
Endosulfan sulfate	0.385	0.0100	0.0200	"	"	"	---	77	55-135%	5	30%	
Endrin	0.416	0.0100	0.0200	"	"	"	---	83	"	3	30%	
Endrin Aldehyde	0.393	0.0100	0.0200	"	"	"	---	79	"	6	30%	
Endrin ketone	0.377	0.0100	0.0200	"	"	"	---	75	75-125%	6	30%	
Heptachlor	0.355	0.0100	0.0200	"	"	"	---	71	40-130%	4	30%	
Heptachlor epoxide	0.397	0.0100	0.0200	"	"	"	---	79	60-130%	2	30%	

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010254 - EPA 3510C (Neutral pH)/3640A (GPC)								**Water**				
LCS Dup (4010254-BSD1)					Prepared: 01/13/14 07:05		Analyzed: 01/14/14 11:05					**C-05, Q-19**
Methoxychlor	0.382	0.0300	0.0600	"	"	"	---	76	55-150%	6	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 55 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*65 %*	*30-135 %*			*"*					
LCS Dup (4010254-BSD2)					Prepared: 01/13/14 07:08		Analyzed: 01/14/14 11:23					**Q-19, C-05**
EPA 8081B												
cis-Nonachlor	0.449	0.0100	0.0200	ug/L	1	0.500	---	90	25-120%	4	30%	
2,4'-DDD	0.429	0.0100	0.0200	"	"	"	---	86	30-135%	4	30%	
2,4'-DDE	0.416	0.0100	0.0200	"	"	"	---	83	50-140%	4	30%	
2,4'-DDT	0.430	0.0100	0.0200	"	"	"	---	86	45-140%	2	30%	
Hexachlorobenzene	0.318	0.0300	0.0600	"	"	"	---	64	25-120%	13	30%	
Mirex	0.403	0.0100	0.0200	"	"	"	---	81	"	1	30%	
Oxychlordane	0.382	0.0100	0.0200	"	"	"	---	76	"	8	30%	
trans-Nonachlor	0.411	0.0100	0.0200	"	"	"	---	82	"	4	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 45 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*73 %*	*30-135 %*			*"*					

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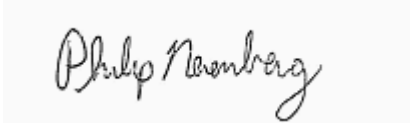

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010262 - EPA 3510C (Acid Extraction)							**Water**					
Blank (4010262-BLK1)					Prepared: 01/14/14 07:12 Analyzed: 01/14/14 15:45							
EPA 8270D P/P												
Acenaphthene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(b+k)fluoranthene(s)	ND	0.0273	0.0545	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Chrysene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluoranthene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluorene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Naphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Phenanthrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Carbazole	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	1.00	2.00	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	1.36	2.73	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	1.36	2.73	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	1.36	2.73	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	1.36	2.73	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	1.36	2.73	"	"	---	---	---	---	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 60 %*	*Limits: 35-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*58 %*	*30-120 %*	*"*
p-Terphenyl-d14 (Surr)	*69 %*	*50-125 %*	*"*

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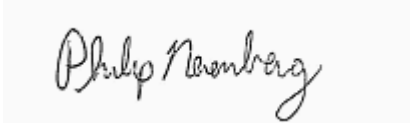

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010262 - EPA 3510C (Acid Extraction)							**Water**					
LCS (4010262-BS1)					Prepared: 01/14/14 07:12 Analyzed: 01/14/14 16:21							
EPA 8270D P/P												
Acenaphthene	2.73	0.0100	0.0200	ug/L	1	4.00	---	68	45-125%	---	---	
Acenaphthylene	2.68	0.0100	0.0200	"	"	"	---	67	50-125%	---	---	
Anthracene	2.93	0.0100	0.0200	"	"	"	---	73	55-125%	---	---	
Benz(a)anthracene	3.18	0.0100	0.0200	"	"	"	---	80	"	---	---	
Benzo(a)pyrene	3.60	0.0150	0.0300	"	"	"	---	90	"	---	---	
Benzo(b)fluoranthene	3.47	0.0150	0.0300	"	"	"	---	87	45-125%	---	---	
Benzo(k)fluoranthene	3.29	0.0150	0.0300	"	"	"	---	82	"	---	---	
Benzo(b+k)fluoranthene(s)	6.82	0.0300	0.0600	"	"	8.00	---	85	"	---	---	
Benzo(g,h,i)perylene	3.46	0.0100	0.0200	"	"	4.00	---	86	40-125%	---	---	
Chrysene	3.25	0.0100	0.0200	"	"	"	---	81	55-125%	---	---	
Dibenz(a,h)anthracene	3.35	0.0100	0.0200	"	"	"	---	84	40-125%	---	---	
Fluoranthene	3.15	0.0100	0.0200	"	"	"	---	79	55-125%	---	---	
Fluorene	2.68	0.0100	0.0200	"	"	"	---	67	50-125%	---	---	
Indeno(1,2,3-cd)pyrene	3.38	0.0100	0.0200	"	"	"	---	84	45-125%	---	---	
1-Methylnaphthalene	2.57	0.0200	0.0400	"	"	"	---	64	45-120%	---	---	
2-Methylnaphthalene	2.60	0.0200	0.0400	"	"	"	---	65	"	---	---	
Naphthalene	2.28	0.0200	0.0400	"	"	"	---	57	40-125%	---	---	
Phenanthrene	2.83	0.0100	0.0200	"	"	"	---	71	50-125%	---	---	
Pyrene	3.12	0.0100	0.0200	"	"	"	---	78	"	---	---	
Carbazole	3.19	0.0150	0.0300	"	"	"	---	80	"	---	---	
Dibenzofuran	2.71	0.0100	0.0200	"	"	"	---	68	55-125%	---	---	
Bis(2-ethylhexyl)phthalate	3.63	1.10	2.20	"	"	"	---	91	40-125%	---	---	
Butyl benzyl phthalate	3.53	1.50	3.00	"	"	"	---	88	45-125%	---	---	
Diethylphthalate	3.16	1.50	3.00	"	"	"	---	79	40-125%	---	---	
Dimethylphthalate	3.19	1.50	3.00	"	"	"	---	80	25-125%	---	---	
Di-n-butylphthalate	3.20	1.50	3.00	"	"	"	---	80	55-125%	---	---	
Di-n-octyl phthalate	3.40	1.50	3.00	"	"	"	---	85	35-125%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 55 %*	*Limits: 35-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*56 %*	*30-120 %*	*"*
p-Terphenyl-d14 (Surr)	*73 %*	*50-125 %*	*"*

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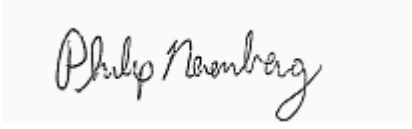

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010262 - EPA 3510C (Acid Extraction)							**Water**					
LCS Dup (4010262-BSD1)					Prepared: 01/14/14 07:12		Analyzed: 01/14/14 16:58					**Q-19**
EPA 8270D P/P												
Acenaphthene	2.73	0.0100	0.0200	ug/L	1	4.00	---	68	45-125%	0.2	30%	
Acenaphthylene	2.70	0.0100	0.0200	"	"	"	---	67	50-125%	0.6	30%	
Anthracene	3.07	0.0100	0.0200	"	"	"	---	77	55-125%	5	30%	
Benz(a)anthracene	3.34	0.0100	0.0200	"	"	"	---	83	"	5	30%	
Benzo(a)pyrene	3.74	0.0150	0.0300	"	"	"	---	94	"	4	30%	
Benzo(b)fluoranthene	3.61	0.0150	0.0300	"	"	"	---	90	45-125%	4	30%	
Benzo(k)fluoranthene	3.46	0.0150	0.0300	"	"	"	---	86	"	5	30%	
Benzo(b+k)fluoranthene(s)	7.12	0.0300	0.0600	"	"	8.00	---	89	"	4	30%	
Benzo(g,h,i)perylene	3.64	0.0100	0.0200	"	"	4.00	---	91	40-125%	5	30%	
Chrysene	3.40	0.0100	0.0200	"	"	"	---	85	55-125%	4	30%	
Dibenz(a,h)anthracene	3.50	0.0100	0.0200	"	"	"	---	87	40-125%	4	30%	
Fluoranthene	3.31	0.0100	0.0200	"	"	"	---	83	55-125%	5	30%	
Fluorene	2.73	0.0100	0.0200	"	"	"	---	68	50-125%	2	30%	
Indeno(1,2,3-cd)pyrene	3.48	0.0100	0.0200	"	"	"	---	87	45-125%	3	30%	
1-Methylnaphthalene	2.52	0.0200	0.0400	"	"	"	---	63	45-120%	2	30%	
2-Methylnaphthalene	2.52	0.0200	0.0400	"	"	"	---	63	"	3	30%	
Naphthalene	2.22	0.0200	0.0400	"	"	"	---	55	40-125%	3	30%	
Phenanthrene	2.97	0.0100	0.0200	"	"	"	---	74	50-125%	5	30%	
Pyrene	3.29	0.0100	0.0200	"	"	"	---	82	"	5	30%	
Carbazole	3.36	0.0150	0.0300	"	"	"	---	84	"	5	30%	
Dibenzofuran	2.74	0.0100	0.0200	"	"	"	---	68	55-125%	0.9	30%	
Bis(2-ethylhexyl)phthalate	3.84	1.10	2.20	"	"	"	---	96	40-125%	6	30%	
Butyl benzyl phthalate	3.78	1.50	3.00	"	"	"	---	95	45-125%	7	30%	
Diethylphthalate	3.28	1.50	3.00	"	"	"	---	82	40-125%	4	30%	
Dimethylphthalate	3.28	1.50	3.00	"	"	"	---	82	25-125%	3	30%	
Di-n-butylphthalate	3.36	1.50	3.00	"	"	"	---	84	55-125%	5	30%	
Di-n-octyl phthalate	3.54	1.50	3.00	"	"	"	---	88	35-125%	4	30%	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 60 %*	*Limits: 35-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*56 %*	*30-120 %*	*"*
p-Terphenyl-d14 (Surr)	*76 %*	*50-125 %*	*"*

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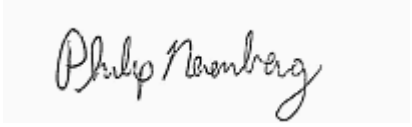

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010501 - EPA 3015A									**Water**			
Blank (4010501-BLK1)					Prepared: 01/24/14 09:12 Analyzed: 01/24/14 13:48							
EPA 6020A												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Antimony	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	0.0400	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (4010501-BS1)					Prepared: 01/24/14 09:12 Analyzed: 01/24/14 13:51							
EPA 6020A												
Aluminum	5370	25.0	50.0	ug/L	1	5560	---	97	80-120%	---	---	
Antimony	25.7	0.500	1.00	"	"	27.8	---	93	"	---	---	
Arsenic	52.0	0.500	1.00	"	"	55.6	---	94	"	---	---	
Cadmium	50.9	0.0400	0.200	"	"	"	---	92	"	---	---	
Chromium	54.6	0.500	1.00	"	"	"	---	98	"	---	---	
Copper	54.6	0.500	1.00	"	"	"	---	98	"	---	---	
Lead	54.9	0.100	0.200	"	"	"	---	99	"	---	---	
Manganese	56.4	0.500	1.00	"	"	"	---	101	"	---	---	
Mercury	0.982	0.0400	0.0800	"	"	1.11	---	88	"	---	---	
Nickel	53.6	0.500	1.00	"	"	55.6	---	97	"	---	---	
Silver	25.5	0.100	0.200	"	"	27.8	---	92	"	---	---	
Zinc	52.1	2.00	4.00	"	"	55.6	---	94	"	---	---	
Duplicate (4010501-DUP1)					Prepared: 01/24/14 09:12 Analyzed: 01/24/14 14:11							
QC Source Sample: B18-SP1-20140107 (A4A0131-03)												
EPA 6020A												

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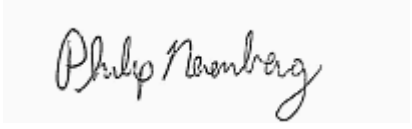

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010501 - EPA 3015A								**Water**				
Duplicate (4010501-DUP1)						Prepared: 01/24/14 09:12	Analyzed: 01/24/14 14:11					
QC Source Sample: B18-SP1-20140107 (A4A0131-03)												
Aluminum	**4800**	25.0	50.0	ug/L	1	---	5140	---	---	7	20%	
Antimony	**1.94**	0.500	1.00	"	"	---	2.28	---	---	16	20%	
Arsenic	**4.69**	0.500	1.00	"	"	---	5.13	---	---	9	20%	
Cadmium	**1.49**	0.0400	0.200	"	"	---	1.48	---	---	0.7	20%	
Chromium	**47.4**	0.500	1.00	"	"	---	50.1	---	---	6	20%	
Copper	**83.9**	0.500	1.00	"	"	---	86.3	---	---	3	20%	
Lead	**118**	0.100	0.200	"	"	---	122	---	---	3	20%	
Manganese	**2210**	0.500	1.00	"	"	---	2230	---	---	1	20%	
Mercury	**0.127**	0.0400	0.0800	"	"	---	0.146	---	---	14	20%	
Nickel	**14.2**	0.500	1.00	"	"	---	14.9	---	---	5	20%	
Silver	**0.200**	0.100	0.200	"	"	---	0.222	---	---	11	20%	
Zinc	**594**	2.00	4.00	"	"	---	609	---	---	3	20%	
Matrix Spike (4010501-MS1)						Prepared: 01/24/14 09:12	Analyzed: 01/24/14 14:14					
QC Source Sample: B18-SP1-20140107 (A4A0131-03)												
EPA 6020A												
Aluminum	10500	25.0	50.0	ug/L	1	5560	5140	97	75-125%	---	---	
Antimony	23.5	0.500	1.00	"	"	27.8	2.28	77	"	---	---	
Arsenic	58.5	0.500	1.00	"	"	55.6	5.13	96	"	---	---	
Cadmium	55.2	0.0400	0.200	"	"	"	1.48	97	"	---	---	
Chromium	107	0.500	1.00	"	"	"	50.1	102	"	---	---	
Copper	138	0.500	1.00	"	"	"	86.3	93	"	---	---	
Lead	175	0.100	0.200	"	"	"	122	97	"	---	---	
Manganese	2280	0.500	1.00	"	"	"	2230	92	"	---	---	
Mercury	1.15	0.0400	0.0800	"	"	1.11	0.146	90	"	---	---	
Nickel	67.9	0.500	1.00	"	"	55.6	14.9	95	"	---	---	
Silver	26.5	0.100	0.200	"	"	27.8	0.222	95	"	---	---	
Zinc	649	2.00	4.00	"	"	55.6	609	72	"	---	---	Q-03
Post Spike (4010501-PS1)						Prepared: 01/27/14 15:29	Analyzed: 01/27/14 16:09					

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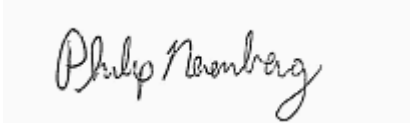

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503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010501 - EPA 3015A							**Water**					
Post Spike (4010501-PS1)					Prepared: 01/27/14 15:29 Analyzed: 01/27/14 16:09							
QC Source Sample: B18-SP1-20140107 (A4A0131-03)												
EPA 6020A												
Zinc	1040			ug/L	5	476	522	108	80-120%		---	

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010510 - EPA 3015A - Dissolved								Water				
Blank (4010510-BLK1)						Prepared: 01/24/14 12:23 Analyzed: 01/24/14 15:10						
EPA 6020A (Diss)												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Antimony	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	0.0400	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (4010510-BS1)						Prepared: 01/24/14 12:23 Analyzed: 01/24/14 15:19						
EPA 6020A (Diss)												
Aluminum	5630	25.0	50.0	ug/L	1	5560	---	101	80-120%	---	---	
Antimony	27.0	0.500	1.00	"	"	27.8	---	97	"	---	---	
Arsenic	54.2	0.500	1.00	"	"	55.6	---	98	"	---	---	
Cadmium	54.0	0.0400	0.200	"	"	"	---	97	"	---	---	
Chromium	56.2	0.500	1.00	"	"	"	---	101	"	---	---	
Copper	56.3	0.500	1.00	"	"	"	---	101	"	---	---	
Lead	56.0	0.100	0.200	"	"	"	---	101	"	---	---	
Manganese	59.0	0.500	1.00	"	"	"	---	106	"	---	---	
Mercury	1.03	0.0400	0.0800	"	"	1.11	---	92	"	---	---	
Nickel	55.8	0.500	1.00	"	"	55.6	---	100	"	---	---	
Silver	26.5	0.100	0.200	"	"	27.8	---	95	"	---	---	
Zinc	54.7	2.00	4.00	"	"	55.6	---	98	"	---	---	
Duplicate (4010510-DUP1)						Prepared: 01/24/14 12:23 Analyzed: 01/24/14 15:34						
QC Source Sample: B19-SP-19-1-20140107 (A4A0131-04)												
EPA 6020A (Diss)												

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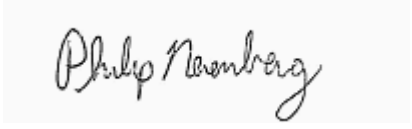

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503-718-2323 Phone
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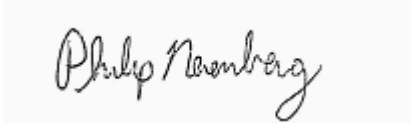
Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010510 - EPA 3015A - Dissolved							**Water**					
Duplicate (4010510-DUP1)					Prepared: 01/24/14 12:23 Analyzed: 01/24/14 15:34							
QC Source Sample: B19-SP-19-1-20140107 (A4A0131-04)												
Aluminum	**55.7**	25.0	50.0	ug/L	1	---	56.4	---	---	1	20%	
Antimony	**3.68**	0.500	1.00	"	"	---	3.68	---	---	0	20%	
Arsenic	**0.911**	0.500	1.00	"	"	---	0.911	---	---	0	20%	J
Cadmium	ND	0.0400	0.200	"	"	---	0.0444	---	---	***	20%	
Chromium	**3.42**	0.500	1.00	"	"	---	3.44	---	---	0.6	20%	
Copper	**13.8**	0.500	1.00	"	"	---	13.6	---	---	2	20%	
Lead	**1.32**	0.100	0.200	"	"	---	1.36	---	---	2	20%	
Manganese	**26.5**	0.500	1.00	"	"	---	26.4	---	---	0.3	20%	
Mercury	ND	0.0400	0.0800	"	"	---	ND	---	---	---	20%	
Nickel	**1.41**	0.500	1.00	"	"	---	1.63	---	---	15	20%	
Silver	ND	0.100	0.200	"	"	---	ND	---	---	---	20%	
Zinc	**9.53**	2.00	4.00	"	"	---	9.56	---	---	0.2	20%	
Matrix Spike (4010510-MS1)					Prepared: 01/24/14 12:23 Analyzed: 01/24/14 15:37							
QC Source Sample: B19-SP-19-1-20140107 (A4A0131-04)												
EPA 6020A (Diss)												
Aluminum	5450	25.0	50.0	ug/L	1	5560	56.4	97	75-125%	---	---	
Antimony	30.0	0.500	1.00	"	"	27.8	3.68	95	"	---	---	
Arsenic	55.3	0.500	1.00	"	"	55.6	0.911	98	"	---	---	
Cadmium	53.5	0.0400	0.200	"	"	"	0.0444	96	"	---	---	
Chromium	59.7	0.500	1.00	"	"	"	3.44	101	"	---	---	
Copper	69.1	0.500	1.00	"	"	"	13.6	100	"	---	---	
Lead	55.4	0.100	0.200	"	"	"	1.36	97	"	---	---	
Manganese	85.5	0.500	1.00	"	"	"	26.4	106	"	---	---	
Mercury	1.02	0.0400	0.0800	"	"	1.11	ND	92	"	---	---	
Nickel	56.0	0.500	1.00	"	"	55.6	1.63	98	"	---	---	
Silver	25.8	0.100	0.200	"	"	27.8	ND	93	"	---	---	
Zinc	64.2	2.00	4.00	"	"	55.6	9.56	98	"	---	---	

Apex Laboratories



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503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010186 - Total Suspended Solids									Water			
Blank (4010186-BLK1)					Prepared: 01/09/14 14:07		Analyzed: 01/13/14 11:10					
SM 2540 D												
Total Suspended Solids	ND	2.00	2.00	mg/L	1	---	---	---	---	---	---	
Reference (4010186-SRM1)					Prepared: 01/09/14 14:07		Analyzed: 01/13/14 11:10					
SM 2540 D												
Total Suspended Solids	95.0			mg/L	1	100		95	90-110%	---	---	

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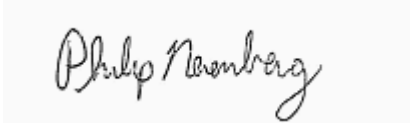

Philip Nerenberg, Lab Director

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4010267 - Method Prep: Aq							**Water**					
Blank (4010267-BLK1)					Prepared: 01/14/14 08:03		Analyzed: 01/14/14 11:20					
SM 5310 B												
Total Organic Carbon	ND	1.00	1.00	mg/L	1	---	---	---	---	---	---	
LCS (4010267-BS1)					Prepared: 01/14/14 08:03		Analyzed: 01/14/14 11:54					
SM 5310 B												
Total Organic Carbon	10.5	1.00	1.00	mg/L	1	10.0	---	105	85-115%	---	---	
Duplicate (4010267-DUP1)					Prepared: 01/14/14 08:03		Analyzed: 01/14/14 16:47					
QC Source Sample: B19-SP-19-1-20140107 (A4A0131-04)												
SM 5310 B												
Total Organic Carbon	**9.42**	1.00	1.00	mg/L	1	---	9.73	---	---	3	20%	
Matrix Spike (4010267-MS1)					Prepared: 01/14/14 08:03		Analyzed: 01/14/14 17:13					
QC Source Sample: B19-SP-19-1-20140107 (A4A0131-04)												
SM 5310 B												
Total Organic Carbon	20.0	1.01	1.01	mg/L	1	10.0	9.73	103	75-125%	---	---	

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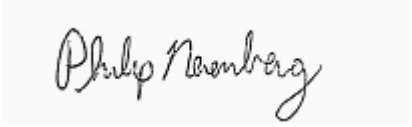

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

SAMPLE PREPARATION INFORMATION

Diesel and Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010275							
A4A0131-01	Water	NWTPH-Dx	01/07/14 13:45	01/14/14 11:14	1050mL/5mL	1000mL/5mL	0.95
A4A0131-02	Water	NWTPH-Dx	01/07/14 14:15	01/14/14 11:14	1060mL/5mL	1000mL/5mL	0.94
A4A0131-03	Water	NWTPH-Dx	01/07/14 15:45	01/14/14 11:14	1030mL/5mL	1000mL/5mL	0.97
A4A0131-04	Water	NWTPH-Dx	01/07/14 15:00	01/14/14 11:14	1050mL/10mL	1000mL/5mL	1.90

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010203							
A4A0131-01	Water	NWTPH-Gx (MS)	01/07/14 13:45	01/10/14 11:09	5mL/5mL	5mL/5mL	1.00
A4A0131-02	Water	NWTPH-Gx (MS)	01/07/14 14:15	01/10/14 11:09	5mL/5mL	5mL/5mL	1.00
A4A0131-03	Water	NWTPH-Gx (MS)	01/07/14 15:45	01/10/14 11:09	5mL/5mL	5mL/5mL	1.00
A4A0131-04	Water	NWTPH-Gx (MS)	01/07/14 15:00	01/10/14 11:09	5mL/5mL	5mL/5mL	1.00

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3510C (Neutral pH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010401							
A4A0131-01	Water	EPA 8082A	01/07/14 13:45	01/20/14 10:39	960mL/2mL	1000mL/1mL	2.08
A4A0131-02	Water	EPA 8082A	01/07/14 14:15	01/20/14 10:39	1050mL/2mL	1000mL/1mL	1.90
A4A0131-03	Water	EPA 8082A	01/07/14 15:45	01/20/14 10:39	1040mL/2mL	1000mL/1mL	1.92
A4A0131-04	Water	EPA 8082A	01/07/14 15:00	01/20/14 10:39	980mL/2mL	1000mL/1mL	2.04

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3510C (Neutral pH)/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010254							
A4A0131-01RE1	Water	EPA 8081B	01/07/14 13:45	01/13/14 12:52	1030mL/10mL	1000mL/5mL	1.94
A4A0131-02RE1	Water	EPA 8081B	01/07/14 14:15	01/13/14 12:52	1050mL/10mL	1000mL/5mL	1.90
A4A0131-03RE1	Water	EPA 8081B	01/07/14 15:45	01/13/14 12:52	1030mL/10mL	1000mL/5mL	1.94
A4A0131-04RE1	Water	EPA 8081B	01/07/14 15:00	01/13/14 12:52	1030mL/10mL	1000mL/5mL	1.94

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

SAMPLE PREPARATION INFORMATION

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010262							
A4A0131-01RE1	Water	EPA 8270D P/P	01/07/14 13:45	01/14/14 07:12	1030mL/2mL	1000mL/1mL	1.94
A4A0131-02RE1	Water	EPA 8270D P/P	01/07/14 14:15	01/14/14 07:12	990mL/1mL	1000mL/1mL	1.01
A4A0131-03RE1	Water	EPA 8270D P/P	01/07/14 15:45	01/14/14 07:12	970mL/2mL	1000mL/1mL	2.06
A4A0131-04	Water	EPA 8270D P/P	01/07/14 15:00	01/14/14 07:12	970mL/2mL	1000mL/1mL	2.06

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010501							
A4A0131-01	Water	EPA 6020A	01/07/14 13:45	01/24/14 09:12	45mL/50mL	45mL/50mL	1.00
A4A0131-02	Water	EPA 6020A	01/07/14 14:15	01/24/14 09:12	45mL/50mL	45mL/50mL	1.00
A4A0131-03	Water	EPA 6020A	01/07/14 15:45	01/24/14 09:12	45mL/50mL	45mL/50mL	1.00
A4A0131-04	Water	EPA 6020A	01/07/14 15:00	01/24/14 09:12	45mL/50mL	45mL/50mL	1.00

Dissolved Metals by EPA 6020 (ICPMS)

Prep: EPA 3015A - Dissolved

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010510							
A4A0131-01	Water	EPA 6020A (Diss)	01/07/14 13:45	01/24/14 12:23	45mL/50mL	45mL/50mL	1.00
A4A0131-02	Water	EPA 6020A (Diss)	01/07/14 14:15	01/24/14 12:23	45mL/50mL	45mL/50mL	1.00
A4A0131-03	Water	EPA 6020A (Diss)	01/07/14 15:45	01/24/14 12:23	45mL/50mL	45mL/50mL	1.00
A4A0131-04	Water	EPA 6020A (Diss)	01/07/14 15:00	01/24/14 12:23	45mL/50mL	45mL/50mL	1.00

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4010267							
A4A0131-01	Water	SM 5310 B	01/07/14 13:45	01/14/14 08:03	40mL/40mL	40mL/40mL	1.00
A4A0131-02	Water	SM 5310 B	01/07/14 14:15	01/14/14 08:03	40mL/40mL	40mL/40mL	1.00
A4A0131-03	Water	SM 5310 B	01/07/14 15:45	01/14/14 08:03	40mL/40mL	40mL/40mL	1.00
A4A0131-04	Water	SM 5310 B	01/07/14 15:00	01/14/14 08:03	40mL/40mL	40mL/40mL	1.00

Prep: Total Suspended Solids

Sample	Default	RL Prep

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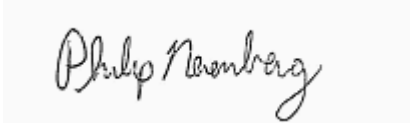

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

SAMPLE PREPARATION INFORMATION

Conventional Chemistry Parameters

Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 4010186							
A4A0131-01	Water	SM 2540 D	01/07/14 13:45	01/09/14 14:07	1N/A/1N/A	1N/A/1N/A	NA
A4A0131-02	Water	SM 2540 D	01/07/14 14:15	01/09/14 14:07	1N/A/1N/A	1N/A/1N/A	NA
A4A0131-03	Water	SM 2540 D	01/07/14 15:45	01/09/14 14:07	1N/A/1N/A	1N/A/1N/A	NA
A4A0131-04	Water	SM 2540 D	01/07/14 15:00	01/09/14 14:07	1N/A/1N/A	1N/A/1N/A	NA

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4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

Notes and Definitions

Qualifiers:

C-05	Extract has undergone a GPC (Gel-Permeation Chromotography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
J	Estimated Result . Result detected below the lowest point of the calibration curve, but above the specified MDL.
P-10	Result estimated due to the presence of multiple aroclors and/or matrix interference.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
R-04	Reporting levels elevated due to dilution necessary for analysis.
R-07	Reporting limit raised due to interference from detected multi-component analyte.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

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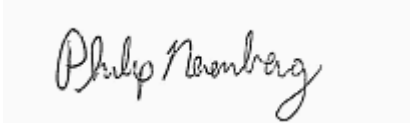

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Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

*** Used to indicate a possible discrepency with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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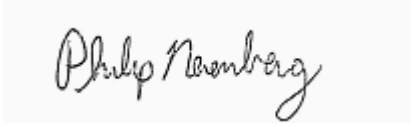

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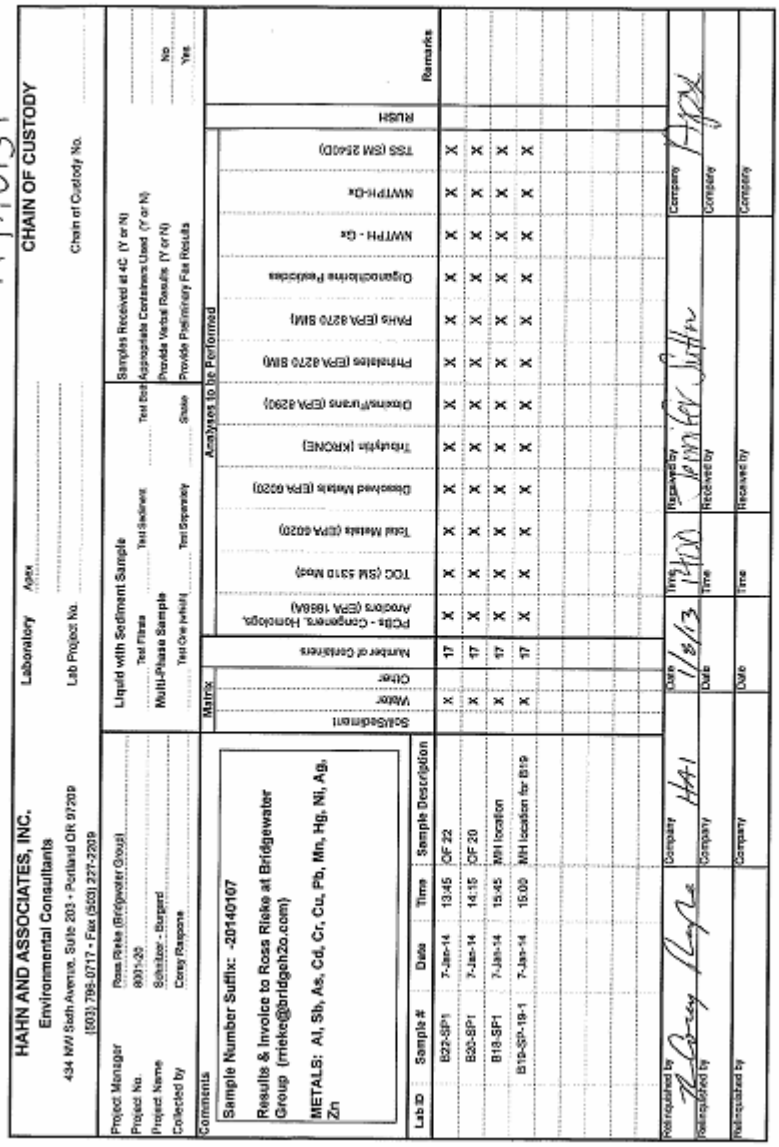
4500 SW Kruse Way; Suite 110	Project Number: HAI-8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	01/28/14 16:28

A4A0131



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Environmental Consultants
434 NW Sixth Avenue, Suite 203 • Portland OR 97209
(503) 796-0717 • Fax (503) 227-2209

CHAIN OF CUSTODY

Laboratory: Apex
Lab Project No.:
Chain of Custody No.:

Project Manager	Ross Rieke (Bridgewater Group)
Project No.	8001-20
Project Name	Schnitzer - Burgard
Collected by	Corey Raspone

Liquid with Sediment Sample: Test Filtrate / Test Sediment / Test Both
Multi-Phase Sample: Test One (which) / Test Separately / Shake
Samples Received at 4C (Y or N)
Appropriate Containers Used (Y or N)
Provide Verbal Results (Y or N) — No
Provide Preliminary Fax Results — Yes

Comments

Sample Number Suffix: -20140107

Results & Invoice to Ross Rieke at Bridgewater Group (rrieke@bridgeh2o.com)

METALS: Al, Sb, As, Cd, Cr, Cu, Pb, Mn, Hg, Ni, Ag, Zn

Analyses to be Performed

Lab ID	Sample #	Date	Time	Sample Description	Soil/Sediment	Water	Other	Number of Containers	PCBs - Congeners, Homologs, Aroclors (EPA 1668A)	TOC (SM 5310 Mod)	Total Metals (EPA 6020)	Dissolved Metals (EPA 6020)	Tributyltin (KRONE)	Dioxins/Furans (EPA 8290)	Phthalates (EPA 8270 SIM)	PAHs (EPA 8270 SIM)	Organochlorine Pesticides	NWTPH - Gx	NWTPH-Dx	TSS (SM 2540D)	RUSH	Remarks
	B22-SP1	7-Jan-14	13:45	OF 22		X		17	X	X	X	X	X	X	X	X	X	X	X	X		
	B20-SP1	7-Jan-14	14:15	OF 20		X		17	X	X	X	X	X	X	X	X	X	X	X	X		
	B18-SP1	7-Jan-14	15:45	MH location		X		17	X	X	X	X	X	X	X	X	X	X	X	X		
	B19-SP-19-1	7-Jan-14	16:00	MH location for B19		X		17	X	X	X	X	X	X	X	X	X	X	X	X		

Relinquished by: Corey Raspone	Company: HAI	Date: 1/8/13	Time: 1400	Received by: Jennifer Sutton	Company: Apex
Relinquished by	Company	Date	Time	Received by	Company
Relinquished by	Company	Date	Time	Received by	Company

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Philip Nerenberg

Philip Nerenberg, Lab Director

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Your Project #: A4A0131
Your C.O.C. #: na

Attention: Philip Nerenberg
Apex Laboratories
12232 SW Garden Place
Tigard, OR
USA 97223

Report Date: 2014/01/30
Report #: R2818940
Version: 1

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B403971
Received: 2014/01/10, 12:10

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Method Reference
Dioxins/Furans in Water (8290A) (1)	4	2014/01/13	2014/01/17	BRL SOP-00406	EPA 8290A mod.
2378TCDF Confirmation in Water	1	N/A	2014/01/17	BRL SOP-00406	EPA 8290 mod.
PCB Congeners in Water (1668A)	4	2014/01/27	2014/01/28	BRL SOP-00408	EPA 1668A mod.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ivana Vukovic, Env Project Manager
Email: IVukovic@maxxam.ca
Phone# (905) 817-5700

==========

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Total cover pages: 1

Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8683						
Sampling Date		2014/01/07 13:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	0.85 U	0.85	22	1.00	0.850		3482485
1,2,3,7,8-Penta CDD	pg/L	1.2 U	1.2	56	1.00	1.20		3482485
1,2,3,4,7,8-Hexa CDD	pg/L	2.9 J	1.1	56	0.100	0.290		3482485
1,2,3,6,7,8-Hexa CDD	pg/L	6.70 J	0.94	56	0.100	0.670		3482485
1,2,3,7,8,9-Hexa CDD	pg/L	6.89 J	0.93	56	0.100	0.689		3482485
1,2,3,4,6,7,8-Hepta CDD	pg/L	170	1.1	56	0.0100	1.70		3482485
Octa CDD	pg/L	1500	1.4	110	0.000300	0.450		3482485
Total Tetra CDD	pg/L	0.85 U	0.85	22				3482485
Total Penta CDD	pg/L	2.2 J	1.2	56				3482485
Total Hexa CDD	pg/L	47.0 J	0.97	56				3482485
Total Hepta CDD	pg/L	326	1.1	56				3482485
2,3,7,8-Tetra CDF **	pg/L	1.2 J	1.0	22	0.100	0.120		3482485
1,2,3,7,8-Penta CDF	pg/L	1.1 U	1.1	56	0.0300	0.0330		3482485
2,3,4,7,8-Penta CDF	pg/L	1.1 U	1.1	56	0.300	0.330		3482485
1,2,3,4,7,8-Hexa CDF	pg/L	4.36 J	0.94	56	0.100	0.436		3482485
1,2,3,6,7,8-Hexa CDF	pg/L	2.92 J	0.91	56	0.100	0.292		3482485
2,3,4,6,7,8-Hexa CDF	pg/L	2.5 J	1.0	56	0.100	0.250		3482485
1,2,3,7,8,9-Hexa CDF	pg/L	1.2 U	1.2	56	0.100	0.120		3482485
1,2,3,4,6,7,8-Hepta CDF	pg/L	77 U (1)	77	56	0.0100	0.770		3482485
1,2,3,4,7,8,9-Hepta CDF	pg/L	4.4 J	1.3	56	0.0100	0.0440		3482485
Octa CDF	pg/L	202	1.1	110	0.000300	0.0606		3482485
Total Tetra CDF	pg/L	5.8 J	1.0	22				3482485
Total Penta CDF	pg/L	23.9 J	1.1	56				3482485
Total Hexa CDF	pg/L	79.9	1.0	56				3482485
Total Hepta CDF	pg/L	115	1.1	56				3482485
TOTAL TOXIC EQUIVALENCY	pg/L					8.30		
Surrogate Recovery (%)								
C13-1234678 HeptaCDD	%	80						3482485

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8683						
Sampling Date		2014/01/07 13:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	78						3482485
C13-123478 HexaCDF	%	78						3482485
C13-123678 HexaCDD *	%	89						3482485
C13-12378 PentaCDD	%	72						3482485
C13-12378 PentaCDF	%	57						3482485
C13-2378 TetraCDD	%	77						3482485
C13-2378 TetraCDF	%	62						3482485
C13-OCDD	%	85						3482485

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	0.90 U	0.90	22	1.00	0.900		3482485
1,2,3,7,8-Penta CDD	pg/L	2.90 J	0.98	56	1.00	2.90		3482485
1,2,3,4,7,8-Hexa CDD	pg/L	4.45 J	0.99	56	0.100	0.445		3482485
1,2,3,6,7,8-Hexa CDD	pg/L	15.3 J	0.87	56	0.100	1.53		3482485
1,2,3,7,8,9-Hexa CDD	pg/L	11.9 J	0.86	56	0.100	1.19		3482485
1,2,3,4,6,7,8-Hepta CDD	pg/L	375	0.93	56	0.0100	3.75		3482485
Octa CDD	pg/L	3290	1.1	110	0.000300	0.987		3482485
Total Tetra CDD	pg/L	1.01 J	0.90	22				3482485
Total Penta CDD	pg/L	7.37 J	0.98	56				3482485
Total Hexa CDD	pg/L	118	0.90	56				3482485
Total Hepta CDD	pg/L	883	0.93	56				3482485
2,3,7,8-Tetra CDF **	pg/L	5.2 J	1.1	22	0.100	0.520		3482485
1,2,3,7,8-Penta CDF	pg/L	2.0 J	1.1	56	0.0300	0.0600		3482485
2,3,4,7,8-Penta CDF	pg/L	3.2 J	1.1	56	0.300	0.960		3482485
1,2,3,4,7,8-Hexa CDF	pg/L	8.16 J	0.96	56	0.100	0.816		3482485
1,2,3,6,7,8-Hexa CDF	pg/L	3.67 J	0.93	56	0.100	0.367		3482485
2,3,4,6,7,8-Hexa CDF	pg/L	3.1 J	1.0	56	0.100	0.310		3482485
1,2,3,7,8,9-Hexa CDF	pg/L	1.2 U	1.2	56	0.100	0.120		3482485
1,2,3,4,6,7,8-Hepta CDF	pg/L	64 U (1)	64	56	0.0100	0.640		3482485
1,2,3,4,7,8,9-Hepta CDF	pg/L	4.9 U (1)	4.9	56	0.0100	0.0490		3482485
Octa CDF	pg/L	143	1.1	110	0.000300	0.0429		3482485
Total Tetra CDF	pg/L	30.9	1.1	22				3482485
Total Penta CDF	pg/L	40.3 J	1.1	56				3482485
Total Hexa CDF	pg/L	106	1.0	56				3482485
Total Hepta CDF	pg/L	126	1.2	56				3482485
TOTAL TOXIC EQUIVALENCY	pg/L					15.6		
Surrogate Recovery (%)								
C13-1234678 HeptaCDD	%	94						3482485

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	93						3482485
C13-123478 HexaCDF	%	85						3482485
C13-123678 HexaCDD *	%	96						3482485
C13-12378 PentaCDD	%	65						3482485
C13-12378 PentaCDF	%	56						3482485
C13-2378 TetraCDD	%	82						3482485
C13-2378 TetraCDF	%	71						3482485
C13-OCDD	%	102						3482485

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	1.1 U	1.1	22	1.00	1.10		3482485
1,2,3,7,8-Penta CDD	pg/L	3.82 J	0.92	56	1.00	3.82		3482485
1,2,3,4,7,8-Hexa CDD	pg/L	6.1 J	1.0	56	0.100	0.610		3482485
1,2,3,6,7,8-Hexa CDD	pg/L	20.5 J	0.89	56	0.100	2.05		3482485
1,2,3,7,8,9-Hexa CDD	pg/L	14.5 J	0.88	56	0.100	1.45		3482485
1,2,3,4,6,7,8-Hepta CDD	pg/L	494	1.8	56	0.0100	4.94		3482485
Octa CDD	pg/L	4290	2.7	110	0.000300	1.29		3482485
Total Tetra CDD	pg/L	5.4 J	1.1	22				3482485
Total Penta CDD	pg/L	12.9 J	0.92	56				3482485
Total Hexa CDD	pg/L	150	0.93	56				3482485
Total Hepta CDD	pg/L	1070	1.8	56				3482485
2,3,7,8-Tetra CDF **	pg/L	6.8 J	1.1	22	0.100	0.680		3482485
1,2,3,7,8-Penta CDF	pg/L	2.8 J	1.3	56	0.0300	0.0840		3482485
2,3,4,7,8-Penta CDF	pg/L	4.8 J	1.3	56	0.300	1.44		3482485
1,2,3,4,7,8-Hexa CDF	pg/L	10.8 J	1.0	56	0.100	1.08		3482485
1,2,3,6,7,8-Hexa CDF	pg/L	5.4 J	1.0	56	0.100	0.540		3482485
2,3,4,6,7,8-Hexa CDF	pg/L	4.4 J	1.1	56	0.100	0.440		3482485
1,2,3,7,8,9-Hexa CDF	pg/L	1.3 U	1.3	56	0.100	0.130		3482485
1,2,3,4,6,7,8-Hepta CDF	pg/L	83 U (1)	83	56	0.0100	0.830		3482485
1,2,3,4,7,8,9-Hepta CDF	pg/L	6.8 J	1.8	56	0.0100	0.0680		3482485
Octa CDF	pg/L	205	1.1	110	0.000300	0.0615		3482485
Total Tetra CDF	pg/L	55.6	1.1	22				3482485
Total Penta CDF	pg/L	74.9	1.3	56				3482485
Total Hexa CDF	pg/L	141	1.1	56				3482485
Total Hepta CDF	pg/L	151	1.6	56				3482485
TOTAL TOXIC EQUIVALENCY	pg/L					20.6		
Surrogate Recovery (%)								
C13-1234678 HeptaCDD	%	93						3482485

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	92						3482485
C13-123478 HexaCDF	%	91						3482485
C13-123678 HexaCDD *	%	100						3482485
C13-12378 PentaCDD	%	68						3482485
C13-12378 PentaCDF	%	59						3482485
C13-2378 TetraCDD	%	82						3482485
C13-2378 TetraCDF	%	71						3482485
C13-OCDD	%	107						3482485

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	6.0 J	1.1	22	1.00	6.00		3482485
1,2,3,7,8-Penta CDD	pg/L	36.2 J	1.1	56	1.00	36.2		3482485
1,2,3,4,7,8-Hexa CDD	pg/L	56.7	1.0	56	0.100	5.67		3482485
1,2,3,6,7,8-Hexa CDD	pg/L	276	0.88	56	0.100	27.6		3482485
1,2,3,7,8,9-Hexa CDD	pg/L	173	0.87	56	0.100	17.3		3482485
1,2,3,4,6,7,8-Hepta CDD	pg/L	6550	1.1	56	0.0100	65.5		3482485
Octa CDD	pg/L	67500 (1)	1.4	110	0.000300	20.3		3482485
Total Tetra CDD	pg/L	60.9	1.1	22				3482485
Total Penta CDD	pg/L	181	1.1	56				3482485
Total Hexa CDD	pg/L	2220	0.92	56				3482485
Total Hepta CDD	pg/L	15500	1.1	56				3482485
2,3,7,8-Tetra CDF **	pg/L	101	0.85	22	0.100	10.1		3482485
1,2,3,7,8-Penta CDF	pg/L	31.8 J	1.0	56	0.0300	0.954		3482485
2,3,4,7,8-Penta CDF	pg/L	59.7	1.1	56	0.300	17.9		3482485
1,2,3,4,7,8-Hexa CDF	pg/L	130	1.1	56	0.100	13.0		3482485
1,2,3,6,7,8-Hexa CDF	pg/L	61.4	1.0	56	0.100	6.14		3482485
2,3,4,6,7,8-Hexa CDF	pg/L	49.3 J	1.2	56	0.100	4.93		3482485
1,2,3,7,8,9-Hexa CDF	pg/L	4.1 J	1.3	56	0.100	0.410		3482485
1,2,3,4,6,7,8-Hepta CDF	pg/L	1000 U (2)	1000	56	0.0100	10.0		3482485
1,2,3,4,7,8,9-Hepta CDF	pg/L	78 U (2)	78	56	0.0100	0.780		3482485
Octa CDF	pg/L	2980	1.6	110	0.000300	0.894		3482485
Total Tetra CDF	pg/L	689	0.85	22				3482485
Total Penta CDF	pg/L	608	1.1	56				3482485
Total Hexa CDF	pg/L	1730	1.1	56				3482485
Total Hepta CDF	pg/L	2220	1.4	56				3482485
Confirmation 2,3,7,8-Tetra CDF	pg/L	70.2	1.2	11	0.100	7.02		3486957
TOTAL TOXIC EQUIVALENCY	pg/L					241		

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
(1) EMCL - PCDD/DF analysis - Exceeds Maximum Calibration Limit
(2) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			**TOXIC EQUIVALENCY**		**# of**	
	Units	**B19-SP-19-1-20140107**	**EDL**	**RDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
Surrogate Recovery (%)								
C13-1234678 HeptaCDD *	%	86						3482485
C13-1234678 HeptaCDF **	%	88						3482485
C13-123478 HexaCDF	%	83						3482485
C13-123678 HexaCDD	%	90						3482485
C13-12378 PentaCDD	%	54						3482485
C13-12378 PentaCDF	%	50						3482485
C13-2378 TetraCDD	%	77						3482485
C13-2378 TetraCDF	%	65						3482485
C13-OCDD	%	105						3482485
Confirmation C13-2378 TetraCDF	%	91						3486957

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
* CDD = Chloro Dibenzo-p-Dioxin, ** CDF = Chloro Dibenzo-p-Furan
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8683						
Sampling Date		2014/01/07 13:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.0654 J	0.0015	0.095				3495980
3-MonoCB-(2)	ng/L	0.0133 J	0.0012	0.095				3495980
4-MonoCB-(3)	ng/L	0.030 U (1)	0.030	0.095				3495980
22'-DiCB-(4)	ng/L	0.629	0.018	0.095				3495980
2,3-DiCB-(5)	ng/L	0.022 U	0.022	0.095				3495980
2,3'-DiCB-(6)	ng/L	0.18 U (1)	0.18	0.095				3495980
2,4-DiCB-(7)	ng/L	0.027 U	0.027	0.095				3495980
2,4'-DiCB-(8)	ng/L	0.935	0.021	0.095				3495980
2,5-DiCB-(9)	ng/L	0.054 U (1)	0.054	0.095				3495980
2,6-DiCB-(10)	ng/L	0.016 J	0.012	0.095				3495980
3,3'-DiCB-(11)	ng/L	3.90	0.023	0.095				3495980
DiCB-(12)+(13)	ng/L	0.10 U (1)	0.10	0.19				3495980
3,5-DiCB-(14)	ng/L	0.022 U	0.022	0.095				3495980
4,4'-DiCB-(15)	ng/L	0.749	0.036	0.095				3495980
22'3-TriCB-(16)	ng/L	1.01	0.0042	0.095				3495980
22'4-TriCB-(17)	ng/L	0.739	0.0032	0.095				3495980
TriCB-(18)+(30)	ng/L	1.55	0.0025	0.19				3495980
22'6-TriCB-(19)	ng/L	0.197	0.0032	0.095				3495980
TriCB-(20) + (28)	ng/L	2.67	0.0037	0.19				3495980
TriCB-(21)+(33)	ng/L	1.76	0.0038	0.19				3495980
234'-TriCB-(22)	ng/L	1.11	0.0039	0.095				3495980
235-TriCB-(23)	ng/L	0.0039 U	0.0039	0.095				3495980
236-TriCB-(24)	ng/L	0.0022 U	0.0022	0.095				3495980
23'4-TriCB-(25)	ng/L	0.200	0.0038	0.095				3495980
TriCB-(26)+(29)	ng/L	0.438	0.0037	0.19				3495980
23'6-TriCB-(27)	ng/L	0.111	0.0022	0.095				3495980
24'5-TriCB-(31)	ng/L	2.27	0.0035	0.095				3495980
24'6-TriCB-(32)	ng/L	0.473	0.0020	0.095				3495980
23'5'-TriCB-(34)	ng/L	0.0064 J	0.0038	0.095				3495980

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8683						
Sampling Date		2014/01/07 13:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'4-TriCB-(35)	ng/L	0.0773 J	0.0040	0.095				3495980
33'5-TriCB-(36)	ng/L	0.0085 U (1)	0.0085	0.095				3495980
344'-TriCB-(37)	ng/L	0.983	0.0047	0.095				3495980
345-TriCB-(38)	ng/L	0.0039 U	0.0039	0.095				3495980
34'5-TriCB-(39)	ng/L	0.0072 J	0.0036	0.095				3495980
TetraCB-(40)+(41)+(71)	ng/L	1.10	0.0013	0.29				3495980
22'34'-TetraCB-(42)	ng/L	0.585	0.0016	0.095				3495980
22'35-TetraCB-(43)	ng/L	0.0859 J	0.0019	0.095				3495980
TetraCB-(44)+(47)+(65)	ng/L	1.76	0.0012	0.29				3495980
TetraCB-(45)+(51)	ng/L	0.316	0.0013	0.19				3495980
22'36'-TetraCB-(46)	ng/L	0.121	0.0015	0.095				3495980
22'45-TetraCB-(48)	ng/L	0.382	0.0012	0.095				3495980
TetraCB-(49)+TetraCB-(69)	ng/L	0.938	0.0011	0.19				3495980
TetraCB-(50)+(53)	ng/L	0.208	0.0012	0.19				3495980
22'55'-TetraCB-(52)	ng/L	1.66	0.0013	0.095				3495980
22'66'-TetraCB-(54)	ng/L	0.0056 J	0.0015	0.095				3495980
233'4-TetraCB-(55)	ng/L	0.0172 J	0.0012	0.095				3495980
233'4'-Tetra CB(56)	ng/L	0.728	0.0014	0.095				3495980
233'5-TetraCB-(57)	ng/L	0.0079 J	0.0012	0.095				3495980
233'5'-TetraCB-(58)	ng/L	0.0012 U	0.0012	0.095				3495980
TetraCB-(59)+(62)+(75)	ng/L	0.163 J	0.00095	0.29				3495980
2344'-TetraCB -(60)	ng/L	0.396	0.0012	0.095				3495980
TetraCB-(61)+(70)+(74)+(76)	ng/L	2.50	0.0012	0.38				3495980
234'5-TetraCB-(63)	ng/L	0.0441 J	0.0011	0.095				3495980
234'6-TetraCB-(64)	ng/L	0.869	0.0011	0.095				3495980
23'44'-TetraCB-(66)	ng/L	1.25	0.0012	0.095				3495980
23'45-TetraCB-(67)	ng/L	0.0502 J	0.0011	0.095				3495980
23'45'-TetraCB-(68)	ng/L	0.0053 U (1)	0.0053	0.095				3495980
23'55'-TetraCB-(72)	ng/L	0.0060 U (1)	0.0060	0.095				3495980

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	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'5'6-TetraCB-(73)	ng/L	0.00086 U	0.00086	0.095				3495980
33'44'-TetraCB-(77)	ng/L	0.194	0.0013	0.095	0.000100	0.0000194		3495980
33'45-TetraCB-(78)	ng/L	0.0012 U	0.0012	0.095				3495980
33'45'-TetraCB(79)	ng/L	0.0142 J	0.0011	0.095				3495980
33'55'-TetraCB-(80)	ng/L	0.0011 U	0.0011	0.095				3495980
344'5-TetraCB-(81)	ng/L	0.0039 U (1)	0.0039	0.095	0.000300	0.00000117		3495980
22'33'4-PentaCB-(82)	ng/L	0.224	0.0016	0.095				3495980
PentaCB-(83)+(99)	ng/L	0.661	0.0014	0.19				3495980
22'33'6-PentaCB-(84)	ng/L	0.396	0.0017	0.095				3495980
PentaCB-(85)+(116)+(117)	ng/L	0.210 J	0.0012	0.29				3495980
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	1.04	0.0012	0.57				3495980
PentaCB-(88)+(91)	ng/L	0.178 J	0.0014	0.19				3495980
22'346'-PentaCB-(89)	ng/L	0.0190 J	0.0015	0.095				3495980
PentaCB-(90)+(101)+(113)	ng/L	1.28	0.0012	0.29				3495980
22'355'-PentaCB-(92)	ng/L	0.218	0.0014	0.095				3495980
PentaCB-(93)+(98)+(100)+(102)	ng/L	0.0584 J	0.0014	0.38				3495980
22'356'-PentaCB-(94)	ng/L	0.0066 J	0.0014	0.095				3495980
22'35'6-PentaCB-(95)	ng/L	0.956	0.0013	0.095				3495980
22'366'-PentaCB-(96)	ng/L	0.0132 J	0.00080	0.095				3495980
22'45'6-PentaCB-(103)	ng/L	0.0063 J	0.0012	0.095				3495980
22'466'-PentaCB-(104)	ng/L	0.0011 U	0.0011	0.095				3495980
233'44'-PentaCB-(105)	ng/L	0.803	0.0015	0.095	0.0000300	0.0000241		3495980
233'45-PentaCB-(106)	ng/L	0.0014 U	0.0014	0.095				3495980
233'4'5-PentaCB-(107)	ng/L	0.104	0.0013	0.095				3495980
PentaCB-(108)+(124)	ng/L	0.0649 J	0.0014	0.19				3495980
PentaCB-(110)+(115)	ng/L	2.13	0.0012	0.19				3495980
233'55'-PentaCB-(111)	ng/L	0.0010 U	0.0010	0.095				3495980
233'56-PentaCB-(112)	ng/L	0.0011 U	0.0011	0.095				3495980
2344'5-PentaCB-(114)	ng/L	0.0431 J	0.0015	0.095	0.0000300	0.00000129		3495980

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Apex Laboratories
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COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'44'5-PentaCB-(118)	ng/L	1.71	0.0015	0.095	0.0000300	0.0000513		3495980
23'455'-PentaCB-(120)	ng/L	0.0029 U (1)	0.0029	0.095				3495980
23'45'6-PentaCB-(121)	ng/L	0.0010 U	0.0010	0.095				3495980
233'4'5'-PentaCB-(122)	ng/L	0.023 U (1)	0.023	0.095				3495980
23'44'5'-PentaCB-(123)	ng/L	0.0296 J	0.0016	0.095	0.0000300	0.000000888		3495980
33'44'5-PentaCB-(126)	ng/L	0.014 U (1)	0.014	0.095	0.100	0.00140		3495980
33'455'-PentaCB-(127)	ng/L	0.0020 U	0.0020	0.095				3495980
HexaCB-(128)+(166)	ng/L	0.426	0.0028	0.19				3495980
HexaCB-(129)+(138)+(163)	ng/L	2.85	0.0031	0.29				3495980
22'33'45'-HexaCB-(130)	ng/L	0.161	0.0036	0.095				3495980
22'33'46-HexaCB-(131)	ng/L	0.0327 J	0.0037	0.095				3495980
22'33'46'-HexaCB-(132)	ng/L	0.772	0.0033	0.095				3495980
22'33'55'-HexaCB-(133)	ng/L	0.0232 J	0.0032	0.095				3495980
HexaCB-(134)+(143)	ng/L	0.0894 J	0.0036	0.19				3495980
HexaCB-(135)+(151)	ng/L	0.526	0.0012	0.19				3495980
22'33'66'-HexaCB-(136)	ng/L	0.187	0.00085	0.095				3495980
22'344'5-HexaCB-(137)	ng/L	0.105	0.0030	0.095				3495980
HexaCB-(139)+(140)	ng/L	0.0340 J	0.0029	0.19				3495980
22'3455'-HexaCB-(141)	ng/L	0.472	0.0034	0.095				3495980
22'3456-HexaCB-(142)	ng/L	0.0034 U	0.0034	0.095				3495980
22'345'6-HexaCB-(144)	ng/L	0.0795 J	0.0012	0.095				3495980
22'3466'-HexaCB-(145)	ng/L	0.00087 U	0.00087	0.095				3495980
22'34'55'-HexaCB-(146)	ng/L	0.288	0.0030	0.095				3495980
HexaCB-(147)+(149)	ng/L	1.42	0.0029	0.19				3495980
22'34'56'-HexaCB-(148)	ng/L	0.0011 U	0.0011	0.095				3495980
22'34'66'-HexaCB-(150)	ng/L	0.0018 U	0.0018	0.095				3495980
22'3566'-HexaCB-(152)	ng/L	0.00083 U	0.00083	0.095				3495980
HexaCB-(153)+(168)	ng/L	1.71	0.0024	0.19				3495980
22'44'56'-HexaCB-(154)	ng/L	0.0170 J	0.0010	0.095				3495980

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

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COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'44'66'-HexaCB-(155)	ng/L	0.0013 U	0.0013	0.095				3495980
HexaCB-(156)+(157)	ng/L	0.306	0.0064	0.19	0.0000300	0.00000918		3495980
233'44'6-HexaCB-(158)	ng/L	0.267	0.0024	0.095				3495980
233'455'-HexaCB-(159)	ng/L	0.0214 J	0.0071	0.095				3495980
233'456-HexaCB-(160)	ng/L	0.0027 U	0.0027	0.095				3495980
233'45'6-HexaCB-(161)	ng/L	0.0023 U	0.0023	0.095				3495980
233'4'55'-HexaCB-(162)	ng/L	0.0068 U	0.0068	0.095				3495980
233'4'5'6-HexaCB-(164)	ng/L	0.189	0.0026	0.095				3495980
233'55'6-HexaCB-(165)	ng/L	0.0025 U	0.0025	0.095				3495980
23'44'55'-HexaCB-(167)	ng/L	0.0956	0.0067	0.095	0.0000300	0.00000287		3495980
33'44'55'-HexaCB-(169)	ng/L	0.0069 U	0.0069	0.095	0.0300	0.000207		3495980
22'33'44'5-HeptaCB-(170)	ng/L	0.489	0.0037	0.095				3495980
HeptaCB-(171)+(173)	ng/L	0.153 J	0.0049	0.19				3495980
22'33'455'-HeptaCB-(172)	ng/L	0.0932 J	0.0049	0.095				3495980
22'33'456'-HeptaCB-(174)	ng/L	0.501	0.0045	0.095				3495980
22'33'45'6-HeptaCB-(175)	ng/L	0.0230 J	0.0011	0.095				3495980
22'33'466'-HeptaCB-(176)	ng/L	0.0507 J	0.00081	0.095				3495980
22'33'45'6'-HeptaCB-(177)	ng/L	0.289	0.0050	0.095				3495980
22'33'55'6-HeptaCB-(178)	ng/L	0.0939 J	0.0011	0.095				3495980
22'33'566'-HeptaCB-(179)	ng/L	0.162	0.00078	0.095				3495980
HeptaCB-(180)+(193)	ng/L	1.34	0.0037	0.19				3495980
22'344'56-HeptaCB-(181)	ng/L	0.0046 U	0.0046	0.095				3495980
22'344'56'-HeptaCB-(182)	ng/L	0.0034 U (1)	0.0034	0.095				3495980
22'344'5'6-HeptaCB-(183)	ng/L	0.289	0.0038	0.095				3495980
22'344'66'-HeptaCB-(184)	ng/L	0.00073 U	0.00073	0.095				3495980
22'3455'6-HeptaCB-(185)	ng/L	0.0052 U	0.0052	0.095				3495980
22'34566'-HeptaCB-(186)	ng/L	0.00082 U	0.00082	0.095				3495980
22'34'55'6-HeptaCB-(187)	ng/L	0.619	0.0010	0.095				3495980
22'34'566'-HeptaCB-(188)	ng/L	0.0013 U	0.0013	0.095				3495980

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	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'44'55'-HeptaCB-(189)	ng/L	0.019 U (1)	0.019	0.095	0.0000300	0.000000570		3495980
233'44'56-HeptaCB-(190)	ng/L	0.0949 J	0.0040	0.095				3495980
233'44'5'6-HeptaCB-(191)	ng/L	0.0216 J	0.0037	0.095				3495980
233'455'6-HeptaCB-(192)	ng/L	0.0039 U	0.0039	0.095				3495980
22'33'44'55'-OctaCB-(194)	ng/L	0.354	0.0037	0.095				3495980
22'33'44'56-OctaCB-(195)	ng/L	0.0993	0.0039	0.095				3495980
22'33'44'56'-OctaCB-(196)	ng/L	0.184	0.0040	0.095				3495980
22'33'44'66'OctaCB-(197)	ng/L	0.0070 U (1)	0.0070	0.095				3495980
OctaCB-(198)+(199)	ng/L	0.487	0.0040	0.19				3495980
22'33'4566'-OctaCB-(200)	ng/L	0.0541 J	0.0033	0.095				3495980
22'33'45'66'-OctaCB-(201)	ng/L	0.0480 J	0.0027	0.095				3495980
22'33'55'66'-OctaCB-(202)	ng/L	0.100	0.0039	0.095				3495980
22'344'55'6-OctaCB-(203)	ng/L	0.323	0.0037	0.095				3495980
22'344'566'-OctaCB-(204)	ng/L	0.0028 U	0.0028	0.095				3495980
233'44'55'6-OctaCB-(205)	ng/L	0.0167 J	0.0027	0.095				3495980
22'33'44'55'6-NonaCB-(206)	ng/L	0.372	0.0043	0.095				3495980
22'33'44'566'-NonaCB-(207)	ng/L	0.0407 J	0.0034	0.095				3495980
22'33'455'66'-NonaCB-(208)	ng/L	0.0808 J	0.0040	0.095				3495980
DecaCB-(209)	ng/L	0.0638 J	0.0021	0.095				3495980
Monochlorobiphenyl	ng/L	0.0787	0.0015	N/A				3495980
Dichlorobiphenyl	ng/L	6.23	0.036	N/A				3495980
Trichlorobiphenyl	ng/L	13.6	0.0047	N/A				3495980
Tetrachlorobiphenyl	ng/L	13.4	0.0019	N/A				3495980
Pentachlorobiphenyl	ng/L	10.1	0.0017	N/A				3495980
Hexachlorobiphenyl	ng/L	10.1	0.0071	N/A				3495980
Heptachlorobiphenyl	ng/L	4.22	0.0052	N/A				3495980
Octachlorobiphenyl	ng/L	1.67	0.0040	N/A				3495980
Nonachlorobiphenyl	ng/L	0.493	0.0043	N/A				3495980
Decachlorobiphenyl	ng/L	0.0638	0.0021	N/A				3495980

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	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
Total PCB	ng/L	59.9	N/A	N/A				3495980
TOTAL TOXIC EQUIVALENCY	ng/L					0.00172		
Surrogate Recovery (%)								
C13-2,44'-TriCB-(28)	%	101						3495980
C13-22'33'44'55'6-NonaCB-(206)	%	113						3495980
C13-22'33'44'5-HeptaCB-(170)	%	106						3495980
C13-22'33'455'66'-NonaCB-(208)	%	121						3495980
C13-22'33'55'66'-OctaCB-(202)	%	118						3495980
C13-22'33'55'6-HeptaCB-(178)	%	118						3495980
C13-22'344'55'-HeptaCB-(180)	%	108						3495980
C13-22'34'566'-HeptaCB-(188)	%	107						3495980
C13-22'44'66'-HexaCB-(155)	%	99						3495980
C13-22'466'-PentaCB-(104)	%	112						3495980
C13-22'66'-TetraCB-(54)	%	95						3495980
C13-22'6-TriCB-(19)	%	90						3495980
C13-22'-DiCB-(4)	%	59						3495980
C13-233'44'55'6-OctaCB-(205)	%	99						3495980
C13-233'44'55'-HeptaCB-(189)	%	94						3495980
C13-233'44'-PentaCB-(105)	%	115						3495980
C13-233'55'-PentaCB-(111)	%	116						3495980
C13-23'44'55'-HexaCB-(167)	%	97						3495980
C13-2344'5-PentaCB-(114)	%	113						3495980
C13-23'44'5-PentaCB-(118)	%	116						3495980
C13-2'344'5-PentaCB-(123)	%	115						3495980
C13-2-MonoCB-(1)	%	40						3495980
C13-33'44'55'-HexaCB-(169)	%	39						3495980
C13-33'44'5-PentaCB-(126)	%	100						3495980
C13-33'44'-TetraCB-(77)	%	109						3495980
C13-344'5-TetraCB-(81)	%	109						3495980

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8683						
Sampling Date		2014/01/07 13:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B22-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-344'-TriCB-(37)	%	95						3495980
C13-44'-DiCB-(15)	%	99						3495980
C13-4-MonoCB-(3)	%	51						3495980
C13-DecaCB-(209)	%	93						3495980
C13-HexaCB-(156)+(157)	%	95						3495980

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.111	0.0035	0.095				3495980
3-MonoCB-(2)	ng/L	0.0160 J	0.0029	0.095				3495980
4-MonoCB-(3)	ng/L	0.0566 J	0.0033	0.095				3495980
22'-DiCB-(4)	ng/L	0.996	0.014	0.095				3495980
2,3-DiCB-(5)	ng/L	0.031 U (1)	0.031	0.095				3495980
2,3'-DiCB-(6)	ng/L	0.327	0.021	0.095				3495980
2,4-DiCB-(7)	ng/L	0.050 U (1)	0.050	0.095				3495980
2,4'-DiCB-(8)	ng/L	1.32	0.021	0.095				3495980
2,5-DiCB-(9)	ng/L	0.086 U (1)	0.086	0.095				3495980
2,6-DiCB-(10)	ng/L	0.019 U (1)	0.019	0.095				3495980
3,3'-DiCB-(11)	ng/L	0.722	0.022	0.095				3495980
DiCB-(12)+(13)	ng/L	0.161 J	0.022	0.19				3495980
3,5-DiCB-(14)	ng/L	0.021 U	0.021	0.095				3495980
4,4'-DiCB-(15)	ng/L	1.68	0.035	0.095				3495980
22'3-TriCB-(16)	ng/L	2.00	0.0094	0.095				3495980
22'4-TriCB-(17)	ng/L	1.50	0.0071	0.095				3495980
TriCB-(18)+(30)	ng/L	2.99	0.0057	0.19				3495980
22'6-TriCB-(19)	ng/L	0.391	0.0072	0.095				3495980
TriCB-(20) + (28)	ng/L	6.06	0.0031	0.19				3495980
TriCB-(21)+(33)	ng/L	3.66	0.0032	0.19				3495980
234'-TriCB-(22)	ng/L	2.42	0.0033	0.095				3495980
235-TriCB-(23)	ng/L	0.0033 U	0.0033	0.095				3495980
236-TriCB-(24)	ng/L	0.0050 U	0.0050	0.095				3495980
23'4-TriCB-(25)	ng/L	0.437	0.0032	0.095				3495980
TriCB-(26)+(29)	ng/L	0.961	0.0032	0.19				3495980
23'6-TriCB-(27)	ng/L	0.263	0.0048	0.095				3495980
24'5-TriCB-(31)	ng/L	4.80	0.0030	0.095				3495980
24'6-TriCB-(32)	ng/L	1.10	0.0045	0.095				3495980
23'5'-TriCB-(34)	ng/L	0.0032 U	0.0032	0.095				3495980

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'4-TriCB-(35)	ng/L	0.118	0.0034	0.095				3495980
33'5-TriCB-(36)	ng/L	0.0030 U	0.0030	0.095				3495980
344'-TriCB-(37)	ng/L	2.15	0.0040	0.095				3495980
345-TriCB-(38)	ng/L	0.0033 U	0.0033	0.095				3495980
34'5-TriCB-(39)	ng/L	0.0223 J	0.0031	0.095				3495980
TetraCB-(40)+(41)+(71)	ng/L	3.06	0.0014	0.29				3495980
22'34'-TetraCB-(42)	ng/L	1.72	0.0018	0.095				3495980
22'35-TetraCB-(43)	ng/L	0.225	0.0020	0.095				3495980
TetraCB-(44)+(47)+(65)	ng/L	5.29	0.0013	0.29				3495980
TetraCB-(45)+(51)	ng/L	0.851	0.0014	0.19				3495980
22'36'-TetraCB-(46)	ng/L	0.313	0.0017	0.095				3495980
22'45-TetraCB-(48)	ng/L	0.923	0.0013	0.095				3495980
TetraCB-(49)+TetraCB-(69)	ng/L	2.75	0.0012	0.19				3495980
TetraCB-(50)+(53)	ng/L	0.582	0.0013	0.19				3495980
22'55'-TetraCB-(52)	ng/L	5.55	0.0013	0.095				3495980
22'66'-TetraCB-(54)	ng/L	0.010 U (1)	0.010	0.095				3495980
233'4-TetraCB-(55)	ng/L	0.0054 U	0.0054	0.095				3495980
233'4'-Tetra CB(56)	ng/L	1.83	0.0061	0.095				3495980
233'5-TetraCB-(57)	ng/L	0.0053 U	0.0053	0.095				3495980
233'5'-TetraCB-(58)	ng/L	0.0052 U	0.0052	0.095				3495980
TetraCB-(59)+(62)+(75)	ng/L	0.449	0.0010	0.29				3495980
2344'-TetraCB -(60)	ng/L	0.805	0.0055	0.095				3495980
TetraCB-(61)+(70)+(74)+(76)	ng/L	6.52	0.0055	0.38				3495980
234'5-TetraCB-(63)	ng/L	0.106	0.0051	0.095				3495980
234'6-TetraCB-(64)	ng/L	2.41	0.0011	0.095				3495980
23'44'-TetraCB-(66)	ng/L	3.39	0.0052	0.095				3495980
23'45-TetraCB-(67)	ng/L	0.128	0.0051	0.095				3495980
23'45'-TetraCB-(68)	ng/L	0.0118 J	0.0048	0.095				3495980
23'55'-TetraCB-(72)	ng/L	0.0204 J	0.0049	0.095				3495980

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'5'6-TetraCB-(73)	ng/L	0.00093 U	0.00093	0.095				3495980
33'44'-TetraCB-(77)	ng/L	0.462	0.0058	0.095	0.000100	0.0000462		3495980
33'45-TetraCB-(78)	ng/L	0.0056 U	0.0056	0.095				3495980
33'45'-TetraCB(79)	ng/L	0.0584 J	0.0049	0.095				3495980
33'55'-TetraCB-(80)	ng/L	0.0050 U	0.0050	0.095				3495980
344'5-TetraCB-(81)	ng/L	0.0129 J	0.0060	0.095	0.000300	0.00000387		3495980
22'33'4-PentaCB-(82)	ng/L	0.992	0.0023	0.095				3495980
PentaCB-(83)+(99)	ng/L	3.25	0.0020	0.19				3495980
22'33'6-PentaCB-(84)	ng/L	1.88	0.0023	0.095				3495980
PentaCB-(85)+(116)+(117)	ng/L	1.01	0.0017	0.29				3495980
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	5.08	0.0017	0.57				3495980
PentaCB-(88)+(91)	ng/L	0.781	0.0019	0.19				3495980
22'346'-PentaCB-(89)	ng/L	0.0682 J	0.0021	0.095				3495980
PentaCB-(90)+(101)+(113)	ng/L	6.49	0.0017	0.29				3495980
22'355'-PentaCB-(92)	ng/L	1.08	0.0020	0.095				3495980
PentaCB-(93)+(98)+(100)+(102)	ng/L	0.226 J	0.0020	0.38				3495980
22'356'-PentaCB-(94)	ng/L	0.0267 J	0.0020	0.095				3495980
22'35'6-PentaCB-(95)	ng/L	4.66	0.0018	0.095				3495980
22'366'-PentaCB-(96)	ng/L	0.0392 J	0.0019	0.095				3495980
22'45'6-PentaCB-(103)	ng/L	0.0250 J	0.0017	0.095				3495980
22'466'-PentaCB-(104)	ng/L	0.0026 U	0.0026	0.095				3495980
233'44'-PentaCB-(105)	ng/L	3.32	0.0011	0.095	0.0000300	0.0000996		3495980
233'45-PentaCB-(106)	ng/L	0.0011 U	0.0011	0.095				3495980
233'4'5-PentaCB-(107)	ng/L	0.453	0.0010	0.095				3495980
PentaCB-(108)+(124)	ng/L	0.270	0.0011	0.19				3495980
PentaCB-(110)+(115)	ng/L	10.3	0.0016	0.19				3495980
233'55'-PentaCB-(111)	ng/L	0.0014 U	0.0014	0.095				3495980
233'56-PentaCB-(112)	ng/L	0.0016 U	0.0016	0.095				3495980
2344'5-PentaCB-(114)	ng/L	0.141	0.0011	0.095	0.0000300	0.00000423		3495980

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Maxxam Job #: B403971
Report Date: 2014/01/30

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'44'5-PentaCB-(118)	ng/L	7.53	0.0012	0.095	0.0000300	0.000226		3495980
23'455'-PentaCB-(120)	ng/L	0.0096 J	0.0014	0.095				3495980
23'45'6-PentaCB-(121)	ng/L	0.0014 U	0.0014	0.095				3495980
233'4'5'-PentaCB-(122)	ng/L	0.0922 J	0.0012	0.095				3495980
23'44'5'-PentaCB-(123)	ng/L	0.0897 J	0.0013	0.095	0.0000300	0.00000269		3495980
33'44'5-PentaCB-(126)	ng/L	0.0353 J	0.0011	0.095	0.100	0.00353		3495980
33'455'-PentaCB-(127)	ng/L	0.0076 U (1)	0.0076	0.095				3495980
HexaCB-(128)+(166)	ng/L	1.78	0.0080	0.19				3495980
HexaCB-(129)+(138)+(163)	ng/L	11.5	0.0087	0.29				3495980
22'33'45'-HexaCB-(130)	ng/L	0.627	0.010	0.095				3495980
22'33'46-HexaCB-(131)	ng/L	0.141	0.011	0.095				3495980
22'33'46'-HexaCB-(132)	ng/L	3.37	0.0094	0.095				3495980
22'33'55'-HexaCB-(133)	ng/L	0.0956	0.0090	0.095				3495980
HexaCB-(134)+(143)	ng/L	0.418	0.010	0.19				3495980
HexaCB-(135)+(151)	ng/L	2.14	0.0010	0.19				3495980
22'33'66'-HexaCB-(136)	ng/L	0.822	0.00077	0.095				3495980
22'344'5-HexaCB-(137)	ng/L	0.544	0.0086	0.095				3495980
HexaCB-(139)+(140)	ng/L	0.144 J	0.0082	0.19				3495980
22'3455'-HexaCB-(141)	ng/L	1.82	0.0096	0.095				3495980
22'3456-HexaCB-(142)	ng/L	0.0096 U	0.0096	0.095				3495980
22'345'6-HexaCB-(144)	ng/L	0.338	0.0010	0.095				3495980
22'3466'-HexaCB-(145)	ng/L	0.0022 U (1)	0.0022	0.095				3495980
22'34'55'-HexaCB-(146)	ng/L	1.11	0.0084	0.095				3495980
HexaCB-(147)+(149)	ng/L	5.96	0.0081	0.19				3495980
22'34'56'-HexaCB-(148)	ng/L	0.0049 J	0.0010	0.095				3495980
22'34'66'-HexaCB-(150)	ng/L	0.00750 J	0.00071	0.095				3495980
22'3566'-HexaCB-(152)	ng/L	0.0052 U (1)	0.0052	0.095				3495980
HexaCB-(153)+(168)	ng/L	6.71	0.0068	0.19				3495980
22'44'56'-HexaCB-(154)	ng/L	0.0490 J	0.00093	0.095				3495980

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Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'44'66'-HexaCB-(155)	ng/L	0.0012 U	0.0012	0.095				3495980
HexaCB-(156)+(157)	ng/L	1.29	0.0055	0.19	0.0000300	0.0000387		3495980
233'44'6-HexaCB-(158)	ng/L	1.07	0.0066	0.095				3495980
233'455'-HexaCB-(159)	ng/L	0.0663 J	0.0062	0.095				3495980
233'456-HexaCB-(160)	ng/L	0.0075 U	0.0075	0.095				3495980
233'45'6-HexaCB-(161)	ng/L	0.0065 U	0.0065	0.095				3495980
233'4'55'-HexaCB-(162)	ng/L	0.0285 J	0.0059	0.095				3495980
233'4'5'6-HexaCB-(164)	ng/L	0.669	0.0074	0.095				3495980
233'55'6-HexaCB-(165)	ng/L	0.0071 U	0.0071	0.095				3495980
23'44'55'-HexaCB-(167)	ng/L	0.412	0.0058	0.095	0.0000300	0.0000124		3495980
33'44'55'-HexaCB-(169)	ng/L	0.0060 U	0.0060	0.095	0.0300	0.000180		3495980
22'33'44'5-HeptaCB-(170)	ng/L	1.73	0.0036	0.095				3495980
HeptaCB-(171)+(173)	ng/L	0.550	0.0048	0.19				3495980
22'33'455'-HeptaCB-(172)	ng/L	0.306	0.0048	0.095				3495980
22'33'456'-HeptaCB-(174)	ng/L	0.0044 U	0.0044	0.095				3495980
22'33'45'6-HeptaCB-(175)	ng/L	0.0769 J	0.0021	0.095				3495980
22'33'466'-HeptaCB-(176)	ng/L	0.198	0.0015	0.095				3495980
22'33'45'6'-HeptaCB-(177)	ng/L	1.03	0.0049	0.095				3495980
22'33'55'6-HeptaCB-(178)	ng/L	0.327	0.0022	0.095				3495980
22'33'566'-HeptaCB-(179)	ng/L	0.664	0.0015	0.095				3495980
HeptaCB-(180)+(193)	ng/L	4.74	0.0037	0.19				3495980
22'344'56-HeptaCB-(181)	ng/L	0.0045 U	0.0045	0.095				3495980
22'344'56'-HeptaCB-(182)	ng/L	0.0021 U	0.0021	0.095				3495980
22'344'5'6-HeptaCB-(183)	ng/L	1.11	0.0037	0.095				3495980
22'344'66'-HeptaCB-(184)	ng/L	0.0014 U	0.0014	0.095				3495980
22'3455'6-HeptaCB-(185)	ng/L	2.19	0.0051	0.095				3495980
22'34566'-HeptaCB-(186)	ng/L	0.0016 U	0.0016	0.095				3495980
22'34'55'6-HeptaCB-(187)	ng/L	2.27	0.0019	0.095				3495980
22'34'566'-HeptaCB-(188)	ng/L	0.0024 U	0.0024	0.095				3495980

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Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'44'55'-HeptaCB-(189)	ng/L	0.073 U (1)	0.073	0.095	0.0000300	0.00000219		3495980
233'44'56-HeptaCB-(190)	ng/L	0.340	0.0039	0.095				3495980
233'44'5'6-HeptaCB-(191)	ng/L	0.0736 J	0.0036	0.095				3495980
233'455'6-HeptaCB-(192)	ng/L	0.0038 U	0.0038	0.095				3495980
22'33'44'55'-OctaCB-(194)	ng/L	1.18	0.011	0.095				3495980
22'33'44'56-OctaCB-(195)	ng/L	0.360	0.011	0.095				3495980
22'33'44'56'-OctaCB-(196)	ng/L	0.642	0.0058	0.095				3495980
22'33'44'66'OctaCB-(197)	ng/L	0.0276 J	0.0034	0.095				3495980
OctaCB-(198)+(199)	ng/L	1.71	0.0057	0.19				3495980
22'33'4566'-OctaCB-(200)	ng/L	0.198	0.0047	0.095				3495980
22'33'45'66'-OctaCB-(201)	ng/L	0.190	0.0039	0.095				3495980
22'33'55'66'-OctaCB-(202)	ng/L	0.352	0.0056	0.095				3495980
22'344'55'6-OctaCB-(203)	ng/L	1.10	0.0054	0.095				3495980
22'344'566'-OctaCB-(204)	ng/L	0.0040 U	0.0040	0.095				3495980
233'44'55'6-OctaCB-(205)	ng/L	0.049 U (1)	0.049	0.095				3495980
22'33'44'55'6-NonaCB-(206)	ng/L	1.25	0.0044	0.095				3495980
22'33'44'566'-NonaCB-(207)	ng/L	0.143	0.0035	0.095				3495980
22'33'455'66'-NonaCB-(208)	ng/L	0.288	0.0040	0.095				3495980
DecaCB-(209)	ng/L	0.306	0.0088	0.095				3495980
Monochlorobiphenyl	ng/L	0.184	0.0035	N/A				3495980
Dichlorobiphenyl	ng/L	5.21	0.035	N/A				3495980
Trichlorobiphenyl	ng/L	28.9	0.0094	N/A				3495980
Tetrachlorobiphenyl	ng/L	37.5	0.0061	N/A				3495980
Pentachlorobiphenyl	ng/L	47.9	0.0026	N/A				3495980
Hexachlorobiphenyl	ng/L	41.1	0.011	N/A				3495980
Heptachlorobiphenyl	ng/L	15.6	0.0070	N/A				3495980
Octachlorobiphenyl	ng/L	5.77	0.011	N/A				3495980
Nonachlorobiphenyl	ng/L	1.68	0.0044	N/A				3495980
Decachlorobiphenyl	ng/L	0.306	0.0088	N/A				3495980

RDL = Reportable Detection Limit
EDL = Estimated Detection Limit
QC Batch = Quality Control Batch
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	**B20-SP1-20140107**	**EDL**	**RDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
Total PCB	ng/L	184	N/A	N/A				3495980
TOTAL TOXIC EQUIVALENCY	ng/L					0.00415		
Surrogate Recovery (%)								
C13-2,44'-TriCB-(28)	%	99						3495980
C13-22'33'44'55'6-NonaCB-(206)	%	109						3495980
C13-22'33'44'5-HeptaCB-(170)	%	114						3495980
C13-22'33'455'66'-NonaCB-(208)	%	128						3495980
C13-22'33'55'66'-OctaCB-(202)	%	127						3495980
C13-22'33'55'6-HeptaCB-(178)	%	111						3495980
C13-22'344'55'-HeptaCB-(180)	%	117						3495980
C13-22'34'566'-HeptaCB-(188)	%	107						3495980
C13-22'44'66'-HexaCB-(155)	%	106						3495980
C13-22'466'-PentaCB-(104)	%	116						3495980
C13-22'66'-TetraCB-(54)	%	87						3495980
C13-22'6-TriCB-(19)	%	75						3495980
C13-22'-DiCB-(4)	%	44						3495980
C13-233'44'55'6-OctaCB-(205)	%	96						3495980
C13-233'44'55'-HeptaCB-(189)	%	96						3495980
C13-233'44'-PentaCB-(105)	%	115						3495980
C13-233'55'-PentaCB-(111)	%	110						3495980
C13-23'44'55'-HexaCB-(167)	%	97						3495980
C13-2344'5-PentaCB-(114)	%	111						3495980
C13-23'44'5-PentaCB-(118)	%	115						3495980
C13-2'344'5-PentaCB-(123)	%	115						3495980
C13-2-MonoCB-(1)	%	29						3495980
C13-33'44'55'-HexaCB-(169)	%	79						3495980
C13-33'44'5-PentaCB-(126)	%	110						3495980
C13-33'44'-TetraCB-(77)	%	108						3495980
C13-344'5-TetraCB-(81)	%	107						3495980

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Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8684						
Sampling Date		2014/01/07 14:15						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-344'-TriCB-(37)	%	96						3495980
C13-44'-DiCB-(15)	%	92						3495980
C13-4-MonoCB-(3)	%	42						3495980
C13-DecaCB-(209)	%	93						3495980
C13-HexaCB-(156)+(157)	%	96						3495980

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Apex Laboratories
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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.102	0.0018	0.095				3495980
3-MonoCB-(2)	ng/L	0.0216 J	0.0015	0.095				3495980
4-MonoCB-(3)	ng/L	0.0918 J	0.0017	0.095				3495980
22'-DiCB-(4)	ng/L	2.35	0.0091	0.095				3495980
2,3-DiCB-(5)	ng/L	0.020 U	0.020	0.095				3495980
2,3'-DiCB-(6)	ng/L	0.826	0.019	0.095				3495980
2,4-DiCB-(7)	ng/L	0.128	0.019	0.095				3495980
2,4'-DiCB-(8)	ng/L	4.13	0.018	0.095				3495980
2,5-DiCB-(9)	ng/L	0.218	0.019	0.095				3495980
2,6-DiCB-(10)	ng/L	0.0723 J	0.0061	0.095				3495980
3,3'-DiCB-(11)	ng/L	0.393	0.020	0.095				3495980
DiCB-(12)+(13)	ng/L	0.580	0.020	0.19				3495980
3,5-DiCB-(14)	ng/L	0.019 U	0.019	0.095				3495980
4,4'-DiCB-(15)	ng/L	7.90	0.031	0.095				3495980
22'3-TriCB-(16)	ng/L	10.8	0.012	0.095				3495980
22'4-TriCB-(17)	ng/L	8.27	0.0091	0.095				3495980
TriCB-(18)+(30)	ng/L	16.1	0.0073	0.19				3495980
22'6-TriCB-(19)	ng/L	1.75	0.0093	0.095				3495980
TriCB-(20) + (28)	ng/L	35.2	0.0053	0.19				3495980
TriCB-(21)+(33)	ng/L	17.8	0.0055	0.19				3495980
234'-TriCB-(22)	ng/L	13.1	0.0056	0.095				3495980
235-TriCB-(23)	ng/L	0.0217 J	0.0056	0.095				3495980
236-TriCB-(24)	ng/L	0.0064 U	0.0064	0.095				3495980
23'4-TriCB-(25)	ng/L	2.46	0.0054	0.095				3495980
TriCB-(26)+(29)	ng/L	5.25	0.0054	0.19				3495980
23'6-TriCB-(27)	ng/L	1.48	0.0062	0.095				3495980
24'5-TriCB-(31)	ng/L	27.0	0.0050	0.095				3495980
24'6-TriCB-(32)	ng/L	6.49	0.0058	0.095				3495980
23'5'-TriCB-(34)	ng/L	0.071 U (1)	0.071	0.095				3495980

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Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'4-TriCB-(35)	ng/L	0.550	0.0057	0.095				3495980
33'5-TriCB-(36)	ng/L	0.0050 U	0.0050	0.095				3495980
344'-TriCB-(37)	ng/L	13.1	0.0068	0.095				3495980
345-TriCB-(38)	ng/L	0.0056 U	0.0056	0.095				3495980
34'5-TriCB-(39)	ng/L	0.133	0.0052	0.095				3495980
TetraCB-(40)+(41)+(71)	ng/L	21.0	0.0045	0.29				3495980
22'34'-TetraCB-(42)	ng/L	12.2	0.0058	0.095				3495980
22'35-TetraCB-(43)	ng/L	1.61	0.0067	0.095				3495980
TetraCB-(44)+(47)+(65)	ng/L	34.8	0.0044	0.29				3495980
TetraCB-(45)+(51)	ng/L	6.37	0.0045	0.19				3495980
22'36'-TetraCB-(46)	ng/L	2.30	0.0055	0.095				3495980
22'45-TetraCB-(48)	ng/L	6.93	0.0043	0.095				3495980
TetraCB-(49)+TetraCB-(69)	ng/L	19.4	0.0041	0.19				3495980
TetraCB-(50)+(53)	ng/L	4.35	0.0043	0.19				3495980
22'55'-TetraCB-(52)	ng/L	33.8	0.0044	0.095				3495980
22'66'-TetraCB-(54)	ng/L	0.0670 J	0.0014	0.095				3495980
233'4-TetraCB-(55)	ng/L	0.0046 U	0.0046	0.095				3495980
233'4'-Tetra CB(56)	ng/L	14.3	0.0051	0.095				3495980
233'5-TetraCB-(57)	ng/L	0.103	0.0045	0.095				3495980
233'5'-TetraCB-(58)	ng/L	0.0044 U	0.0044	0.095				3495980
TetraCB-(59)+(62)+(75)	ng/L	3.12	0.0034	0.29				3495980
2344'-TetraCB -(60)	ng/L	7.47	0.0046	0.095				3495980
TetraCB-(61)+(70)+(74)+(76)	ng/L	45.8	0.0046	0.38				3495980
234'5-TetraCB-(63)	ng/L	0.958	0.0042	0.095				3495980
234'6-TetraCB-(64)	ng/L	17.8	0.0037	0.095				3495980
23'44'-TetraCB-(66)	ng/L	25.1	0.0044	0.095				3495980
23'45-TetraCB-(67)	ng/L	0.913	0.0043	0.095				3495980
23'45'-TetraCB-(68)	ng/L	0.0597 J	0.0040	0.095				3495980
23'55'-TetraCB-(72)	ng/L	0.125	0.0041	0.095				3495980

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Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'5'6-TetraCB-(73)	ng/L	0.0031 U	0.0031	0.095				3495980
33'44'-TetraCB-(77)	ng/L	2.97	0.0049	0.095	0.000100	0.000297		3495980
33'45-TetraCB-(78)	ng/L	0.0047 U	0.0047	0.095				3495980
33'45'-TetraCB(79)	ng/L	0.195	0.0041	0.095				3495980
33'55'-TetraCB-(80)	ng/L	0.0042 U	0.0042	0.095				3495980
344'5-TetraCB-(81)	ng/L	0.124	0.0051	0.095	0.000300	0.0000372		3495980
22'33'4-PentaCB-(82)	ng/L	4.64	0.0089	0.095				3495980
PentaCB-(83)+(99)	ng/L	14.3	0.0075	0.19				3495980
22'33'6-PentaCB-(84)	ng/L	8.51	0.0089	0.095				3495980
PentaCB-(85)+(116)+(117)	ng/L	4.91	0.0065	0.29				3495980
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	21.5	0.0066	0.57				3495980
PentaCB-(88)+(91)	ng/L	4.09	0.0074	0.19				3495980
22'346'-PentaCB-(89)	ng/L	0.473	0.0080	0.095				3495980
PentaCB-(90)+(101)+(113)	ng/L	25.6	0.0065	0.29				3495980
22'355'-PentaCB-(92)	ng/L	4.42	0.0077	0.095				3495980
PentaCB-(93)+(98)+(100)+(102)	ng/L	1.35	0.0077	0.38				3495980
22'356'-PentaCB-(94)	ng/L	0.157	0.0078	0.095				3495980
22'35'6-PentaCB-(95)	ng/L	20.2	0.0070	0.095				3495980
22'366'-PentaCB-(96)	ng/L	0.261	0.0026	0.095				3495980
22'45'6-PentaCB-(103)	ng/L	0.129	0.0067	0.095				3495980
22'466'-PentaCB-(104)	ng/L	0.0037 U	0.0037	0.095				3495980
233'44'-PentaCB-(105)	ng/L	14.4	0.0040	0.095	0.0000300	0.000432		3495980
233'45-PentaCB-(106)	ng/L	0.0037 U	0.0037	0.095				3495980
233'4'5-PentaCB-(107)	ng/L	1.88	0.0036	0.095				3495980
PentaCB-(108)+(124)	ng/L	1.06	0.0037	0.19				3495980
PentaCB-(110)+(115)	ng/L	38.4	0.0063	0.19				3495980
233'55'-PentaCB-(111)	ng/L	0.0055 U	0.0055	0.095				3495980
233'56-PentaCB-(112)	ng/L	0.0062 U	0.0062	0.095				3495980
2344'5-PentaCB-(114)	ng/L	0.770	0.0040	0.095	0.0000300	0.0000231		3495980

RDL = Reportable Detection Limit
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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'44'5-PentaCB-(118)	ng/L	28.9	0.0040	0.095	0.0000300	0.000867		3495980
23'455'-PentaCB-(120)	ng/L	0.0299 J	0.0055	0.095				3495980
23'45'6-PentaCB-(121)	ng/L	0.0055 U	0.0055	0.095				3495980
233'4'5'-PentaCB-(122)	ng/L	0.409	0.0041	0.095				3495980
23'44'5'-PentaCB-(123)	ng/L	0.407	0.0044	0.095	0.0000300	0.0000122		3495980
33'44'5-PentaCB-(126)	ng/L	0.108	0.0039	0.095	0.100	0.0108		3495980
33'455'-PentaCB-(127)	ng/L	0.030 U (1)	0.030	0.095				3495980
HexaCB-(128)+(166)	ng/L	5.96	0.0059	0.19				3495980
HexaCB-(129)+(138)+(163)	ng/L	41.0	0.0064	0.29				3495980
22'33'45'-HexaCB-(130)	ng/L	2.18	0.0076	0.095				3495980
22'33'46-HexaCB-(131)	ng/L	0.506	0.0078	0.095				3495980
22'33'46'-HexaCB-(132)	ng/L	12.4	0.0070	0.095				3495980
22'33'55'-HexaCB-(133)	ng/L	0.328	0.0067	0.095				3495980
HexaCB-(134)+(143)	ng/L	1.74	0.0075	0.19				3495980
HexaCB-(135)+(151)	ng/L	8.48	0.0021	0.19				3495980
22'33'66'-HexaCB-(136)	ng/L	3.33	0.0016	0.095				3495980
22'344'5-HexaCB-(137)	ng/L	1.40	0.0064	0.095				3495980
HexaCB-(139)+(140)	ng/L	0.505	0.0061	0.19				3495980
22'3455'-HexaCB-(141)	ng/L	7.15	0.0072	0.095				3495980
22'3456-HexaCB-(142)	ng/L	0.0072 U	0.0072	0.095				3495980
22'345'6-HexaCB-(144)	ng/L	1.35	0.0021	0.095				3495980
22'3466'-HexaCB-(145)	ng/L	0.0101 J	0.0016	0.095				3495980
22'34'55'-HexaCB-(146)	ng/L	4.04	0.0062	0.095				3495980
HexaCB-(147)+(149)	ng/L	23.0	0.0061	0.19				3495980
22'34'56'-HexaCB-(148)	ng/L	0.0175 J	0.0021	0.095				3495980
22'34'66'-HexaCB-(150)	ng/L	0.0239 J	0.0014	0.095				3495980
22'3566'-HexaCB-(152)	ng/L	0.021 U (1)	0.021	0.095				3495980
HexaCB-(153)+(168)	ng/L	24.8	0.0050	0.19				3495980
22'44'56'-HexaCB-(154)	ng/L	0.187	0.0019	0.095				3495980

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'44'66'-HexaCB-(155)	ng/L	0.0024 U	0.0024	0.095				3495980
HexaCB-(156)+(157)	ng/L	4.34	0.012	0.19	0.0000300	0.000130		3495980
233'44'6-HexaCB-(158)	ng/L	3.95	0.0049	0.095				3495980
233'455'-HexaCB-(159)	ng/L	0.245	0.013	0.095				3495980
233'456-HexaCB-(160)	ng/L	0.0056 U	0.0056	0.095				3495980
233'45'6-HexaCB-(161)	ng/L	0.0048 U	0.0048	0.095				3495980
233'4'55'-HexaCB-(162)	ng/L	0.107	0.013	0.095				3495980
233'4'5'6-HexaCB-(164)	ng/L	2.81	0.0055	0.095				3495980
233'55'6-HexaCB-(165)	ng/L	0.0053 U	0.0053	0.095				3495980
23'44'55'-HexaCB-(167)	ng/L	1.33	0.013	0.095	0.0000300	0.0000399		3495980
33'44'55'-HexaCB-(169)	ng/L	0.013 U	0.013	0.095	0.0300	0.000390		3495980
22'33'44'5-HeptaCB-(170)	ng/L	6.25	0.0024	0.095				3495980
HeptaCB-(171)+(173)	ng/L	1.97	0.0032	0.19				3495980
22'33'455'-HeptaCB-(172)	ng/L	1.03	0.0032	0.095				3495980
22'33'456'-HeptaCB-(174)	ng/L	6.49	0.0030	0.095				3495980
22'33'45'6-HeptaCB-(175)	ng/L	0.242	0.0027	0.095				3495980
22'33'466'-HeptaCB-(176)	ng/L	0.678	0.0020	0.095				3495980
22'33'45'6'-HeptaCB-(177)	ng/L	3.72	0.0033	0.095				3495980
22'33'55'6-HeptaCB-(178)	ng/L	1.01	0.0029	0.095				3495980
22'33'566'-HeptaCB-(179)	ng/L	2.06	0.0020	0.095				3495980
HeptaCB-(180)+(193)	ng/L	15.1	0.0025	0.19				3495980
22'344'56-HeptaCB-(181)	ng/L	0.0675 J	0.0030	0.095				3495980
22'344'56'-HeptaCB-(182)	ng/L	0.024 U (1)	0.024	0.095				3495980
22'344'5'6-HeptaCB-(183)	ng/L	3.63	0.0025	0.095				3495980
22'344'66'-HeptaCB-(184)	ng/L	0.0042 U (1)	0.0042	0.095				3495980
22'3455'6-HeptaCB-(185)	ng/L	0.0034 U	0.0034	0.095				3495980
22'34566'-HeptaCB-(186)	ng/L	0.0021 U	0.0021	0.095				3495980
22'34'55'6-HeptaCB-(187)	ng/L	6.60	0.0026	0.095				3495980
22'34'566'-HeptaCB-(188)	ng/L	0.0074 U (1)	0.0074	0.095				3495980

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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'44'55'-HeptaCB-(189)	ng/L	0.284	0.015	0.095	0.0000300	0.00000852		3495980
233'44'56-HeptaCB-(190)	ng/L	1.23	0.0026	0.095				3495980
233'44'5'6-HeptaCB-(191)	ng/L	0.235	0.0024	0.095				3495980
233'455'6-HeptaCB-(192)	ng/L	0.0026 U	0.0026	0.095				3495980
22'33'44'55'-OctaCB-(194)	ng/L	3.07	0.0081	0.095				3495980
22'33'44'56-OctaCB-(195)	ng/L	1.08	0.0086	0.095				3495980
22'33'44'56'-OctaCB-(196)	ng/L	1.66	0.0065	0.095				3495980
22'33'44'66'OctaCB-(197)	ng/L	0.0747 J	0.0038	0.095				3495980
OctaCB-(198)+(199)	ng/L	3.77	0.0064	0.19				3495980
22'33'4566'-OctaCB-(200)	ng/L	0.444	0.0053	0.095				3495980
22'33'45'66'-OctaCB-(201)	ng/L	0.383	0.0044	0.095				3495980
22'33'55'66'-OctaCB-(202)	ng/L	0.666	0.0063	0.095				3495980
22'344'55'6-OctaCB-(203)	ng/L	2.34	0.0061	0.095				3495980
22'344'566'-OctaCB-(204)	ng/L	0.0045 U	0.0045	0.095				3495980
233'44'55'6-OctaCB-(205)	ng/L	0.153	0.0059	0.095				3495980
22'33'44'55'6-NonaCB-(206)	ng/L	2.10	0.0060	0.095				3495980
22'33'44'566'-NonaCB-(207)	ng/L	0.228	0.0047	0.095				3495980
22'33'455'66'-NonaCB-(208)	ng/L	0.514	0.0054	0.095				3495980
DecaCB-(209)	ng/L	0.964	0.0082	0.095				3495980
Monochlorobiphenyl	ng/L	0.215	0.0018	N/A				3495980
Dichlorobiphenyl	ng/L	16.6	0.031	N/A				3495980
Trichlorobiphenyl	ng/L	160	0.012	N/A				3495980
Tetrachlorobiphenyl	ng/L	262	0.0067	N/A				3495980
Pentachlorobiphenyl	ng/L	197	0.0089	N/A				3495980
Hexachlorobiphenyl	ng/L	151	0.013	N/A				3495980
Heptachlorobiphenyl	ng/L	50.6	0.015	N/A				3495980
Octachlorobiphenyl	ng/L	13.6	0.0087	N/A				3495980
Nonachlorobiphenyl	ng/L	2.84	0.0060	N/A				3495980
Decachlorobiphenyl	ng/L	0.964	0.0082	N/A				3495980

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	**B18-SP1-20140107**	**EDL**	**RDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
Total PCB	ng/L	854	N/A	N/A				3495980
TOTAL TOXIC EQUIVALENCY	ng/L					0.0130		
Surrogate Recovery (%)								
C13-2,44'-TriCB-(28)	%	102						3495980
C13-22'33'44'55'6-NonaCB-(206)	%	120						3495980
C13-22'33'44'5-HeptaCB-(170)	%	112						3495980
C13-22'33'455'66'-NonaCB-(208)	%	134						3495980
C13-22'33'55'66'-OctaCB-(202)	%	126						3495980
C13-22'33'55'6-HeptaCB-(178)	%	118						3495980
C13-22'344'55'-HeptaCB-(180)	%	117						3495980
C13-22'34'566'-HeptaCB-(188)	%	108						3495980
C13-22'44'66'-HexaCB-(155)	%	110						3495980
C13-22'466'-PentaCB-(104)	%	120						3495980
C13-22'66'-TetraCB-(54)	%	100						3495980
C13-22'6-TriCB-(19)	%	103						3495980
C13-22'-DiCB-(4)	%	82						3495980
C13-233'44'55'6-OctaCB-(205)	%	100						3495980
C13-233'44'55'-HeptaCB-(189)	%	99						3495980
C13-233'44'-PentaCB-(105)	%	113						3495980
C13-233'55'-PentaCB-(111)	%	113						3495980
C13-23'44'55'-HexaCB-(167)	%	98						3495980
C13-2344'5-PentaCB-(114)	%	109						3495980
C13-23'44'5-PentaCB-(118)	%	113						3495980
C13-2'344'5-PentaCB-(123)	%	112						3495980
C13-2-MonoCB-(1)	%	61						3495980
C13-33'44'55'-HexaCB-(169)	%	32						3495980
C13-33'44'5-PentaCB-(126)	%	91						3495980
C13-33'44'-TetraCB-(77)	%	103						3495980
C13-344'5-TetraCB-(81)	%	105						3495980

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8685						
Sampling Date		2014/01/07 15:45						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B18-SP1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-344'-TriCB-(37)	%	99						3495980
C13-44'-DiCB-(15)	%	101						3495980
C13-4-MonoCB-(3)	%	67						3495980
C13-DecaCB-(209)	%	88						3495980
C13-HexaCB-(156)+(157)	%	98						3495980

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.202	0.00087	0.095				3495980
3-MonoCB-(2)	ng/L	0.0307 J	0.00073	0.095				3495980
4-MonoCB-(3)	ng/L	0.166	0.00082	0.095				3495980
22'-DiCB-(4)	ng/L	5.60	0.015	0.095				3495980
2,3-DiCB-(5)	ng/L	0.16 U (1)	0.16	0.095				3495980
2,3'-DiCB-(6)	ng/L	2.37	0.022	0.095				3495980
2,4-DiCB-(7)	ng/L	0.354	0.022	0.095				3495980
2,4'-DiCB-(8)	ng/L	11.6	0.022	0.095				3495980
2,5-DiCB-(9)	ng/L	0.576	0.022	0.095				3495980
2,6-DiCB-(10)	ng/L	0.303	0.010	0.095				3495980
3,3'-DiCB-(11)	ng/L	0.758	0.023	0.095				3495980
DiCB-(12)+(13)	ng/L	1.45	0.023	0.19				3495980
3,5-DiCB-(14)	ng/L	0.022 U	0.022	0.095				3495980
4,4'-DiCB-(15)	ng/L	25.8	0.037	0.095				3495980
22'3-TriCB-(16)	ng/L	26.6	0.011	0.095				3495980
22'4-TriCB-(17)	ng/L	20.0	0.0088	0.095				3495980
TriCB-(18)+(30)	ng/L	41.7	0.0070	0.19				3495980
22'6-TriCB-(19)	ng/L	7.04	0.0089	0.095				3495980
TriCB-(20) + (28)	ng/L	79.6	0.0040	0.19				3495980
TriCB-(21)+(33)	ng/L	38.0	0.0042	0.19				3495980
234'-TriCB-(22)	ng/L	27.7	0.0043	0.095				3495980
235-TriCB-(23)	ng/L	0.0533 J	0.0043	0.095				3495980
236-TriCB-(24)	ng/L	0.0062 U	0.0062	0.095				3495980
23'4-TriCB-(25)	ng/L	6.03	0.0042	0.095				3495980
TriCB-(26)+(29)	ng/L	13.4	0.0042	0.19				3495980
23'6-TriCB-(27)	ng/L	5.02	0.0059	0.095				3495980
24'5-TriCB-(31)	ng/L	56.9	0.0039	0.095				3495980
24'6-TriCB-(32)	ng/L	18.5	0.0055	0.095				3495980
23'5'-TriCB-(34)	ng/L	0.179	0.0042	0.095				3495980

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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'4-TriCB-(35)	ng/L	1.51	0.0044	0.095				3495980
33'5-TriCB-(36)	ng/L	0.0039 U	0.0039	0.095				3495980
344'-TriCB-(37)	ng/L	27.3	0.0052	0.095				3495980
345-TriCB-(38)	ng/L	0.0537 J	0.0043	0.095				3495980
34'5-TriCB-(39)	ng/L	0.376	0.0040	0.095				3495980
TetraCB-(40)+(41)+(71)	ng/L	55.5	0.0013	0.29				3495980
22'34'-TetraCB-(42)	ng/L	34.2	0.0017	0.095				3495980
22'35-TetraCB-(43)	ng/L	4.67	0.0019	0.095				3495980
TetraCB-(44)+(47)+(65)	ng/L	104	0.0013	0.29				3495980
TetraCB-(45)+(51)	ng/L	19.3	0.0013	0.19				3495980
22'36'-TetraCB-(46)	ng/L	7.37	0.0016	0.095				3495980
22'45-TetraCB-(48)	ng/L	17.7	0.0013	0.095				3495980
TetraCB-(49)+TetraCB-(69)	ng/L	55.7	0.0012	0.19				3495980
TetraCB-(50)+(53)	ng/L	13.3	0.0013	0.19				3495980
22'55'-TetraCB-(52)	ng/L	112	0.0013	0.095				3495980
22'66'-TetraCB-(54)	ng/L	0.202	0.0018	0.095				3495980
233'4-TetraCB-(55)	ng/L	0.503	0.015	0.095				3495980
233'4'-Tetra CB(56)	ng/L	24.7	0.016	0.095				3495980
233'5-TetraCB-(57)	ng/L	0.014 U	0.014	0.095				3495980
233'5'-TetraCB-(58)	ng/L	0.014 U	0.014	0.095				3495980
TetraCB-(59)+(62)+(75)	ng/L	9.08	0.00098	0.29				3495980
2344'-TetraCB -(60)	ng/L	10.4	0.015	0.095				3495980
TetraCB-(61)+(70)+(74)+(76)	ng/L	97.2	0.015	0.38				3495980
234'5-TetraCB-(63)	ng/L	1.66	0.014	0.095				3495980
234'6-TetraCB-(64)	ng/L	42.8	0.0011	0.095				3495980
23'44'-TetraCB-(66)	ng/L	47.9	0.014	0.095				3495980
23'45-TetraCB-(67)	ng/L	1.92	0.014	0.095				3495980
23'45'-TetraCB-(68)	ng/L	0.174	0.013	0.095				3495980
23'55'-TetraCB-(72)	ng/L	0.357	0.013	0.095				3495980

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'5'6-TetraCB-(73)	ng/L	0.00089 U	0.00089	0.095				3495980
33'44'-TetraCB-(77)	ng/L	6.15	0.016	0.095	0.000100	0.000615		3495980
33'45-TetraCB-(78)	ng/L	0.015 U	0.015	0.095				3495980
33'45'-TetraCB(79)	ng/L	0.802	0.013	0.095				3495980
33'55'-TetraCB-(80)	ng/L	0.013 U	0.013	0.095				3495980
344'5-TetraCB-(81)	ng/L	0.182	0.016	0.095	0.000300	0.0000546		3495980
22'33'4-PentaCB-(82)	ng/L	16.0	0.013	0.095				3495980
PentaCB-(83)+(99)	ng/L	54.1	0.011	0.19				3495980
22'33'6-PentaCB-(84)	ng/L	34.2	0.013	0.095				3495980
PentaCB-(85)+(116)+(117)	ng/L	17.8	0.0096	0.29				3495980
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	83.6	0.0097	0.57				3495980
PentaCB-(88)+(91)	ng/L	14.4	0.011	0.19				3495980
22'346'-PentaCB-(89)	ng/L	1.20	0.012	0.095				3495980
PentaCB-(90)+(101)+(113)	ng/L	107	0.0096	0.29				3495980
22'355'-PentaCB-(92)	ng/L	19.1	0.011	0.095				3495980
PentaCB-(93)+(98)+(100)+(102)	ng/L	4.29	0.011	0.38				3495980
22'356'-PentaCB-(94)	ng/L	0.512	0.011	0.095				3495980
22'35'6-PentaCB-(95)	ng/L	82.5	0.010	0.095				3495980
22'366'-PentaCB-(96)	ng/L	0.825	0.0061	0.095				3495980
22'45'6-PentaCB-(103)	ng/L	0.448	0.0098	0.095				3495980
22'466'-PentaCB-(104)	ng/L	0.0086 U	0.0086	0.095				3495980
233'44'-PentaCB-(105)	ng/L	49.5	0.0041	0.095	0.0000300	0.00149		3495980
233'45-PentaCB-(106)	ng/L	0.0039 U	0.0039	0.095				3495980
233'4'5-PentaCB-(107)	ng/L	7.29	0.0037	0.095				3495980
PentaCB-(108)+(124)	ng/L	4.60	0.0038	0.19				3495980
PentaCB-(110)+(115)	ng/L	154	0.0093	0.19				3495980
233'55'-PentaCB-(111)	ng/L	0.0081 U	0.0081	0.095				3495980
233'56-PentaCB-(112)	ng/L	0.0091 U	0.0091	0.095				3495980
2344'5-PentaCB-(114)	ng/L	2.32	0.0041	0.095	0.0000300	0.0000696		3495980

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'44'5-PentaCB-(118)	ng/L	115	0.0041	0.095	0.0000300	0.00345		3495980
23'455'-PentaCB-(120)	ng/L	0.066 U (1)	0.066	0.095				3495980
23'45'6-PentaCB-(121)	ng/L	0.0081 U	0.0081	0.095				3495980
233'4'5'-PentaCB-(122)	ng/L	1.42	0.0042	0.095				3495980
23'44'5'-PentaCB-(123)	ng/L	1.44	0.0045	0.095	0.0000300	0.0000432		3495980
33'44'5-PentaCB-(126)	ng/L	0.208	0.0040	0.095	0.100	0.0208		3495980
33'455'-PentaCB-(127)	ng/L	0.170	0.0039	0.095				3495980
HexaCB-(128)+(166)	ng/L	28.9	0.0070	0.19				3495980
HexaCB-(129)+(138)+(163)	ng/L	168	0.0077	0.29				3495980
22'33'45'-HexaCB-(130)	ng/L	10.4	0.0091	0.095				3495980
22'33'46-HexaCB-(131)	ng/L	2.47	0.0093	0.095				3495980
22'33'46'-HexaCB-(132)	ng/L	53.8	0.0083	0.095				3495980
22'33'55'-HexaCB-(133)	ng/L	1.43	0.0080	0.095				3495980
HexaCB-(134)+(143)	ng/L	7.65	0.0089	0.19				3495980
HexaCB-(135)+(151)	ng/L	32.7	0.0014	0.19				3495980
22'33'66'-HexaCB-(136)	ng/L	14.1	0.0010	0.095				3495980
22'344'5-HexaCB-(137)	ng/L	9.00	0.0076	0.095				3495980
HexaCB-(139)+(140)	ng/L	2.48	0.0073	0.19				3495980
22'3455'-HexaCB-(141)	ng/L	28.1	0.0085	0.095				3495980
22'3456-HexaCB-(142)	ng/L	0.0085 U	0.0085	0.095				3495980
22'345'6-HexaCB-(144)	ng/L	5.20	0.0014	0.095				3495980
22'3466'-HexaCB-(145)	ng/L	0.0446 J	0.0011	0.095				3495980
22'34'55'-HexaCB-(146)	ng/L	16.9	0.0074	0.095				3495980
HexaCB-(147)+(149)	ng/L	91.8	0.0072	0.19				3495980
22'34'56'-HexaCB-(148)	ng/L	0.0566 J	0.0014	0.095				3495980
22'34'66'-HexaCB-(150)	ng/L	0.0921 J	0.00096	0.095				3495980
22'3566'-HexaCB-(152)	ng/L	0.092 U (1)	0.092	0.095				3495980
HexaCB-(153)+(168)	ng/L	95.6	0.0060	0.19				3495980
22'44'56'-HexaCB-(154)	ng/L	0.717	0.0013	0.095				3495980

RDL = Reportable Detection Limit
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The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.
WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds
(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'44'66'-HexaCB-(155)	ng/L	0.0016 U	0.0016	0.095				3495980
HexaCB-(156)+(157)	ng/L	20.0	0.0037	0.19	0.0000300	0.000600		3495980
233'44'6-HexaCB-(158)	ng/L	17.6	0.0059	0.095				3495980
233'455'-HexaCB-(159)	ng/L	0.905	0.0041	0.095				3495980
233'456-HexaCB-(160)	ng/L	0.0066 U	0.0066	0.095				3495980
233'45'6-HexaCB-(161)	ng/L	0.0058 U	0.0058	0.095				3495980
233'4'55'-HexaCB-(162)	ng/L	0.541	0.0039	0.095				3495980
233'4'5'6-HexaCB-(164)	ng/L	11.0	0.0066	0.095				3495980
233'55'6-HexaCB-(165)	ng/L	0.0063 U	0.0063	0.095				3495980
23'44'55'-HexaCB-(167)	ng/L	6.15	0.0039	0.095	0.0000300	0.000185		3495980
33'44'55'-HexaCB-(169)	ng/L	0.0040 U	0.0040	0.095	0.0300	0.000120		3495980
22'33'44'5-HeptaCB-(170)	ng/L	19.4	0.0051	0.095				3495980
HeptaCB-(171)+(173)	ng/L	6.29	0.0067	0.19				3495980
22'33'455'-HeptaCB-(172)	ng/L	3.46	0.0067	0.095				3495980
22'33'456'-HeptaCB-(174)	ng/L	0.0062 U	0.0062	0.095				3495980
22'33'45'6-HeptaCB-(175)	ng/L	0.915	0.0029	0.095				3495980
22'33'466'-HeptaCB-(176)	ng/L	2.37	0.0022	0.095				3495980
22'33'45'6'-HeptaCB-(177)	ng/L	11.9	0.0069	0.095				3495980
22'33'55'6-HeptaCB-(178)	ng/L	4.13	0.0030	0.095				3495980
22'33'566'-HeptaCB-(179)	ng/L	8.65	0.0021	0.095				3495980
HeptaCB-(180)+(193)	ng/L	57.4	0.0051	0.19				3495980
22'344'56-HeptaCB-(181)	ng/L	0.288	0.0063	0.095				3495980
22'344'56'-HeptaCB-(182)	ng/L	0.0981	0.0029	0.095				3495980
22'344'5'6-HeptaCB-(183)	ng/L	14.4	0.0052	0.095				3495980
22'344'66'-HeptaCB-(184)	ng/L	0.0232 J	0.0020	0.095				3495980
22'3455'6-HeptaCB-(185)	ng/L	26.2	0.0071	0.095				3495980
22'34566'-HeptaCB-(186)	ng/L	0.0022 U	0.0022	0.095				3495980
22'34'55'6-HeptaCB-(187)	ng/L	33.6	0.0027	0.095				3495980
22'34'566'-HeptaCB-(188)	ng/L	0.0738 J	0.0034	0.095				3495980

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'44'55'-HeptaCB-(189)	ng/L	0.860	0.0054	0.095	0.0000300	0.0000258		3495980
233'44'56-HeptaCB-(190)	ng/L	3.96	0.0055	0.095				3495980
233'44'5'6-HeptaCB-(191)	ng/L	0.691	0.0050	0.095				3495980
233'455'6-HeptaCB-(192)	ng/L	0.10 U (1)	0.10	0.095				3495980
22'33'44'55'-OctaCB-(194)	ng/L	26.2	0.0051	0.095				3495980
22'33'44'56-OctaCB-(195)	ng/L	5.24	0.0054	0.095				3495980
22'33'44'56'-OctaCB-(196)	ng/L	13.3	0.0047	0.095				3495980
22'33'44'66'OctaCB-(197)	ng/L	0.525	0.0028	0.095				3495980
OctaCB-(198)+(199)	ng/L	44.3	0.0046	0.19				3495980
22'33'4566'-OctaCB-(200)	ng/L	4.02	0.0038	0.095				3495980
22'33'45'66'-OctaCB-(201)	ng/L	4.09	0.0032	0.095				3495980
22'33'55'66'-OctaCB-(202)	ng/L	9.89	0.0045	0.095				3495980
22'344'55'6-OctaCB-(203)	ng/L	29.6	0.0044	0.095				3495980
22'344'566'-OctaCB-(204)	ng/L	0.026 U (1)	0.026	0.095				3495980
233'44'55'6-OctaCB-(205)	ng/L	0.713	0.0037	0.095				3495980
22'33'44'55'6-NonaCB-(206)	ng/L	44.1	0.0084	0.095				3495980
22'33'44'566'-NonaCB-(207)	ng/L	4.01	0.0066	0.095				3495980
22'33'455'66'-NonaCB-(208)	ng/L	9.78	0.0077	0.095				3495980
DecaCB-(209)	ng/L	5.56	0.0082	0.095				3495980
Monochlorobiphenyl	ng/L	0.399	0.00087	N/A				3495980
Dichlorobiphenyl	ng/L	48.8	0.037	N/A				3495980
Trichlorobiphenyl	ng/L	370	0.011	N/A				3495980
Tetrachlorobiphenyl	ng/L	668	0.016	N/A				3495980
Pentachlorobiphenyl	ng/L	772	0.013	N/A				3495980
Hexachlorobiphenyl	ng/L	626	0.0093	N/A				3495980
Heptachlorobiphenyl	ng/L	195	0.0071	N/A				3495980
Octachlorobiphenyl	ng/L	138	0.0054	N/A				3495980
Nonachlorobiphenyl	ng/L	57.8	0.0084	N/A				3495980
Decachlorobiphenyl	ng/L	5.56	0.0082	N/A				3495980

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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	**B19-SP-19-1-20140107**	**EDL**	**RDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
Total PCB	ng/L	2880	N/A	N/A				3495980
TOTAL TOXIC EQUIVALENCY	ng/L					0.0275		
Surrogate Recovery (%)								
C13-2,44'-TriCB-(28)	%	104						3495980
C13-22'33'44'55'6-NonaCB-(206)	%	115						3495980
C13-22'33'44'5-HeptaCB-(170)	%	108						3495980
C13-22'33'455'66'-NonaCB-(208)	%	125						3495980
C13-22'33'55'66'-OctaCB-(202)	%	120						3495980
C13-22'33'55'6-HeptaCB-(178)	%	110						3495980
C13-22'344'55'-HeptaCB-(180)	%	112						3495980
C13-22'34'566'-HeptaCB-(188)	%	103						3495980
C13-22'44'66'-HexaCB-(155)	%	105						3495980
C13-22'466'-PentaCB-(104)	%	117						3495980
C13-22'66'-TetraCB-(54)	%	98						3495980
C13-22'6-TriCB-(19)	%	97						3495980
C13-22'-DiCB-(4)	%	83						3495980
C13-233'44'55'6-OctaCB-(205)	%	99						3495980
C13-233'44'55'-HeptaCB-(189)	%	94						3495980
C13-233'44'-PentaCB-(105)	%	113						3495980
C13-233'55'-PentaCB-(111)	%	111						3495980
C13-23'44'55'-HexaCB-(167)	%	94						3495980
C13-2344'5-PentaCB-(114)	%	108						3495980
C13-23'44'5-PentaCB-(118)	%	113						3495980
C13-2'344'5-PentaCB-(123)	%	112						3495980
C13-2-MonoCB-(1)	%	66						3495980
C13-33'44'55'-HexaCB-(169)	%	31						3495980
C13-33'44'5-PentaCB-(126)	%	90						3495980
C13-33'44'-TetraCB-(77)	%	105						3495980
C13-344'5-TetraCB-(81)	%	106						3495980

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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
Client Project #: A4A0131

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		UM8686						
Sampling Date		2014/01/07 15:00						
COC Number		na			TOXIC EQUIVALENCY		# of	
	Units	B19-SP-19-1-20140107	EDL	RDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-344'-TriCB-(37)	%	99						3495980
C13-44'-DiCB-(15)	%	102						3495980
C13-4-MonoCB-(3)	%	67						3495980
C13-DecaCB-(209)	%	88						3495980
C13-HexaCB-(156)+(157)	%	95						3495980

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QC Batch = Quality Control Batch
TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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Maxxam Job #: B403971
Report Date: 2014/01/30

Apex Laboratories
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Package 1	3.5°C
Package 2	3.5°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Results relate only to the items tested.

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Apex Laboratories
Attention: Philip Nerenberg
Client Project #: A4A0131
P.O. #:
Site Location:

Quality Assurance Report

Maxxam Job Number: GB403971

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3482485	KKS	Spiked Blank	C13-1234678 HeptaCDD	2014/01/17		88	%	40 - 135
			C13-1234678 HeptaCDF	2014/01/17		90	%	40 - 135
			C13-123478 HexaCDF	2014/01/17		85	%	40 - 135
			C13-123678 HexaCDD	2014/01/17		91	%	40 - 135
			C13-12378 PentaCDD	2014/01/17		56	%	40 - 135
			C13-12378 PentaCDF	2014/01/17		50	%	40 - 135
			C13-2378 TetraCDD	2014/01/17		71	%	40 - 135
			C13-2378 TetraCDF	2014/01/17		60	%	40 - 135
			C13-OCDD	2014/01/17		94	%	40 - 135
			2,3,7,8-Tetra CDD	2014/01/17		90	%	80 - 140
			1,2,3,7,8-Penta CDD	2014/01/17		106	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2014/01/17		101	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2014/01/17		90	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2014/01/17		106	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2014/01/17		93	%	80 - 140
			Octa CDD	2014/01/17		89	%	80 - 140
			2,3,7,8-Tetra CDF	2014/01/17		87	%	80 - 140
			1,2,3,7,8-Penta CDF	2014/01/17		95	%	80 - 140
			2,3,4,7,8-Penta CDF	2014/01/17		108	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2014/01/17		93	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2014/01/17		89	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2014/01/17		94	%	80 - 140
			1,2,3,7,8,9-Hexa CDF	2014/01/17		105	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2014/01/17		90	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2014/01/17		91	%	80 - 140
			Octa CDF	2014/01/17		80	%	80 - 140
		Method Blank	C13-1234678 HeptaCDD	2014/01/17		82	%	40 - 135
			C13-1234678 HeptaCDF	2014/01/17		81	%	40 - 135
			C13-123478 HexaCDF	2014/01/17		75	%	40 - 135
			C13-123678 HexaCDD	2014/01/17		84	%	40 - 135
			C13-12378 PentaCDD	2014/01/17		57	%	40 - 135
			C13-12378 PentaCDF	2014/01/17		49	%	40 - 135
			C13-2378 TetraCDD	2014/01/17		64	%	40 - 135
			C13-2378 TetraCDF	2014/01/17		52	%	40 - 135
			C13-OCDD	2014/01/17		91	%	40 - 135
			2,3,7,8-Tetra CDD	2014/01/17	0.93 U, EDL=0.93		pg/L	
			1,2,3,7,8-Penta CDD	2014/01/17	0.91 U, EDL=0.91		pg/L	
			1,2,3,4,7,8-Hexa CDD	2014/01/17	1.1 U, EDL=1.1		pg/L	
			1,2,3,6,7,8-Hexa CDD	2014/01/17	1.0 U, EDL=1.0		pg/L	
			1,2,3,7,8,9-Hexa CDD	2014/01/17	0.99 U, EDL=0.99		pg/L	
			1,2,3,4,6,7,8-Hepta CDD	2014/01/17	1.3 J, EDL=1.0		pg/L	
			Octa CDD	2014/01/17	2.4 J, EDL=1.2		pg/L	
			Total Tetra CDD	2014/01/17	0.93 U, EDL=0.93		pg/L	
			Total Penta CDD	2014/01/17	0.91 U, EDL=0.91		pg/L	
			Total Hexa CDD	2014/01/17	1.0 U, EDL=1.0		pg/L	
			Total Hepta CDD	2014/01/17	1.3 J, EDL=1.0		pg/L	
			2,3,7,8-Tetra CDF	2014/01/17	0.73 U, EDL=0.73		pg/L	
			1,2,3,7,8-Penta CDF	2014/01/17	0.89 U, EDL=0.89		pg/L	
			2,3,4,7,8-Penta CDF	2014/01/17	0.90 U, EDL=0.90		pg/L	
			1,2,3,4,7,8-Hexa CDF	2014/01/17	0.99 U, EDL=0.99		pg/L	
			1,2,3,6,7,8-Hexa CDF	2014/01/17	0.97 U, EDL=0.97		pg/L	
			2,3,4,6,7,8-Hexa CDF	2014/01/17	1.1 U, EDL=1.1		pg/L	
			1,2,3,7,8,9-Hexa CDF	2014/01/17	1.2 U, EDL=1.2		pg/L	
			1,2,3,4,6,7,8-Hepta CDF	2014/01/17	0.89 U, EDL=0.89		pg/L	
			1,2,3,4,7,8,9-Hepta CDF	2014/01/17	1.1 U, EDL=1.1		pg/L	

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Apex Laboratories
Attention: Philip Nerenberg
Client Project #: A4A0131
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB403971

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3482485	KKS	Method Blank	Octa CDF	2014/01/17	1.7 J, EDL=1.2		pg/L	
			Total Tetra CDF	2014/01/17	0.73 U, EDL=0.73		pg/L	
			Total Penta CDF	2014/01/17	0.89 U, EDL=0.89		pg/L	
			Total Hexa CDF	2014/01/17	1.1 U, EDL=1.1		pg/L	
			Total Hepta CDF	2014/01/17	1.0 U, EDL=1.0		pg/L	
3486957	KKS	Method Blank	Confirmation C13-2378 TetraCDF	2014/01/17		61	%	40 - 135
			Confirmation 2,3,7,8-Tetra CDF	2014/01/17	0.48 U, EDL=0.48		pg/L	
3495980	BY	Spiked Blank	C13-2,44'-TriCB-(28)	2014/01/28		79	%	40 - 125
			C13-22'33'44'55'6-NonaCB-(206)	2014/01/28		120	%	30 - 140
			C13-22'33'44'5-HeptaCB-(170)	2014/01/28		100	%	30 - 140
			C13-22'33'455'66'-NonaCB-(208)	2014/01/28		125	%	30 - 140
			C13-22'33'55'66'-OctaCB-(202)	2014/01/28		113	%	30 - 140
			C13-22'33'55'6-HeptaCB-(178)	2014/01/28		121	%	40 - 125
			C13-22'344'55'-HeptaCB-(180)	2014/01/28		102	%	30 - 140
			C13-22'34'566'-HeptaCB-(188)	2014/01/28		107	%	30 - 140
			C13-22'44'66'-HexaCB-(155)	2014/01/28		100	%	30 - 140
			C13-22'466'-PentaCB-(104)	2014/01/28		101	%	30 - 140
			C13-22'66'-TetraCB-(54)	2014/01/28		69	%	30 - 140
			C13-22'6-TriCB-(19)	2014/01/28		67	%	30 - 140
			C13-22'-DiCB-(4)	2014/01/28		48	%	30 - 140
			C13-233'44'55'6-OctaCB-(205)	2014/01/28		101	%	30 - 140
			C13-233'44'55'-HeptaCB-(189)	2014/01/28		91	%	30 - 140
			C13-233'44'-PentaCB-(105)	2014/01/28		107	%	30 - 140
			C13-233'55'-PentaCB-(111)	2014/01/28		108	%	40 - 125
			C13-23'44'55'-HexaCB-(167)	2014/01/28		95	%	30 - 140
			C13-2344'5-PentaCB-(114)	2014/01/28		104	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2014/01/28		104	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2014/01/28		106	%	30 - 140
			C13-2-MonoCB-(1)	2014/01/28		35	%	15 - 140
			C13-33'44'55'-HexaCB-(169)	2014/01/28		38	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2014/01/28		93	%	30 - 140
			C13-33'44'-TetraCB-(77)	2014/01/28		93	%	30 - 140
			C13-344'5-TetraCB-(81)	2014/01/28		91	%	30 - 140
			C13-344'-TriCB-(37)	2014/01/28		76	%	30 - 140
			C13-44'-DiCB-(15)	2014/01/28		74	%	30 - 140
			C13-4-MonoCB-(3)	2014/01/28		39	%	15 - 140
			C13-DecaCB-(209)	2014/01/28		106	%	30 - 140
			C13-HexaCB-(156)+(157)	2014/01/28		96	%	30 - 140
			2-MonoCB-(1)	2014/01/28		102	%	50 - 150
			4-MonoCB-(3)	2014/01/28		100	%	50 - 150
			22'-DiCB-(4)	2014/01/28		94	%	50 - 150
			4,4'-DiCB-(15)	2014/01/28		98	%	50 - 150
			22'6-TriCB-(19)	2014/01/28		95	%	50 - 150
			235-TriCB-(23)	2014/01/28		91	%	50 - 150
			23'5'-TriCB-(34)	2014/01/28		87	%	50 - 150
			344'-TriCB-(37)	2014/01/28		100	%	50 - 150
			22'66'-TetraCB-(54)	2014/01/28		101	%	50 - 150
			33'44'-TetraCB-(77)	2014/01/28		97	%	50 - 150
			344'5-TetraCB-(81)	2014/01/28		97	%	50 - 150
			22'466'-PentaCB-(104)	2014/01/28		94	%	50 - 150
			233'44'-PentaCB-(105)	2014/01/28		93	%	50 - 150
			2344'5-PentaCB-(114)	2014/01/28		94	%	50 - 150
			23'44'5-PentaCB-(118)	2014/01/28		95	%	50 - 150
			23'44'5'-PentaCB-(123)	2014/01/28		95	%	50 - 150
			33'44'5-PentaCB-(126)	2014/01/28		91	%	50 - 150

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Apex Laboratories
Attention: Philip Nerenberg
Client Project #: A4A0131
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Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB403971

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3495980	BY	Spiked Blank	22'44'66'-HexaCB-(155)	2014/01/28		88	%	50 - 150
			HexaCB-(156)+(157)	2014/01/28		95	%	50 - 150
			23'44'55'-HexaCB-(167)	2014/01/28		95	%	50 - 150
			33'44'55'-HexaCB-(169)	2014/01/28		98	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2014/01/28		90	%	50 - 150
			HeptaCB-(180)+(193)	2014/01/28		82	%	50 - 150
			22'344'56'-HeptaCB-(182)	2014/01/28		87	%	50 - 150
			22'34'55'6-HeptaCB-(187)	2014/01/28		85	%	50 - 150
			22'34'566'-HeptaCB-(188)	2014/01/28		92	%	50 - 150
			233'44'55'-HeptaCB-(189)	2014/01/28		93	%	50 - 150
			22'33'55'66'-OctaCB-(202)	2014/01/28		92	%	50 - 150
			233'44'55'6-OctaCB-(205)	2014/01/28		93	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2014/01/28		87	%	50 - 150
			22'33'455'66'-NonaCB-(208)	2014/01/28		86	%	50 - 150
			DecaCB-(209)	2014/01/28		83	%	50 - 150
		Method Blank	C13-2,44'-TriCB-(28)	2014/01/28		64	%	40 - 125
			C13-22'33'44'55'6-NonaCB-(206)	2014/01/28		122	%	30 - 140
			C13-22'33'44'5-HeptaCB-(170)	2014/01/28		99	%	30 - 140
			C13-22'33'455'66'-NonaCB-(208)	2014/01/28		127	%	30 - 140
			C13-22'33'55'66'-OctaCB-(202)	2014/01/28		111	%	30 - 140
			C13-22'33'55'6-HeptaCB-(178)	2014/01/28		121	%	40 - 125
			C13-22'344'55'-HeptaCB-(180)	2014/01/28		101	%	30 - 140
			C13-22'34'566'-HeptaCB-(188)	2014/01/28		101	%	30 - 140
			C13-22'44'66'-HexaCB-(155)	2014/01/28		82	%	30 - 140
			C13-22'466'-PentaCB-(104)	2014/01/28		80	%	30 - 140
			C13-22'66'-TetraCB-(54)	2014/01/28		52	%	30 - 140
			C13-22'6-TriCB-(19)	2014/01/28		49	%	30 - 140
			C13-22'-DiCB-(4)	2014/01/28		32	%	30 - 140
			C13-233'44'55'6-OctaCB-(205)	2014/01/28		100	%	30 - 140
			C13-233'44'55'-HeptaCB-(189)	2014/01/28		94	%	30 - 140
			C13-233'44'-PentaCB-(105)	2014/01/28		110	%	30 - 140
			C13-233'55'-PentaCB-(111)	2014/01/28		102	%	40 - 125
			C13-23'44'55'-HexaCB-(167)	2014/01/28		95	%	30 - 140
			C13-2344'5-PentaCB-(114)	2014/01/28		103	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2014/01/28		105	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2014/01/28		102	%	30 - 140
			C13-2-MonoCB-(1)	2014/01/28		23	%	15 - 140
			C13-33'44'55'-HexaCB-(169)	2014/01/28		26 (1)	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2014/01/28		92	%	30 - 140
			C13-33'44'-TetraCB-(77)	2014/01/28		93	%	30 - 140
			C13-344'5-TetraCB-(81)	2014/01/28		91	%	30 - 140
			C13-344'-TriCB-(37)	2014/01/28		67	%	30 - 140
			C13-44'-DiCB-(15)	2014/01/28		55	%	30 - 140
			C13-4-MonoCB-(3)	2014/01/28		26	%	15 - 140
			C13-DecaCB-(209)	2014/01/28		110	%	30 - 140
			C13-HexaCB-(156)+(157)	2014/01/28		94	%	30 - 140
			2-MonoCB-(1)	2014/01/28	0.015 U, EDL=0.015		ng/L	
			3-MonoCB-(2)	2014/01/28	0.012 U, EDL=0.012		ng/L	
			4-MonoCB-(3)	2014/01/28	0.014 U, EDL=0.014		ng/L	
			22'-DiCB-(4)	2014/01/28	0.018 U, EDL=0.018		ng/L	
			2,3-DiCB-(5)	2014/01/28	0.021 U, EDL=0.021		ng/L	
			2,3'-DiCB-(6)	2014/01/28	0.020 U, EDL=0.020		ng/L	
			2,4-DiCB-(7)	2014/01/28	0.020 U, EDL=0.020		ng/L	
			2,4'-DiCB-(8)	2014/01/28	0.020 U, EDL=0.020		ng/L	
			2,5-DiCB-(9)	2014/01/28	0.020 U, EDL=0.020		ng/L	

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3495980	BY	Method Blank	2,6-DiCB-(10)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			3,3'-DiCB-(11)	2014/01/28	0.021 U,	EDL=0.021	ng/L	
			DiCB-(12)+(13)	2014/01/28	0.021 U,	EDL=0.021	ng/L	
			3,5-DiCB-(14)	2014/01/28	0.020 U,	EDL=0.020	ng/L	
			4,4'-DiCB-(15)	2014/01/28	0.033 U,	EDL=0.033	ng/L	
			22'3-TriCB-(16)	2014/01/28	0.022 U,	EDL=0.022	ng/L	
			22'4-TriCB-(17)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			TriCB-(18)+(30)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			22'6-TriCB-(19)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			TriCB-(20) + (28)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			TriCB-(21)+(33)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			234'-TriCB-(22)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			235-TriCB-(23)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			236-TriCB-(24)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			23'4-TriCB-(25)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			TriCB-(26)+(29)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			23'6-TriCB-(27)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			24'5-TriCB-(31)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			24'6-TriCB-(32)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			23'5'-TriCB-(34)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			33'4-TriCB-(35)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			33'5-TriCB-(36)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			344'-TriCB-(37)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			345-TriCB-(38)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			34'5-TriCB-(39)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			TetraCB-(40)+(41)+(71)	2014/01/28	0.018 U,	EDL=0.018	ng/L	
			22'34'-TetraCB-(42)	2014/01/28	0.023 U,	EDL=0.023	ng/L	
			22'35-TetraCB-(43)	2014/01/28	0.026 U,	EDL=0.026	ng/L	
			TetraCB-(44)+(47)+(65)	2014/01/28	0.028 J,	EDL=0.017	ng/L	
			TetraCB-(45)+(51)	2014/01/28	0.018 U,	EDL=0.018	ng/L	
			22'36'-TetraCB-(46)	2014/01/28	0.021 U,	EDL=0.021	ng/L	
			22'45-TetraCB-(48)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			TetraCB-(49)+TetraCB-(69)	2014/01/28	0.016 U,	EDL=0.016	ng/L	
			TetraCB-(50)+(53)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			22'55'-TetraCB-(52)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			22'66'-TetraCB-(54)	2014/01/28	0.0031 U,	EDL=0.0031	ng/L	
			233'4-TetraCB-(55)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			233'4'-Tetra CB(56)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			233'5-TetraCB-(57)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			233'5'-TetraCB-(58)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			TetraCB-(59)+(62)+(75)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			2344'-TetraCB -(60)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			TetraCB-(61)+(70)+(74)+(76)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			234'5-TetraCB-(63)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			234'6-TetraCB-(64)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			23'44'-TetraCB-(66)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			23'45-TetraCB-(67)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			23'45'-TetraCB-(68)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			23'55'-TetraCB-(72)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			23'5'6-TetraCB-(73)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			33'44'-TetraCB-(77)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			33'45-TetraCB-(78)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			33'45'-TetraCB(79)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			33'55'-TetraCB-(80)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			344'5-TetraCB-(81)	2014/01/28	0.015 U,	EDL=0.015	ng/L	

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QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3495980	BY	Method Blank	22'33'4-PentaCB-(82)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			PentaCB-(83)+(99)	2014/01/28	0.0092 U,	EDL=0.0092	ng/L	
			22'33'6-PentaCB-(84)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			PentaCB-(85)+(116)+(117)	2014/01/28	0.0079 U,	EDL=0.0079	ng/L	
			PentaCB-(86)(87)(97)(109)(119)(125)	2014/01/28	0.0080 U,	EDL=0.0080	ng/L	
			PentaCB-(88)+(91)	2014/01/28	0.0090 U,	EDL=0.0090	ng/L	
			22'346'-PentaCB-(89)	2014/01/28	0.0097 U,	EDL=0.0097	ng/L	
			PentaCB-(90)+(101)+(113)	2014/01/28	0.0080 U,	EDL=0.0080	ng/L	
			22'355'-PentaCB-(92)	2014/01/28	0.0093 U,	EDL=0.0093	ng/L	
			PentaCB-(93)+(98)+(100)+(102)	2014/01/28	0.0094 U,	EDL=0.0094	ng/L	
			22'356'-PentaCB-(94)	2014/01/28	0.0094 U,	EDL=0.0094	ng/L	
			22'35'6-PentaCB-(95)	2014/01/28	0.0085 U,	EDL=0.0085	ng/L	
			22'366'-PentaCB-(96)	2014/01/28	0.0017 U,	EDL=0.0017	ng/L	
			22'45'6-PentaCB-(103)	2014/01/28	0.0081 U,	EDL=0.0081	ng/L	
			22'466'-PentaCB-(104)	2014/01/28	0.0024 U,	EDL=0.0024	ng/L	
			233'44'-PentaCB-(105)	2014/01/28	0.010 U,	EDL=0.010	ng/L	
			233'45-PentaCB-(106)	2014/01/28	0.0098 U,	EDL=0.0098	ng/L	
			233'4'5-PentaCB-(107)	2014/01/28	0.0095 U,	EDL=0.0095	ng/L	
			PentaCB-(108)+(124)	2014/01/28	0.0096 U,	EDL=0.0096	ng/L	
			PentaCB-(110)+(115)	2014/01/28	0.0077 U,	EDL=0.0077	ng/L	
			233'55'-PentaCB-(111)	2014/01/28	0.0067 U,	EDL=0.0067	ng/L	
			233'56-PentaCB-(112)	2014/01/28	0.0075 U,	EDL=0.0075	ng/L	
			2344'5-PentaCB-(114)	2014/01/28	0.010 U,	EDL=0.010	ng/L	
			23'44'5-PentaCB-(118)	2014/01/28	0.010 U,	EDL=0.010	ng/L	
			23'455'-PentaCB-(120)	2014/01/28	0.0067 U,	EDL=0.0067	ng/L	
			23'45'6-PentaCB-(121)	2014/01/28	0.0067 U,	EDL=0.0067	ng/L	
			233'4'5'-PentaCB-(122)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			23'44'5'-PentaCB-(123)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			33'44'5-PentaCB-(126)	2014/01/28	0.010 U,	EDL=0.010	ng/L	
			33'455'-PentaCB-(127)	2014/01/28	0.0099 U,	EDL=0.0099	ng/L	
			HexaCB-(128)+(166)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			HexaCB-(129)+(138)+(163)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			22'33'45'-HexaCB-(130)	2014/01/28	0.018 U,	EDL=0.018	ng/L	
			22'33'46-HexaCB-(131)	2014/01/28	0.019 U,	EDL=0.019	ng/L	
			22'33'46'-HexaCB-(132)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			22'33'55'-HexaCB-(133)	2014/01/28	0.016 U,	EDL=0.016	ng/L	
			HexaCB-(134)+(143)	2014/01/28	0.018 U,	EDL=0.018	ng/L	
			HexaCB-(135)+(151)	2014/01/28	0.0037 U,	EDL=0.0037	ng/L	
			22'33'66'-HexaCB-(136)	2014/01/28	0.0028 U,	EDL=0.0028	ng/L	
			22'344'5-HexaCB-(137)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			HexaCB-(139)+(140)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			22'3455'-HexaCB-(141)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			22'3456-HexaCB-(142)	2014/01/28	0.017 U,	EDL=0.017	ng/L	
			22'345'6-HexaCB-(144)	2014/01/28	0.0038 U,	EDL=0.0038	ng/L	
			22'3466'-HexaCB-(145)	2014/01/28	0.0028 U,	EDL=0.0028	ng/L	
			22'34'55'-HexaCB-(146)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			HexaCB-(147)+(149)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			22'34'56'-HexaCB-(148)	2014/01/28	0.0037 U,	EDL=0.0037	ng/L	
			22'34'66'-HexaCB-(150)	2014/01/28	0.0025 U,	EDL=0.0025	ng/L	
			22'3566'-HexaCB-(152)	2014/01/28	0.0027 U,	EDL=0.0027	ng/L	
			HexaCB-(153)+(168)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			22'44'56'-HexaCB-(154)	2014/01/28	0.0034 U,	EDL=0.0034	ng/L	
			22'44'66'-HexaCB-(155)	2014/01/28	0.0042 U,	EDL=0.0042	ng/L	
			HexaCB-(156)+(157)	2014/01/28	0.0051 U,	EDL=0.0051	ng/L	
			233'44'6-HexaCB-(158)	2014/01/28	0.012 U,	EDL=0.012	ng/L	

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3495980	BY	Method Blank	233'455'-HexaCB-(159)	2014/01/28	0.0057 U,	EDL=0.0057	ng/L	
			233'456-HexaCB-(160)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			233'45'6-HexaCB-(161)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			233'4'55'-HexaCB-(162)	2014/01/28	0.0055 U,	EDL=0.0055	ng/L	
			233'4'5'6-HexaCB-(164)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			233'55'6-HexaCB-(165)	2014/01/28	0.013 U,	EDL=0.013	ng/L	
			23'44'55'-HexaCB-(167)	2014/01/28	0.0054 U,	EDL=0.0054	ng/L	
			33'44'55'-HexaCB-(169)	2014/01/28	0.0056 U,	EDL=0.0056	ng/L	
			22'33'44'5-HeptaCB-(170)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			HeptaCB-(171)+(173)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			22'33'455'-HeptaCB-(172)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			22'33'456'-HeptaCB-(174)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			22'33'45'6-HeptaCB-(175)	2014/01/28	0.0045 U,	EDL=0.0045	ng/L	
			22'33'466'-HeptaCB-(176)	2014/01/28	0.0033 U,	EDL=0.0033	ng/L	
			22'33'45'6'-HeptaCB-(177)	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			22'33'55'6-HeptaCB-(178)	2014/01/28	0.0047 U,	EDL=0.0047	ng/L	
			22'33'566'-HeptaCB-(179)	2014/01/28	0.0032 U,	EDL=0.0032	ng/L	
			HeptaCB-(180)+(193)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			22'344'56-HeptaCB-(181)	2014/01/28	0.014 U,	EDL=0.014	ng/L	
			22'344'56'-HeptaCB-(182)	2014/01/28	0.0045 U,	EDL=0.0045	ng/L	
			22'344'5'6-HeptaCB-(183)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			22'344'66'-HeptaCB-(184)	2014/01/28	0.0030 U,	EDL=0.0030	ng/L	
			22'3455'6-HeptaCB-(185)	2014/01/28	0.016 U,	EDL=0.016	ng/L	
			22'34566'-HeptaCB-(186)	2014/01/28	0.0034 U,	EDL=0.0034	ng/L	
			22'34'55'6-HeptaCB-(187)	2014/01/28	0.0042 U,	EDL=0.0042	ng/L	
			22'34'566'-HeptaCB-(188)	2014/01/28	0.0053 U,	EDL=0.0053	ng/L	
			233'44'55'-HeptaCB-(189)	2014/01/28	0.0065 U,	EDL=0.0065	ng/L	
			233'44'56-HeptaCB-(190)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			233'44'5'6-HeptaCB-(191)	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			233'455'6-HeptaCB-(192)	2014/01/28	0.012 U,	EDL=0.012	ng/L	
			22'33'44'55'-OctaCB-(194)	2014/01/28	0.0075 U,	EDL=0.0075	ng/L	
			22'33'44'56-OctaCB-(195)	2014/01/28	0.0080 U,	EDL=0.0080	ng/L	
			22'33'44'56'-OctaCB-(196)	2014/01/28	0.0083 U,	EDL=0.0083	ng/L	
			22'33'44'66'OctaCB-(197)	2014/01/28	0.0049 U,	EDL=0.0049	ng/L	
			OctaCB-(198)+(199)	2014/01/28	0.0082 U,	EDL=0.0082	ng/L	
			22'33'4566'-OctaCB-(200)	2014/01/28	0.0068 U,	EDL=0.0068	ng/L	
			22'33'45'66'-OctaCB-(201)	2014/01/28	0.0057 U,	EDL=0.0057	ng/L	
			22'33'55'66'-OctaCB-(202)	2014/01/28	0.0081 U,	EDL=0.0081	ng/L	
			22'344'55'6-OctaCB-(203)	2014/01/28	0.0078 U,	EDL=0.0078	ng/L	
			22'344'566'-OctaCB-(204)	2014/01/28	0.0057 U,	EDL=0.0057	ng/L	
			233'44'55'6-OctaCB-(205)	2014/01/28	0.0054 U,	EDL=0.0054	ng/L	
			22'33'44'55'6-NonaCB-(206)	2014/01/28	0.0042 U,	EDL=0.0042	ng/L	
			22'33'44'566'-NonaCB-(207)	2014/01/28	0.0033 U,	EDL=0.0033	ng/L	
			22'33'455'66'-NonaCB-(208)	2014/01/28	0.0039 U,	EDL=0.0039	ng/L	
			DecaCB-(209)	2014/01/28	0.0054 U,	EDL=0.0054	ng/L	
			Monochlorobiphenyl	2014/01/28	0.015 U,	EDL=0.015	ng/L	
			Dichlorobiphenyl	2014/01/28	0.033 U,	EDL=0.033	ng/L	
			Trichlorobiphenyl	2014/01/28	0.022 U,	EDL=0.022	ng/L	
			Tetrachlorobiphenyl	2014/01/28	0.028,	EDL=0.026	ng/L	
			Pentachlorobiphenyl	2014/01/28	0.011 U,	EDL=0.011	ng/L	
			Hexachlorobiphenyl	2014/01/28	0.019 U,	EDL=0.019	ng/L	
			Heptachlorobiphenyl	2014/01/28	0.016 U,	EDL=0.016	ng/L	
			Octachlorobiphenyl	2014/01/28	0.0083 U,	EDL=0.0083	ng/L	
			Nonachlorobiphenyl	2014/01/28	0.0042 U,	EDL=0.0042	ng/L	
			Decachlorobiphenyl	2014/01/28	0.0054 U,	EDL=0.0054	ng/L	

Apex Laboratories
Attention: Philip Nerenberg
Client Project #: A4A0131
P.O. #:
Site Location:

Quality Assurance Report (Continued)

Maxxam Job Number: GB403971

QA/QC Batch Num	Init	QC Type	Parameter	Date Analyzed yyyy/mm/dd	Value	Recovery	Units	QC Limits
3495980	BY	Method Blank	Total PCB	2014/01/28	0.0276		ng/L	

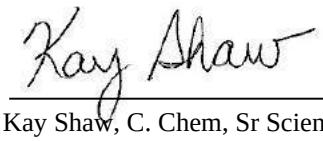
Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.
Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.
Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.
(1) Within method acceptable criteria range(25-150%).

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

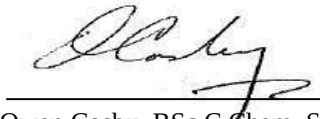
Validation Signature Page

Maxxam Job #: B403971

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).



Kay Shaw, C. Chem, Sr Scientific Specialist, HRMS Services



Owen Cosby, BSc.C.Chem, Supervisor, HRMS Services

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Analytical Resources, Incorporated
Analytical Chemists and Consultants

January 20, 2014

Philip Nerenberg
Apex Laboratories
12232 SW Garden Place
Tigard, OR 97223

Client Project: A4A0131
ARI Job No.: XU17

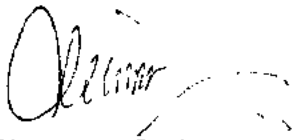
Dear Mr. Nerenberg:

Please find enclosed the original Chain of Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above.

Sample receipt information and analytical details are addressed in the Case Narrative.

An electronic copy of this report and all supporting raw data will be kept on file at ARI. Should you have any questions or concerns, please feel free to call me at your convenience.

Respectfully,
ANALYTICAL RESOURCES, INC.



Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile: XU17

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

KH 1-9-14

SUBCONTRACT ORDER

Apex Laboratories

A4A0131

XU17

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Analytical Resources, INC
4611 S. 134th Place
Tukwila, WA 98168
Phone :(206) 695-6200
Fax: (206) 695-6201

OF 22

Sample Name: B22-SP1-20140107 **Water** **Sampled: 01/07/14 13:45** (A4A0131-01)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	01/22/14 17:00	01/21/14 13:45	Krone--ARI
Containers Supplied:			
(P)1 L Amber Glass - Non Preserved			
(Q)1 L Amber Glass - Non Preserved			

OF 20, IDs say B20-20A

Sample Name: B20-SP1-20140107 **Water** **Sampled: 01/07/14 14:15** (A4A0131-02)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	01/22/14 17:00	01/21/14 14:15	Krone--ARI
Containers Supplied:			
(Q)1 L Amber Glass - Non Preserved			

MH Location

Sample Name: B18-SP1-20140107 **Water** **Sampled: 01/07/14 15:45** (A4A0131-03)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	01/22/14 17:00	01/21/14 15:45	Krone--ARI
Containers Supplied:			
(P)1 L Amber Glass - Non Preserved			
(Q)1 L Amber Glass - Non Preserved			

MH Location for B19, ID prefex reads B19-SPI

Sample Name: B19-SP-19-1-20140107 **Water** **Sampled: 01/07/14 15:00** (A4A0131-04)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	01/22/14 17:00	01/21/14 15:00	Krone--ARI
Containers Supplied:			
(P)1 L Amber Glass - Non Preserved			
(Q)1 L Amber Glass - Non Preserved			

standard TAT

1/9/14

Released By	Date	Received By	Date
UPS (Shipper)		UPS (Shipper)	
Released By	Date	Received By	Date
			1/10/14 1030

XU17 : 00002

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Apex Project Name: _____

COC No(s): _____ (NA) Delivered by: Fed-Ex (UPS) Courier Hand Delivered Other: _____

Assigned ARI Job No: XU17 Tracking No: 1ZX47202139487084? NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 1.5
Time: 1030

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90879982

Cooler Accepted by: AV Date: 1/10/14 Time: 1030

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		(YES)	NO
What kind of packing material was used?	Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other:		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		YES	(NO)
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES)	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI: (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: AV Date: 1/10/14 Time: 1207

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • •	● ● ●

Small → "sm" (< 2 mm)
Peabubbles → "pb" (2 to < 4 mm)
Large → "lg" (4 to < 6 mm)
Headspace → "hs" (> 6 mm)

Case Narrative

Client: Apex Laboratories
Project: A4A0131
ARI Job No.: XU17

Sample Receipt

Analytical Resources, Inc. (ARI) accepted four water samples January 10, 2014 under ARI job XU17. The cooler temperature measured by IR thermometer following ARI SOP was 1.5°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

The samples were analyzed for parameters as requested on the COC.

Butyltins by Krone 1988 SIM

The LCS percent recovery of Butyltin fell outside the control limits low for **LCS-011314**. All other percent recoveries were within control limits. No corrective action was taken.

There were no other irregularities with this analysis.

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: XU17
Client: Apex Labs
Project Event: A4A0131
Project Name: N/A

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	B22-SP1-20140107	XU17A	14-592	Water	01/07/14 13:45	01/10/14 10:30
2.	B20-SP1-20140107	XU17B	14-593	Water	01/07/14 14:15	01/10/14 10:30
3.	B18-SP1-20140107	XU17C	14-594	Water	01/07/14 15:45	01/10/14 10:30
4.	B19-SP-19-1-20140107	XU17D	14-595	Water	01/07/14 15:00	01/10/14 10:30

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: B22-SP1-20140107**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: XU17A
LIMS ID: 14-592
Matrix: Water
Data Release Authorized:
Reported: 01/20/14

QC Report No: XU17-Apex Labs
Project: A4A0131
Event: NA
Date Sampled: 01/07/14
Date Received: 01/10/14

Date Extracted: 01/13/14
Date Analyzed: 01/15/14 12:18
Instrument/Analyst: NT12/JLW

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	63.6%
Tripentyl Tin Chloride	75.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: B20-SP1-20140107**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: XU17B
LIMS ID: 14-593
Matrix: Water
Data Release Authorized:
Reported: 01/20/14

QC Report No: XU17-Apex Labs
Project: A4A0131
Event: NA
Date Sampled: 01/07/14
Date Received: 01/10/14

Date Extracted: 01/13/14
Date Analyzed: 01/15/14 12:32
Instrument/Analyst: NT12/JLW

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	62.8%
Tripentyl Tin Chloride	72.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: B18-SP1-20140107**
Extraction Method: SW3510C **SAMPLE**
Page 1 of 1

Lab Sample ID: XU17C
LIMS ID: 14-594
Matrix: Water
Data Release Authorized:
Reported: 01/20/14

QC Report No: XU17-Apex Labs
Project: A4A0131
Event: NA
Date Sampled: 01/07/14
Date Received: 01/10/14

Date Extracted: 01/13/14
Date Analyzed: 01/15/14 12:46
Instrument/Analyst: NT12/JLW

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	49.7%
Tripentyl Tin Chloride	56.7%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: B19-SP-19-1-20140107**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: XU17D
LIMS ID: 14-595
Matrix: Water
Data Release Authorized:
Reported: 01/20/14

QC Report No: XU17-Apex Labs
Project: A4A0131
Event: NA
Date Sampled: 01/07/14
Date Received: 01/10/14

Date Extracted: 01/13/14
Date Analyzed: 01/15/14 12:59
Instrument/Analyst: NT12/JLW

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	42.9%
Tripentyl Tin Chloride	50.6%

ANALYTICAL RESOURCES INCORPORATED

TBT SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: XU17-Apex Labs
Project: A4A0131
Event: NA

Client ID	TPRT	TPNT	TOT OUT
MB-011314	53.9%	62.0%	0
LCS-011314	52.9%	61.5%	0
LCSD-011314	62.4%	71.4%	0
B22-SP1-20140107	63.6%	75.8%	0
B20-SP1-20140107	62.8%	72.9%	0
B18-SP1-20140107	49.7%	56.7%	0
B19-SP-19-1-20140107	42.9%	50.6%	0

	LCS/MB LIMITS	QC LIMITS
(TPRT) = Tripropyl Tin Chloride	(30-160)	(30-160)
(TPNT) = Tripentyl Tin Chloride	(30-160)	(30-160)

Prep Method: SW3510C
Analytical Method: TBT (Hexyl) Krone 1988
Log Number Range: 14-592 to 14-595

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: LCS-011314**
Page 1 of 1 **LAB CONTROL SAMPLE**

Lab Sample ID: LCS-011314
LIMS ID: 14-592
Matrix: Water
Data Release Authorized: *B*
Reported: 01/20/14

QC Report No: XU17-Apex Labs
Project: A4A0131
Date Sampled: NA
Date Received: NA

Date Extracted LCS: 01/13/14

Date Analyzed LCS: 01/15/14 11:51
LCSD: 01/15/14 12:05
Instrument/Analyst LCS: NT12/JLW
LCSD: NT12/JLW

Sample Amount LCS: 100 mL
LCSD: 100 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Alumina Cleanup: Yes

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Tributyltin Ion	1.50	2.23	67.3%	1.70	2.23	76.2%	12.5%
Dibutyltin Ion	1.17	1.92	60.9%	1.31	1.92	68.2%	11.3%
Butyltin Ion	0.45	1.56	28.8%	0.51	1.56	32.7%	12.5%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

TBT Surrogate Recovery

	LCS	LCSD
Tripropyl Tin Chloride	52.9%	62.4%
Tripentyl Tin Chloride	61.5%	71.4%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by Krone 1988 SIM GC/MS **Sample ID: MB-011314**
Extraction Method: SW3510C **METHOD BLANK**

Lab Sample ID: MB-011314
LIMS ID: 14-592
Matrix: Water
Data Release Authorized:
Reported: 01/20/14

QC Report No: XU17-Apex Labs
Project: A4A0131
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 01/13/14
Date Analyzed: 01/15/14 11:37
Instrument/Analyst: NT12/JLW

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	53.9%
Tripentyl Tin Chloride	62.0%

Basin 20 Storm Water Sampling and Analysis Data
March 28, 2014 Sampling Event, Source Control Evaluation,
Burgard Industrial Park, Portland, Oregon
Bridgewater Group, Inc., 2014

Basin 20 Storm Water Sampling and Analysis Data
March 28, 2014 Sampling Event
Source Control Evaluation
Burgard Industrial Park
Portland, Oregon

TO: Jim Orr/Oregon DEQ

CC: Mat Cusma/Schnitzer
Mark Bartee/Schnitzer

FROM: Ross Rieke/Bridgewater Group

DATE: June 6, 2014

This memorandum presents the results of the March 28, 2014 storm water sampling and analysis performed at Basin 20 at the Burgard Industrial Park (BIP) in Portland, Oregon (Figure 1, Figure 2). The storm water sampling and analysis were performed in general accordance with the March 12, 2013 *Basin 19, 20, and 20A Sampling and Analysis Plan*.

Basin 20 Description

Based on 2012 and 2013 smoke testing, flow testing, and dye testing and a City of Portland video survey of Basin 21 conveyance and discharge system, Outfall 20 appears to drain an approximately 1.7 acre area north of the head of the IT slip (Figure 3). Activities in this predominantly paved area include Schnitzer Steel vendor and employee vehicle traffic and vehicle traffic related to other BIP entities (Wilbur-Ellis, RB Rubber Recycling), as well as non-BIP (Rock-Tenn) employee, vendor, and customer car and truck traffic and material storage.

Historical storm water system drawings showed Outfall 20 draining an area immediately south of Burgard Way, east of the head of the IT slip. However, site observations during periods of extended heavy rainfall in 2011 noted that this area does not drain and storm water is retained on the area and eventually infiltrates and/or evaporates.

Basin 20 Storm Water Sampling and Analysis

Storm Water Sample Collection

A Basin 20 storm water sample was collected on March 28, 2014 at the Basin 20 outfall at the IT Slip. Table 1 presents the rainfall conditions preceding, and during, the storm water sampling event. Based on past observations of storm events at the site, discharge from Basin 20 is not expected to have occurred prior to 5:00 AM, and would have begun with the 0.14 inches of precipitation falling between 5:00 AM and 6:00 AM[1]. Given that the sample was collected at 7:55 AM[2], it can be inferred that the sample was collected within the first three hours of discharge[3]. The rainfall occurring during the 24-hours preceded the sampled storm event (0.17

[1] Based on data from the City of Portland Shipyard Rain Gauge located about 1500 feet southeast of Basin 20

[2] Pacific Standard Time

[3] Flow was observed at the OF20 sample point when the field sampling crew arrived at the site at about 6:00 AM, shortly after sunrise and, thus, the precise time of the start of flow is not known.

inch) slightly exceeded the "target" of 0.1 inch. In addition, the storm event was predicted to exceed (and did actually exceed) 0.2-inch of rainfall, and the event was expected to last (and did actually last) for more than three hours. Given these sampling conditions, the March 28, 2014 sample is representative of typical storm water discharging from Basin 20.

Consistent with previous sampling events, the OF20 storm water sample was collected by lowering a stainless steel container into the discharging water in the shallow "quieting basin" and filling the container. The container was filled by placing the container opening facing away from the flowing water. The sample was then poured into the laboratory-supplied sample container specific for each analysis. Overall, the storm water sample was collected in a manner that minimized potential suspended bank soil particulates in the sample.

Storm Water Sample Analysis

The Basin 20 storm water sample was analyzed for the following:

- PCB aroclors, homologs, and congeners;
- Phthalates;
- Dioxins/furans;
- Butyltins;
- Aluminum, antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, and zinc;
- Polycyclic aromatic hydrocarbons (PAHs);
- Organochlorine pesticides;
- Petroleum Hydrocarbons (gasoline, diesel, and heavy oil);
- Total suspended solids (TSS); and
- Total organic carbon (TOC).

Table 2 presents the results of the Basin 20 storm water sample analyses. Copies of the analytical laboratory reports are provided in Appendix A. Review of the laboratory QA/QC results did not indicate any issues requiring corrective action.

Attachments:

Table 1 – Storm Water Sampling Event Rainfall Data, 3/28/2014 Sampling Event
Table 2 – Storm Water Sample Analytical Laboratory Results
Figure 1 – Site Location Map
Figure 2 – Burgard Industrial Park Site Plan
Figure 3 – Basin 20 Storm Water Sample Location
Appendix A – Analytical Laboratory Reports

Tables

Table 1
Storm Water Sampling Event Rainfall Data
3/28/2014 Sampling Event
Burgard Industrial Park Basin 20

Date	Daily Total	Hourly Rain Fall (0.01 inches)																							
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
3/16/14	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	27	16	9	11	3	0	0
3/17/14	6	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0
3/18/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/19/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/20/14	4	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
3/21/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/22/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/23/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/24/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/25/14	23	0	0	0	0	5	10	1	0	0	0	1	0	1	0	4	0	1	0	0	0	0	0	0	0
3/26/14	45	0	0	1	2	0	5	8	0	0	0	1	3	0	11	0	1	1	0	0	2	2	0	7	1
3/27/14	21	0	0	9	0	2	1	0	0	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0	2
3/28/14	70	3	0	3	0	2	14	6	3	7	9	4	4	6	6	0	0	1	0	0	0	2	0	0	0

Sample collected 7:55

Hours are Pacific Standard Time
Data from Shipyard Rain Gage - 8900 N. Sever Road
Sampling Day
Sampling Hours

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 20

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	B20-SP1 11/18/2013	B20-SP1 1/7/2014	Basin 20 SP1 3/28/2014
PAHs (ug/l)					
Acenaphthene	0.2		0.095 U	0.10 U	0.038 U
Acenaphthylene	0.2		0.095 U	0.10 U	0.038 U
Anthracene			0.095 U	0.10 U	0.038 U
Benzo(a)anthracene	0.018		0.10 U	0.10 U	0.051 J
Benzo(a)pyrene	0.018		0.16 J	0.15 U	0.057 U
Benzo(b+k)fluoranthene	0.018		0.14 J	0.15 U	0.11 J
Benzo(g,h,i)perylene	0.2		0.10 J	0.10 U	0.093
Chrysene	0.018		0.13 J	0.12 J	0.12
Dibenzo(a,h)anthracene	0.018		0.10 U	0.10 U	0.038 U
Fluoranthene	0.2		0.14 J	0.15 J	0.12
Fluorene	0.2		0.095 U	0.10 U	0.038 U
Indeno(1,2,3-cd)pyrene	0.018		0.10 U	0.10 U	0.059 J
Naphthalene	0.2		0.19 U	0.20 U	0.076 U
Phenanthrene	0.2		0.10 U	0.12 J	0.067 J
Pyrene	0.2		0.17 J	0.19 J	0.16
Total Detected PAHs		1	0.82	0.58	0.77
PCBs (ug/l)					
Aroclor 1016	0.96		0.010 U	0.019 U	0.0094 U
Aroclor 1221	0.034		0.010 U	0.019 U	0.0094 U
Aroclor 1232	0.034		0.010 U	0.019 U	0.0094 U
Aroclor 1242	0.034		0.021	0.055	0.018 J
Aroclor 1248	0.034		0.010 U	0.019 U	0.0094 U
Aroclor 1254	0.034		0.038	0.075	0.028
Aroclor 1260	0.034		0.023	0.043	0.022
Total Detected PCB aroclors	0.000064		0.082	0.17	0.067
PCB Congeners (ng/l)					
2-MonoCB-(1)			0.033 U	0.11	0.016 U
3-MonoCB-(2)			0.016 U	0.016 J	0.0051 U
4-MonoCB-(3)			0.024 J	0.057 J	0.011 U
22'-DiCB-(4)			0.33	1.0	0.17
2,3-DiCB-(5)			0.017 U	0.031 U	0.0099 U
2,3'-DiCB-(6)			0.11	0.33	0.051 J
2,4-DiCB-(7)			0.015 U	0.050 U	0.010 U
2,4'-DiCB-(8)			0.54	1.3	0.28
2,5-DiCB-(9)			0.028 J	0.086 U	0.0146 J
2,6-DiCB-(10)			0.015 U	0.019 U	0.0093 U
3,3'-DiCB-(11)			0.50	0.72	0.76
DiCB-(12)+(13)			0.063 U	0.16 J	0.056 J
3,5-DiCB-(14)			0.015 U	0.021 U	0.0097 U
4,4'-DiCB-(15)			0.66	1.7	0.32
22'3-TriCB-(16)			0.58	2.0	0.26
22'4-TriCB-(17)			0.52	1.5	0.23
TriCB-(18)+(30)			1.1	3.0	0.51
22'6-TriCB-(19)			0.14	0.39	0.072 J
TriCB-(20) + (28)			2.5	6.1	1.2
TriCB-(21)+(33)			1.4	3.7	0.68
234'-TriCB-(22)			1.0	2.4	0.49
235-TriCB-(23)			0.020 U	0.0033 U	0.0028 U
236-TriCB-(24)			0.029 J	0.0050 U	0.0024 U
23'4-TriCB-(25)			0.18	0.44	0.076 J
TriCB-(26)+(29)			0.36	1.0	0.17 J
23'6-TriCB-(27)			0.10 J	0.26	0.046 J
24'5-TriCB-(31)			1.9	4.8	0.89
24'6-TriCB-(32)			0.38	1.1	0.18

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 20

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	B20-SP1 11/18/2013	B20-SP1 1/7/2014	Basin 20 SP1 3/28/2014
23'5'-TriCB-(34)			0.020 U	0.0032 U	0.0028 U
33'4-TriCB-(35)			0.047 J	0.12	0.019 U
33'5-TriCB-(36)			0.016 U	0.0030 U	0.0025 U
344'-TriCB-(37)			0.94	2.2	0.51
345-TriCB-(38)			0.019 U	0.0033 U	0.0027 U
34'5-TriCB-(39)			0.017 U	0.022 J	0.0051 J
TetraCB-(40)+(41)+(71)			1.3	3.1	0.68
22'34'-TetraCB-(42)			0.67	1.7	0.36
22'35-TetraCB-(43)			0.10 J	0.23	0.041 J
TetraCB-(44)+(47)+(65)			2.2	5.3	1.1
TetraCB-(45)+(51)			0.33	0.85	0.18 J
22'36'-TetraCB-(46)			0.13	0.31	0.063 J
22'45-TetraCB-(48)			0.39	0.92	0.23
TetraCB-(49)+TetraCB-(69)			1.1	2.8	0.55
TetraCB-(50)+(53)			0.23	0.58	0.12 J
22'55'-TetraCB-(52)			2.2	5.6	1.1
22'66'-TetraCB-(54)			0.016 U	0.010 U	0.0052 U
233'4-TetraCB-(55)			0.018 U	0.0054 U	0.0032 U
233'4'-Tetra CB(56)			0.83	1.8	0.40
233'5-TetraCB-(57)			0.018 U	0.0053 U	0.049 J
233'5'-TetraCB-(58)			0.018 U	0.0052 U	0.0029 U
TetraCB-(59)+(62)+(75)			0.20 J	0.45	0.097 J
2344'-TetraCB -(60)			0.35	0.81	0.22
TetraCB-(61)+(70)+(74)+(76)			3.0	6.5	1.5
234'5-TetraCB-(63)			0.048 J	0.11	0.025 J
234'6-TetraCB-(64)			1.1	2.4	0.52
23'44'-TetraCB-(66)			1.5	3.4	0.72
23'45-TetraCB-(67)			0.053 J	0.13	0.026 J
23'45'-TetraCB-(68)			0.016 U	0.012 J	0.0035 J
23'55'-TetraCB-(72)			0.017 U	0.020 J	0.0046 J
23'5'6-TetraCB-(73)			0.016 U	0.00093 U	0.0016 U
33'44'-TetraCB-(77)			0.24	0.46	0.11
33'45-TetraCB-(78)			0.018 U	0.0056 U	0.0029 U
33'45'-TetraCB(79)			0.030 J	0.058 J	0.015 J
33'55'-TetraCB-(80)			0.016 U	0.0050 U	0.0025 U
344'5-TetraCB-(81)			0.022 U	0.013 J	0.0035 U
22'33'4-PentaCB-(82)			0.51	1.0	0.23
PentaCB-(83)+(99)			1.7	3.3	0.80
22'33'6-PentaCB-(84)			0.90	1.9	0.44
PentaCB-(85)+(116)+(117)			0.52	1.0	0.22 J
PentaCB-(86)(87)(97)(109)(119)(125)			2.6	5.1	1.2
PentaCB-(88)+(91)			0.39	0.78	0.20
22'346'-PentaCB-(89)			0.036 J	0.068 J	0.018 J
PentaCB-(90)+(101)+(113)			3.3	6.5	1.5
22'355'-PentaCB-(92)			0.55	1.1	0.25
PentaCB-(93)+(98)+(100)+(102)			0.12 J	0.23 J	0.056 J
22'356'-PentaCB-(94)			0.021 U	0.027 J	0.0060 J
22'35'6-PentaCB-(95)			2.3	4.7	1.1
22'366'-PentaCB-(96)			0.019 U	0.039 J	0.0079 U
22'45'6-PentaCB-(103)			0.018 U	0.025 J	0.0048 J
22'466'-PentaCB-(104)			0.016 U	0.0026 U	0.0016 U
233'44'-PentaCB-(105)			1.8	3.3	0.79
233'45-PentaCB-(106)			0.020 U	0.0011 U	0.0058 U
233'4'5-PentaCB-(107)			0.21	0.45	0.10
PentaCB-(108)+(124)			0.14 J	0.27	0.06 J
PentaCB-(110)+(115)			5.8	10	2.8
233'55'-PentaCB-(111)			0.014 U	0.0014 U	0.0010 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 20

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	B20-SP1 11/18/2013	B20-SP1 1/7/2014	Basin 20 SP1 3/28/2014
233'56-PentaCB-(112)			0.015 U	0.0016 U	0.0010 U
2344'5-PentaCB-(114)			0.074 J	0.14	0.034 J
23'44'5-PentaCB-(118)			4.0	7.5	1.7
23'455'-PentaCB-(120)			0.014 U	0.0096 J	0.00095 U
23'45'6-PentaCB-(121)			0.014 U	0.0014 U	0.0010 U
233'4'5'-PentaCB-(122)			0.054 J	0.092 J	0.021 U
23'44'5'-PentaCB-(123)			0.071 J	0.090 J	0.018 U
33'44'5-PentaCB-(126)			0.025 J	0.035 J	0.0062 U
33'455'-PentaCB-(127)			0.020 U	0.0076 U	0.0056 U
HexaCB-(128)+(166)			1.0	1.8	0.47
HexaCB-(129)+(138)+(163)			6.6	12	3.2
22'33'45'-HexaCB-(130)			0.33	0.63	0.18
22'33'46-HexaCB-(131)			0.081 J	0.14	0.044 J
22'33'46'-HexaCB-(132)			1.8	3.4	1.0
22'33'55'-HexaCB-(133)			0.054 J	0.10	0.031 J
HexaCB-(134)+(143)			0.26	0.42	0.13 J
HexaCB-(135)+(151)			1.1	2.1	0.68
22'33'66'-HexaCB-(136)			0.43	0.82	0.24
22'344'5-HexaCB-(137)			0.31	0.54	0.14
HexaCB-(139)+(140)			0.083 J	0.14 J	0.041 J
22'3455'-HexaCB-(141)			1.0	1.8	0.48
22'3456-HexaCB-(142)			0.021 U	0.010 U	0.0044 U
22'345'6-HexaCB-(144)			0.19	0.34	0.10
22'3466'-HexaCB-(145)			0.020 U	0.0022 U	0.0039 U
22'34'55'-HexaCB-(146)			0.60	1.1	0.31
HexaCB-(147)+(149)			3.3	6.0	1.9
22'34'56'-HexaCB-(148)			0.025 U	0.0049 J	0.0049 U
22'34'66'-HexaCB-(150)			0.018 U	0.0075 J	0.0038 U
22'3566'-HexaCB-(152)			0.019 U	0.0052 U	0.0033 U
HexaCB-(153)+(168)			3.8	6.7	2.1
22'44'56'-HexaCB-(154)			0.029 J	0.049 J	0.016 J
22'44'66'-HexaCB-(155)			0.020 U	0.0012 U	0.0042 U
HexaCB-(156)+(157)			0.68	1.3	0.33
233'44'6-HexaCB-(158)			0.60	1.1	0.29
233'455'-HexaCB-(159)			0.035 J	0.066 J	0.022 J
233'456-HexaCB-(160)			0.015 U	0.0075 U	0.0036 U
233'45'6-HexaCB-(161)			0.014 U	0.0065 U	0.0030 U
233'4'55'-HexaCB-(162)			0.024 J	0.029 J	0.0078 U
233'4'5'6-HexaCB-(164)			0.35	0.67	0.20
233'55'6-HexaCB-(165)			0.015 U	0.0071 U	0.0034 U
23'44'55'-HexaCB-(167)			0.23	0.41	0.11
33'44'55'-HexaCB-(169)			0.023 U	0.0060 U	0.0050 U
22'33'44'5-HeptaCB-(170)			1.0	1.7	0.57
HeptaCB-(171)+(173)			0.28	0.55	0.17 J
22'33'455'-HeptaCB-(172)			0.18	0.31	0.11
22'33'456'-HeptaCB-(174)			0.93	0.0044 U	0.57
22'33'45'6-HeptaCB-(175)			0.035 J	0.077 J	0.023 J
22'33'466'-HeptaCB-(176)			0.10	0.20	0.062 J
22'33'45'6'-HeptaCB-(177)			0.52	1.0	0.32
22'33'55'6-HeptaCB-(178)			0.18	0.33	0.10
22'33'566'-HeptaCB-(179)			0.32	0.66	0.20
HeptaCB-(180)+(193)			2.5	4.7	1.3
22'344'56-HeptaCB-(181)			0.020 U	0.0045 U	0.0064 U
22'344'56'-HeptaCB-(182)			0.019 U	0.0021 U	0.0049 U
22'344'5'6-HeptaCB-(183)			0.50	1.1	0.32
22'344'66'-HeptaCB-(184)			0.013 U	0.0014 U	0.0036 U
22'3455'6-HeptaCB-(185)			0.083 J	2.2	0.0075 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 20

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	B20-SP1 11/18/2013	B20-SP1 1/7/2014	Basin 20 SP1 3/28/2014
22'34566'-HeptaCB-(186)			0.014 U	0.0016 U	0.0039 U
22'34'55'6-HeptaCB-(187)			1.1	2.3	0.73
22'34'566'-HeptaCB-(188)			0.016 U	0.0024 U	0.0048 U
233'44'55'-HeptaCB-(189)			0.042 U	0.073 U	0.023 U
233'44'56-HeptaCB-(190)			0.21	0.34	0.11
233'44'5'6-HeptaCB-(191)			0.039 J	0.074 J	0.021 J
233'455'6-HeptaCB-(192)			0.017 U	0.0038 U	0.0053 U
22'33'44'55'-OctaCB-(194)			0.63	1.2	0.35
22'33'44'56-OctaCB-(195)			0.18	0.36	0.11
22'33'44'56'-OctaCB-(196)			0.33	0.64	0.19
22'33'44'66'OctaCB-(197)			0.018 U	0.028 J	0.012 J
OctaCB-(198)+(199)			0.80	1.7	0.48
22'33'4566'-OctaCB-(200)			0.072 J	0.20	0.048 J
22'33'45'66'-OctaCB-(201)			0.074 U	0.19	0.056 J
22'33'55'66'-OctaCB-(202)			0.18	0.35	0.087 J
22'344'55'6-OctaCB-(203)			0.50	1.1	0.31
22'344'566'-OctaCB-(204)			0.017 U	0.0040 U	0.0071 U
233'44'55'6-OctaCB-(205)			0.026 U	0.049 U	0.019 U
22'33'44'55'6-NonaCB-(206)			0.59	1.3	0.28
22'33'44'566'-NonaCB-(207)			0.063 J	0.14	0.035 J
22'33'455'66'-NonaCB-(208)			0.14	0.29	0.067 J
DecaCB-(209)			0.14	0.31	0.077 J
PCB Homologs (ng/l)					
Monochlorobiphenyl			0.024	0.18	0.0051 U
Dichlorobiphenyl			2.2	5.2	1.7
Trichlorobiphenyl			11	29	5.3
Tetrachlorobiphenyl			16	38	8.0
Pentachlorobiphenyl			25	48	12
Hexachlorobiphenyl			23	41	12
Heptachlorobiphenyl			8.0	16	4.6
Octachlorobiphenyl			2.7	5.8	1.6
Nonachlorobiphenyl			0.8	1.7	0.38
Decachlorobiphenyl			0.14	0.31	0.077
Total Detected PCBs (Method 1668	0.064	400	89	184	45
Phthalates (ug/l)					
Bis(2-ethylhexyl) phthalate	2.2	5	11 U	11 U	2.0
Butylbenzyl phthalate	3		14 U	15 U	0.943 U
Dibutyl phthalate	3		14 U	15 U	0.943 U
Diethyl phthalate	3		14 U	15 U	0.943 U
Dimethyl phthalate	3		14 U	15 U	0.943 U
Di-n-octyl phthalate	3		14 U	15 U	0.943 U
Pesticides (ug/l)					
2,4'-DDD	0.00031		0.010 U	0.010 U	0.010 U
2,4'-DDE	0.00022		0.010 U	0.010 U	0.010 U
2,4'-DDT	0.2		0.019 U	0.010 U	0.019 U
4,4'-DDD	0.00031		0.010 U	0.010 U	0.010 U
4,4'-DDE	0.00022		0.010 U	0.010 U	0.010 U
4,4'-DDT	0.00022		0.010 U	0.019 U	0.019 U
Aldrin	0.00005		0.0095 U	0.010 U	0.010 U
alpha-BHC	0.0049		0.0095 U	0.010 U	0.010 U
beta-BHC	0.017		0.0095 U	0.010 U	0.010 U
cis-Chlordane	0.00081		0.0095 U	0.010 U	0.010 U
cis-Nonachlor	0.19		0.010 U	0.010 U	0.010 U
Chlordane Technical			0.36 U	0.36 U	0.36 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 20

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	B20-SP1 11/18/2013	B20-SP1 1/7/2014	Basin 20 SP1 3/28/2014
delta-BHC	0.052		0.0095 U	0.010 U	0.010 U
Dieldrin	0.000054		0.0095 U	0.010 U	0.010 U
Endosulfan I	0.051		0.029 U	0.048 U	0.048 U
Endosulfan II	0.051		0.0095 U	0.010 U	0.010 U
Endosulfan sulfate	89		0.0095 U	0.010 U	0.010 U
Endrin	0.036		0.0095 U	0.010 U	0.010 U
Endrin aldehyde			0.0095 U	0.010 U	0.010 U
Endrin ketone			0.0095 U	0.010 U	0.010 U
gamma-BHC	0.037		0.0095 U	0.010 U	0.010 U
Heptachlor	0.000079		0.019 U	0.010 U	0.010 U
Heptachlor epoxide	0.000039		0.0095 U	0.010 U	0.010 U
Hexachlorobenzene	0.00029		0.029 U	0.029 U	0.029 U
Hexachlorobutadiene	0.86		0.0095 U	0.010 U	0.010 U
Hexachloroethane	3.3				
Methoxychlor	0.03		0.029 U	0.029 U	0.03 U
Mirex	NC		0.0095 U	0.010 U	0.010 U
Oxychlordane	0.19		0.0095 U	0.010 U	0.010 U
Toxaphene	0.0002		0.36 U	0.36 U	0.36 U
trans-Chlordane	0.00081		0.0095 U	0.010 U	0.010 U
trans-Nonachlor	0.19		0.0095 U	0.010 U	0.010 U
Dioxins (pg/l)					
1,2,3,4,6,7,8-HeptaCDD			137	375	277
1,2,3,4,6,7,8-HeptaCDF			28 U	64 U	43 U
1,2,3,4,7,8,9-HeptaCDF			1.5 U	4.9 U	2.6 J
1,2,3,4,7,8-HexaCDD			2.9 U	4.5 J	2.9 J
1,2,3,4,7,8-HexaCDF			2.6 U	8.2 J	4.8 J
1,2,3,6,7,8-HexaCDD			6.4 J	15 J	12 J
1,2,3,6,7,8-HexaCDF			1.6 J	3.7 J	2.6 J
1,2,3,7,8,9-HexaCDD			5.0 J	12 J	9.7 J
1,2,3,7,8,9-HexaCDF			1.1 U	1.2 U	1.3 U
1,2,3,7,8-PentaCDD			1.2 U	2.9 J	1.3 U
1,2,3,7,8-PentaCDF			1.4 U	2.0 J	1.1 U
2,3,4,6,7,8-HexaCDF			1.8 J	3.1 J	2.1 J
2,3,4,7,8-PentaCDF			1.4 U	3.2 J	1.1 U
2,3,7,8-TetraCDD	0.0051		1.2 U	0.9 U	1.7 U
2,3,7,8-TetraCDF			2.0 J	5.2 J	3.1 J
OCDD			1100	3290	2090
OCDF			44	143	86 J
HeptaCDD homologs			328	883	600
HeptaCDF homologs			43	126	71
HexaCDD homologs			55	118	76
HexaCDF homologs			42	106	72
PentaCDD homologs			1.2 U	7.4 J	1.3 U
PentaCDF homologs			12	40 J	19 J
TetraCDD homologs			1.2 U	1.0 J	8.6 U
TetraCDF homologs			4.7	31	12 J
Total Dioxin TEQ (ND=DL/2)	0.0051		5.3	15	9.2
Total Dioxin TEQ (ND=0)	0.0051		3.4	14	7.2
Butyltins (ug/l)					
Butyltin ion			0.20 U	0.20 U	0.20 U
Dibutyltin ion			0.29 U	0.29 U	0.29 U
Tributyltin ion	0.072		0.19 U	0.19 U	0.19 U
Total Metals (ug/l)					
Aluminum			1880	6040	1840

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 20

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix E "Typical PH Values"[2]	B20-SP1 11/18/2013	B20-SP1 1/7/2014	Basin 20 SP1 3/28/2014
Antimony	6		1.2	1.8	1.5 J
Arsenic	0.045	2	1.0	1.6	0.84 J
Cadmium	0.094	0.7	0.42	1.0	0.33
Chromium	100	7	18	65	17
Copper	2.7	60	25	59	18
Lead	0.54	50	24	78	23
Manganese	50		222	744	184
Mercury	0.77	0.2	0.040 U	0.079 J	0.043 J
Nickel	16	8	3.7	9.2	3.0
Silver	0.12	0.1	0.10 U	0.11 J	0.10 U
Zinc	36	500	159	381	109
Dissolved Metals (ug/l)					
Aluminum			79	51	91
Antimony	6		0.72 J	0.51 J	0.50 U
Arsenic	0.045	2	0.50 U	0.50 U	0.50 U
Cadmium	0.094	0.7	0.12 J	0.04 J	0.044 J
Chromium	100	7	1.2	0.72 J	1.7
Copper	2.7	60	9.8	5.5	3.9
Lead	0.54	50	0.68	0.33	0.93
Manganese	50		56	15	10
Mercury	0.77	0.2	0.040 U	0.040 U	0.040 U
Nickel	16	8	1.6	0.82 J	0.66 J
Silver	0.12	0.1	0.10 U	0.10 U	0.10 U
Zinc	36	500	52	11	24
Pertroleum Hydrocarbons (mg/l)					
Gasoline			0.050 U	0.050 U	0.05 U
Diesel			0.10 U	0.47 U	0.10 U
Oil			1.5	3.7	1.5
TSS (mg/l)		60	49	215	53
TOC (mg/l)			15	6.4	6.1

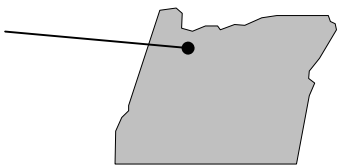
U - Not detectet at noted detection limit
J- Estimated value

1 - Table 3-1 PH JSCS Guidance, 7/16/2007 revision
2 - October 2010, DEQ Guidance for Evaluating Stormwater Pathway at Upland Sites, Appendix E, Tool For Evaluating Stormwater Data

Detected concentration > 10 x SLV
Detected concentration > 100 x SLV
Detected concentration > 1000 x SLV

Figures

Portland, Oregon



N

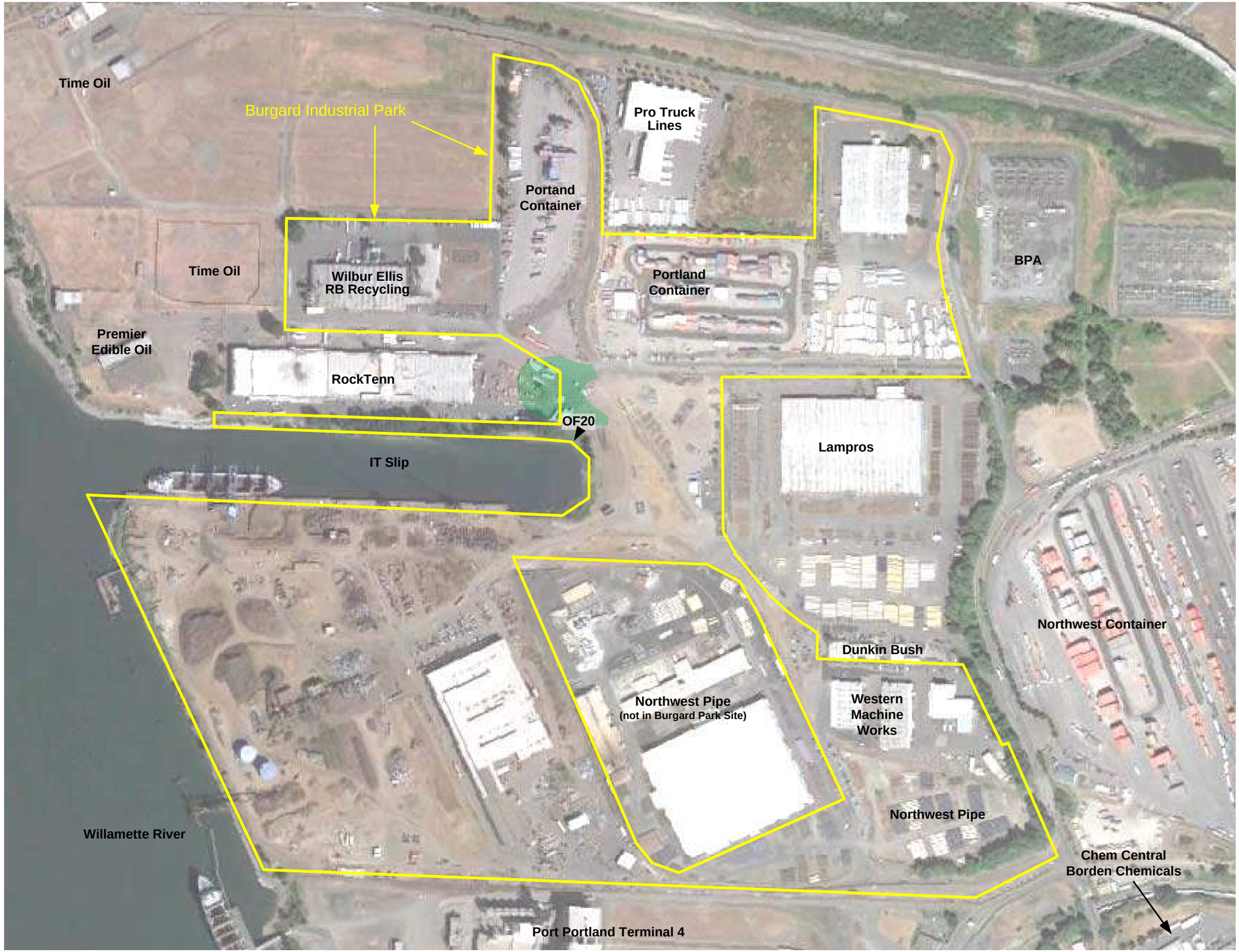
Approximate Scale

5000 feet

Base photograph August 2012

Figure 1
Site Location Map
Burgard Industrial Park

BRIDGEWATER GROUP, INC.



Basin 20

Base Photograph August 2012

Figure 2
Burgard Industrial Park Site Plan
Portland, Oregon

BRIDGEWATER GROUP, INC.

N

Approximate Scale

140 feet

Base photograph August 2012

Storm Water Sample Location

Figure 3
Basin 20 Storm Water Sample Location
Burgard Industrial Park

BRIDGEWATER GROUP, INC.

Appendix A – Analytical Laboratory Reports

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Wednesday, May 7, 2014

Ross Rieke
Bridgewater Group
4500 SW Kruse Way; Suite 110
Lake Oswego, OR 97035

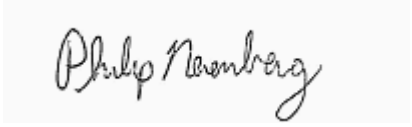
RE: Schnitzer-Burgard / 8001-20

Enclosed are the results of analyses for work order A4C0830, which was received by the laboratory on 3/28/2014 at 2:35:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B22-SWDP-20140328	A4C0830-01	Water	03/28/14 12:10	03/28/14 14:35
B20-SP1-20140328	A4C0830-02	Water	03/28/14 08:55	03/28/14 14:35

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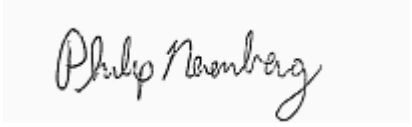

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

ANALYTICAL SAMPLE RESULTS

Diesel and Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SWDP-20140328 (A4C0830-01RE1)			**Matrix: Water**		**Batch: 4040085**			
Diesel	**0.504**	0.0943	0.189	mg/L	1	04/04/14 10:26	NWTPH-Dx	F-12, F-15
Oil	**0.995**	0.189	0.377	"	"	"	"	F-03
Surrogate: o-Terphenyl (Surr)			*Recovery: 91 %*	*Limits: 50-150 %*	"	"	"	
B20-SP1-20140328 (A4C0830-02RE1)			**Matrix: Water**		**Batch: 4040249**			
Diesel	ND	0.0952	0.190	mg/L	1	04/10/14 09:35	NWTPH-Dx	
Oil	**1.52**	0.190	0.381	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 100 %*	*Limits: 50-150 %*	"	"	"	

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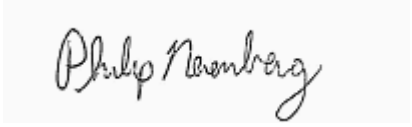

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SWDP-20140328 (A4C0830-01)			**Matrix: Water**		**Batch: 4040053**			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/02/14 17:03	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 119 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*109 %*	*Limits: 50-150 %*	"	"	"	
B20-SP1-20140328 (A4C0830-02)			**Matrix: Water**		**Batch: 4040091**			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/03/14 21:47	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 89 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*84 %*	*Limits: 50-150 %*	"	"	"	

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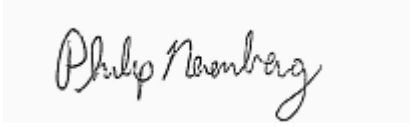

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SWDP-20140328 (A4C0830-01)			**Matrix: Water**		**Batch: 4040202**			**C-07**
Aroclor 1016	ND	0.00952	0.0190	ug/L	1	04/09/14 11:01	EPA 8082A	
Aroclor 1221	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1232	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1242	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1248	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1254	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1260	ND	0.00952	0.0190	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 56 %*	*Limits: 40-135 %*	"	"	"	
B20-SP1-20140328 (A4C0830-02)			**Matrix: Water**		**Batch: 4040202**			**C-07**
Aroclor 1016	ND	0.00943	0.0189	ug/L	1	04/09/14 11:19	EPA 8082A	
Aroclor 1221	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1232	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1242	**0.0178**	0.00943	0.0189	"	"	"	"	J
Aroclor 1248	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1254	**0.0276**	0.00943	0.0189	"	"	"	"	
Aroclor 1260	**0.0218**	0.00943	0.0189	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 68 %*	*Limits: 40-135 %*	"	"	"	

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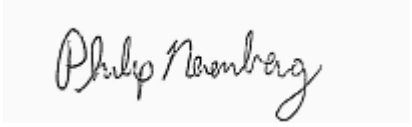

Philip Nerenberg, Lab Director

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SWDP-20140328 (A4C0830-01RE1)			**Matrix: Water**		**Batch: 4040212**			**C-05**
Aldrin	ND	0.00962	0.0192	ug/L	1	04/10/14 21:02	EPA 8081B	
alpha-BHC	ND	0.00962	0.0192	"	"	"	"	
beta-BHC	ND	0.00962	0.0192	"	"	"	"	
delta-BHC	ND	0.00962	0.0192	"	"	"	"	
gamma-BHC (Lindane)	ND	0.00962	0.0192	"	"	"	"	
cis-Chlordane	ND	0.00962	0.0192	"	"	"	"	
trans-Chlordane	ND	0.00962	0.0192	"	"	"	"	
4,4'-DDD	ND	0.0192	0.0192	"	"	"	"	
4,4'-DDE	ND	0.00962	0.0192	"	"	"	"	
4,4'-DDT	ND	0.00962	0.0192	"	"	"	"	
Dieldrin	ND	0.00962	0.0192	"	"	"	"	
Endosulfan I	ND	1.06	1.06	"	"	"	"	R-02
Endosulfan II	ND	0.00962	0.0192	"	"	"	"	
Endosulfan sulfate	ND	0.00962	0.0192	"	"	"	"	
Endrin	ND	0.00962	0.0192	"	"	"	"	
Endrin Aldehyde	ND	0.00962	0.0192	"	"	"	"	
Endrin ketone	ND	0.00962	0.0192	"	"	"	"	
Heptachlor	ND	0.00962	0.0192	"	"	"	"	
Heptachlor epoxide	ND	0.00962	0.0192	"	"	"	"	
Methoxychlor	ND	0.0288	0.0577	"	"	"	"	
Chlordane (Technical)	ND	0.362	0.721	"	"	"	"	
Toxaphene (Total)	ND	0.362	0.721	"	"	"	"	
cis-Nonachlor	ND	0.0192	0.0192	"	"	"	"	
2,4'-DDD	ND	0.00962	0.0192	"	"	"	"	
2,4'-DDE	ND	0.00962	0.0192	"	"	"	"	
2,4'-DDT	ND	0.0192	0.0192	"	"	"	"	
Hexachlorobenzene	ND	0.0288	0.0577	"	"	"	"	
Hexachlorobutadiene	ND	0.00962	0.0192	"	"	"	"	
Mirex	ND	0.00962	0.0192	"	"	"	"	
Oxychlordane	ND	0.00962	0.0192	"	"	"	"	
trans-Nonachlor	ND	0.00962	0.0192	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 74 %*	*Limits: 25-140 %*	"	"	"	
Decachlorobiphenyl (Surr)			*94 %*	*Limits: 30-135 %*	"	"	"	

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Philip Nerenberg, Lab Director

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503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B20-SP1-20140328 (A4C0830-02RE1)			**Matrix: Water**		**Batch: 4040212**			**C-05**
Aldrin	ND	0.00952	0.0190	ug/L	1	04/10/14 21:20	EPA 8081B	
alpha-BHC	ND	0.00952	0.0190	"	"	"	"	
beta-BHC	ND	0.00952	0.0190	"	"	"	"	
delta-BHC	ND	0.00952	0.0190	"	"	"	"	
gamma-BHC (Lindane)	ND	0.00952	0.0190	"	"	"	"	
cis-Chlordane	ND	0.00952	0.0190	"	"	"	"	
trans-Chlordane	ND	0.00952	0.0190	"	"	"	"	
4,4'-DDD	ND	0.00952	0.0190	"	"	"	"	
4,4'-DDE	ND	0.00952	0.0190	"	"	"	"	
4,4'-DDT	ND	0.0190	0.0190	"	"	"	"	
Dieldrin	ND	0.00952	0.0190	"	"	"	"	
Endosulfan I	ND	0.0476	0.0476	"	"	"	"	R-02
Endosulfan II	ND	0.00952	0.0190	"	"	"	"	
Endosulfan sulfate	ND	0.00952	0.0190	"	"	"	"	
Endrin	ND	0.00952	0.0190	"	"	"	"	
Endrin Aldehyde	ND	0.00952	0.0190	"	"	"	"	
Endrin ketone	ND	0.00952	0.0190	"	"	"	"	
Heptachlor	ND	0.00952	0.0190	"	"	"	"	
Heptachlor epoxide	ND	0.00952	0.0190	"	"	"	"	
Methoxychlor	ND	0.0286	0.0571	"	"	"	"	
Chlordane (Technical)	ND	0.358	0.714	"	"	"	"	
Toxaphene (Total)	ND	0.358	0.714	"	"	"	"	
cis-Nonachlor	ND	0.00952	0.0190	"	"	"	"	
2,4'-DDD	ND	0.00952	0.0190	"	"	"	"	
2,4'-DDE	ND	0.00952	0.0190	"	"	"	"	
2,4'-DDT	ND	0.0190	0.0190	"	"	"	"	
Hexachlorobenzene	ND	0.0286	0.0571	"	"	"	"	
Hexachlorobutadiene	ND	0.00952	0.0190	"	"	"	"	
Mirex	ND	0.00952	0.0190	"	"	"	"	
Oxychlordane	ND	0.00952	0.0190	"	"	"	"	
trans-Nonachlor	ND	0.00952	0.0190	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 81 %*	*Limits: 25-140 %*	"	"	"	
Decachlorobiphenyl (Surr)			*100 %*	*Limits: 30-135 %*	"	"	"	

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SWDP-20140328 (A4C0830-01RE1)			**Matrix: Water**		**Batch: 4040044**			
Acenaphthene	ND	0.0381	0.0762	ug/L	4	04/03/14 11:35	EPA 8270D	
Acenaphthylene	ND	0.0381	0.0762	"	"	"	"	
Anthracene	ND	0.0381	0.0762	"	"	"	"	
Benz(a)anthracene	**0.0550**	0.0381	0.0762	"	"	"	"	J
Benzo(a)pyrene	ND	0.114	0.114	"	"	"	"	
Benzo(b)fluoranthene	**0.0839**	0.0571	0.114	"	"	"	"	J
Benzo(k)fluoranthene	**0.0578**	0.0571	0.114	"	"	"	"	J
Benzo(g,h,i)perylene	**0.0841**	0.0381	0.0762	"	"	"	"	
Chrysene	**0.0862**	0.0381	0.0762	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0381	0.0762	"	"	"	"	
Fluoranthene	**0.123**	0.0381	0.0762	"	"	"	"	
Fluorene	**0.0489**	0.0381	0.0762	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	ND	0.0381	0.0762	"	"	"	"	
1-Methylnaphthalene	ND	0.0762	0.152	"	"	"	"	
2-Methylnaphthalene	ND	0.0762	0.152	"	"	"	"	
Naphthalene	ND	0.0762	0.152	"	"	"	"	
Phenanthrene	**0.110**	0.0381	0.0762	"	"	"	"	
Pyrene	**0.272**	0.0381	0.0762	"	"	"	"	
Carbazole	**0.156**	0.0571	0.114	"	"	"	"	
Dibenzofuran	ND	0.0381	0.0762	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**1.32**	0.952	1.90	"	"	"	"	J
Butyl benzyl phthalate	ND	0.952	1.90	"	"	"	"	
Diethylphthalate	ND	0.952	1.90	"	"	"	"	
Dimethylphthalate	ND	0.952	1.90	"	"	"	"	
Di-n-butylphthalate	ND	0.952	1.90	"	"	"	"	
Di-n-octyl phthalate	ND	0.952	1.90	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery: 78 %*	*Limits: 35-120 %*	"	"	"		
2-Fluorobiphenyl (Surr)		*69 %*	*Limits: 30-120 %*	"	"	"		
p-Terphenyl-d14 (Surr)		*59 %*	*Limits: 50-125 %*	"	"	"		

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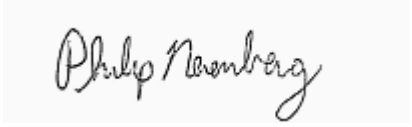

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B20-SP1-20140328 (A4C0830-02RE1)			**Matrix: Water**		**Batch: 4040120**			
Acenaphthene	ND	0.0377	0.0755	ug/L	4	04/04/14 21:58	EPA 8270D	
Acenaphthylene	ND	0.0377	0.0755	"	"	"	"	
Anthracene	ND	0.0377	0.0755	"	"	"	"	
Benz(a)anthracene	**0.0509**	0.0377	0.0755	"	"	"	"	J
Benzo(a)pyrene	ND	0.0566	0.113	"	"	"	"	
Benzo(b)fluoranthene	**0.106**	0.0566	0.113	"	"	"	"	J
Benzo(k)fluoranthene	ND	0.0566	0.113	"	"	"	"	
Benzo(g,h,i)perylene	**0.0934**	0.0377	0.0755	"	"	"	"	
Chrysene	**0.122**	0.0377	0.0755	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0377	0.0755	"	"	"	"	
Fluoranthene	**0.121**	0.0377	0.0755	"	"	"	"	
Fluorene	ND	0.0377	0.0755	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**0.0592**	0.0377	0.0755	"	"	"	"	J
1-Methylnaphthalene	ND	0.0755	0.151	"	"	"	"	
2-Methylnaphthalene	ND	0.0755	0.151	"	"	"	"	
Naphthalene	ND	0.0755	0.151	"	"	"	"	
Phenanthrene	**0.0666**	0.0377	0.0755	"	"	"	"	J
Pyrene	**0.155**	0.0377	0.0755	"	"	"	"	
Carbazole	ND	0.0566	0.113	"	"	"	"	
Dibenzofuran	ND	0.0377	0.0755	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**2.04**	0.943	1.89	"	"	"	"	
Butyl benzyl phthalate	ND	0.943	1.89	"	"	"	"	
Diethylphthalate	ND	0.943	1.89	"	"	"	"	
Dimethylphthalate	ND	0.943	1.89	"	"	"	"	
Di-n-butylphthalate	ND	0.943	1.89	"	"	"	"	
Di-n-octyl phthalate	ND	0.943	1.89	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery: 49 %*	*Limits: 35-120 %*	"	"	"		
2-Fluorobiphenyl (Surr)		*63 %*	*Limits: 30-120 %*	"	"	"		
p-Terphenyl-d14 (Surr)		*78 %*	*Limits: 50-125 %*	"	"	"		

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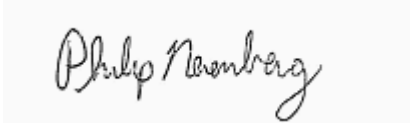

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SWDP-20140328 (A4C0830-01)			**Matrix: Water**					
Batch: 4040357								
Aluminum	**965**	25.0	50.0	ug/L	1	04/14/14 13:27	EPA 6020A	
Antimony	**2.16**	1.00	2.00	"	"	"	"	
Arsenic	**2.31**	0.500	1.00	"	"	"	"	
Cadmium	**0.256**	0.0400	0.200	"	"	"	"	
Chromium	**3.38**	0.500	1.00	"	"	"	"	
Copper	**38.0**	0.500	1.00	"	"	"	"	
Lead	**14.3**	0.100	0.200	"	"	"	"	
Manganese	**206**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**7.13**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**378**	2.00	4.00	"	"	"	"	
B20-SP1-20140328 (A4C0830-02)			**Matrix: Water**					
Batch: 4040357								
Aluminum	**1840**	25.0	50.0	ug/L	1	04/14/14 13:42	EPA 6020A	
Antimony	**1.47**	1.00	2.00	"	"	"	"	J
Arsenic	**0.844**	0.500	1.00	"	"	"	"	J
Cadmium	**0.333**	0.0400	0.200	"	"	"	"	
Chromium	**16.9**	0.500	1.00	"	"	"	"	
Copper	**17.6**	0.500	1.00	"	"	"	"	
Lead	**22.6**	0.100	0.200	"	"	"	"	
Manganese	**184**	0.500	1.00	"	"	"	"	
Mercury	**0.0426**	0.0400	0.0800	"	"	"	"	J
Nickel	**3.03**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**109**	2.00	4.00	"	"	"	"	

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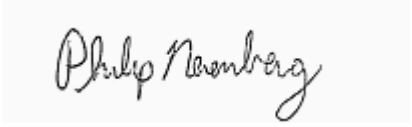

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4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SWDP-20140328 (A4C0830-01)			**Matrix: Water**					
Batch: 4040312								
Aluminum	**35.2**	25.0	50.0	ug/L	1	04/11/14 14:32	EPA 6020A (Diss)	J
Antimony	**1.19**	0.500	1.00	"	"	"	"	
Arsenic	**0.678**	0.500	1.00	"	"	"	"	J
Cadmium	**0.111**	0.0400	0.200	"	"	"	"	J
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**9.87**	0.500	1.00	"	"	"	"	
Lead	**1.08**	0.100	0.200	"	"	"	"	
Manganese	**152**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**4.33**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**212**	2.00	4.00	"	"	"	"	
B20-SP1-20140328 (A4C0830-02)			**Matrix: Water**					
Batch: 4040312								
Aluminum	**91.0**	25.0	50.0	ug/L	1	04/11/14 14:35	EPA 6020A (Diss)	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.0444**	0.0400	0.200	"	"	"	"	J
Chromium	**1.70**	0.500	1.00	"	"	"	"	
Copper	**3.90**	0.500	1.00	"	"	"	"	
Lead	**0.933**	0.100	0.200	"	"	"	"	
Manganese	**10.4**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**0.656**	0.500	1.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**23.7**	2.00	4.00	"	"	"	"	

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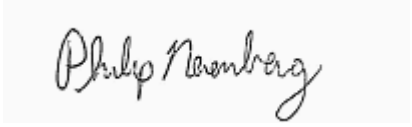

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B22-SWDP-20140328 (A4C0830-01)			**Matrix: Water**					
Batch: 4040096								
Total Suspended Solids	**34.0**	5.00	5.00	mg/L	1	04/03/14 17:10	SM 2540 D	
Batch: 4040130								
Total Organic Carbon	**14.2**	1.00	1.00	"	"	04/04/14 12:45	SM 5310 B	
B20-SP1-20140328 (A4C0830-02)			**Matrix: Water**					
Batch: 4040129								
Total Suspended Solids	**53.0**	5.00	5.00	mg/L	1	04/07/14 10:55	SM 2540 D	
Batch: 4040130								
Total Organic Carbon	**6.09**	1.00	1.00	"	"	04/04/14 14:05	SM 5310 B	

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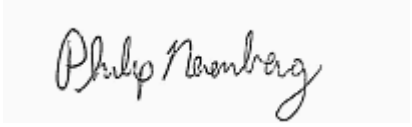

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4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040085 - EPA 3510C (Fuels/Acid Ext.)									**Water**			
Blank (4040085-BLK1)					Prepared: 04/03/14 07:36 Analyzed: 04/03/14 14:03							
NWTPH-Dx												
Diesel	ND	0.0909	0.182	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 92 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS (4040085-BS1)					Prepared: 04/03/14 07:36 Analyzed: 04/03/14 14:22							
NWTPH-Dx												
Diesel	0.785	0.100	0.200	mg/L	1	1.25	---	63	58-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 90 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS Dup (4040085-BSD1)					Prepared: 04/03/14 07:36 Analyzed: 04/03/14 14:41							**Q-19**
NWTPH-Dx												
Diesel	0.872	0.100	0.200	mg/L	1	1.25	---	70	58-115%	11	20%	
Surr: o-Terphenyl (Surr)			*Recovery: 88 %*	*Limits: 50-150 %*		*Dilution: 1x*						
Batch 4040249 - EPA 3510C (Fuels/Acid Ext.)									**Water**			
Blank (4040249-BLK1)					Prepared: 04/09/14 09:48 Analyzed: 04/09/14 20:03							
NWTPH-Dx												
Diesel	ND	0.0909	0.182	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 94 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS (4040249-BS1)					Prepared: 04/09/14 09:48 Analyzed: 04/09/14 20:26							
NWTPH-Dx												
Diesel	1.02	0.100	0.200	mg/L	1	1.25	---	82	58-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 98 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS Dup (4040249-BSD1)					Prepared: 04/09/14 09:48 Analyzed: 04/09/14 20:50							**Q-19**
NWTPH-Dx												
Diesel	1.05	0.100	0.200	mg/L	1	1.25	---	84	58-115%	3	20%	
Surr: o-Terphenyl (Surr)			*Recovery: 100 %*	*Limits: 50-150 %*		*Dilution: 1x*						

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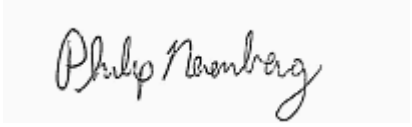

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QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040053 - EPA 5030B									**Water**			
Blank (4040053-BLK1)					Prepared: 04/02/14 10:00 Analyzed: 04/02/14 14:51							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 124 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*116 %*	*50-150 %*			*"*					
LCS (4040053-BS2)					Prepared: 04/02/14 10:00 Analyzed: 04/02/14 14:24							
NWTPH-Gx (MS)												
Gasoline Range Organics	0.528	0.0500	0.100	mg/L	1	0.500	---	106	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 99 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*112 %*	*50-150 %*			*"*					
Duplicate (4040053-DUP1)					Prepared: 04/02/14 14:35 Analyzed: 04/02/14 17:30							
QC Source Sample: B22-SWDP-20140328 (A4C0830-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 94 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*103 %*	*50-150 %*			*"*					

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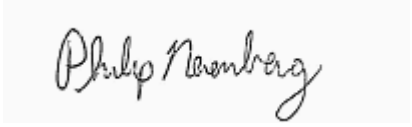

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Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040091 - EPA 5030B									Water			
Blank (4040091-BLK1)					Prepared: 04/03/14 09:00 Analyzed: 04/03/14 14:17							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 95 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*			*"*					
LCS (4040091-BS2)					Prepared: 04/03/14 09:00 Analyzed: 04/03/14 13:51							
NWTPH-Gx (MS)												
Gasoline Range Organics	0.457	0.0500	0.100	mg/L	1	0.500	---	91	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 89 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*95 %*	*50-150 %*			*"*					

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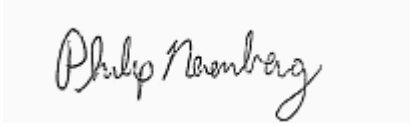

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Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040202 - EPA 3510C (Neutral pH)							**Water**					
Blank (4040202-BLK1)					Prepared: 04/08/14 06:57 Analyzed: 04/09/14 09:11							**C-07**
EPA 8082A												
Aroclor 1016	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1221	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 91 %*	*Limits: 40-135 %*		*Dilution: 1x*						
LCS (4040202-BS1)					Prepared: 04/08/14 06:57 Analyzed: 04/09/14 09:30							**C-07**
EPA 8082A												
Aroclor 1016	0.816	0.0100	0.0200	ug/L	1	1.25	---	65	40-140%	---	---	
Aroclor 1260	0.930	0.0100	0.0200	"	"	"	---	74	"	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 78 %*	*Limits: 40-135 %*		*Dilution: 1x*						
LCS Dup (4040202-BSD1)					Prepared: 04/08/14 06:57 Analyzed: 04/09/14 09:48							**C-07, Q-19**
EPA 8082A												
Aroclor 1016	0.863	0.0100	0.0200	ug/L	1	1.25	---	69	40-140%	6	30%	
Aroclor 1260	0.963	0.0100	0.0200	"	"	"	---	77	"	3	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 75 %*	*Limits: 40-135 %*		*Dilution: 1x*						

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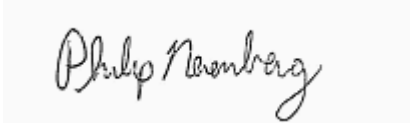

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040212 - EPA 3510C (Neutral pH)/3640A (GPC)							**Water**					
Blank (4040212-BLK1)					Prepared: 04/04/14 07:12 Analyzed: 04/10/14 19:33							**C-05**
EPA 8081B												
Aldrin	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
alpha-BHC	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
beta-BHC	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
delta-BHC	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
4,4'-DDT	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Dieldrin	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endosulfan I	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endosulfan II	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endrin	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endrin ketone	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Heptachlor	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Methoxychlor	ND	0.0273	0.0545	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	0.342	0.682	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	0.342	0.682	"	"	---	---	---	---	---	---	
cis-Nonachlor	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
2,4'-DDD	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
2,4'-DDE	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
2,4'-DDT	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	0.0273	0.0545	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Mirex	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Oxychlordane	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	

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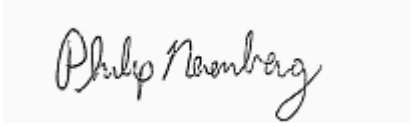

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040212 - EPA 3510C (Neutral pH)/3640A (GPC)							**Water**					
Blank (4040212-BLK1)					Prepared: 04/04/14 07:12	Analyzed: 04/10/14 19:33						**C-05**
trans-Nonachlor	ND	0.00909	0.0182	ug/L	"	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 57 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*96 %*	*30-135 %*			*"*					
LCS (4040212-BS1)					Prepared: 04/04/14 07:12	Analyzed: 04/10/14 19:51						**C-05**
EPA 8081B												
Aldrin	0.344	0.0100	0.0200	ug/L	1	0.500	---	69	25-140%	---	---	
alpha-BHC	0.425	0.0100	0.0200	"	"	"	---	85	60-130%	---	---	
beta-BHC	0.437	0.0100	0.0200	"	"	"	---	87	65-125%	---	---	
delta-BHC	0.482	0.0100	0.0200	"	"	"	---	96	45-135%	---	---	
gamma-BHC (Lindane)	0.418	0.0100	0.0200	"	"	"	---	84	25-135%	---	---	
cis-Chlordane	0.443	0.0100	0.0200	"	"	"	---	89	65-125%	---	---	
trans-Chlordane	0.441	0.0100	0.0200	"	"	"	---	88	60-125%	---	---	
4,4'-DDD	0.507	0.0100	0.0200	"	"	"	---	101	25-150%	---	---	
4,4'-DDE	0.473	0.0100	0.0200	"	"	"	---	95	35-140%	---	---	
4,4'-DDT	0.537	0.0100	0.0200	"	"	"	---	107	45-140%	---	---	Q-41
Dieldrin	0.460	0.0100	0.0200	"	"	"	---	92	60-130%	---	---	
Endosulfan I	0.450	0.0100	0.0200	"	"	"	---	90	50-110%	---	---	
Endosulfan II	0.468	0.0100	0.0200	"	"	"	---	94	30-130%	---	---	
Endosulfan sulfate	0.492	0.0100	0.0200	"	"	"	---	98	55-135%	---	---	
Endrin	0.498	0.0100	0.0200	"	"	"	---	100	"	---	---	
Endrin Aldehyde	0.451	0.0100	0.0200	"	"	"	---	90	"	---	---	
Endrin ketone	0.490	0.0100	0.0200	"	"	"	---	98	75-125%	---	---	
Heptachlor	0.381	0.0100	0.0200	"	"	"	---	76	40-130%	---	---	
Heptachlor epoxide	0.436	0.0100	0.0200	"	"	"	---	87	60-130%	---	---	
Methoxychlor	0.542	0.0300	0.0600	"	"	"	---	108	55-150%	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 61 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*94 %*	*30-135 %*			*"*					
LCS (4040212-BS2)					Prepared: 04/04/14 07:12	Analyzed: 04/10/14 20:27						**C-05**
EPA 8081B												
cis-Nonachlor	0.483	0.0100	0.0200	ug/L	1	0.500	---	97	25-120%	---	---	

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040212 - EPA 3510C (Neutral pH)/3640A (GPC)							**Water**					
LCS (4040212-BS2)					Prepared: 04/04/14 07:12		Analyzed: 04/10/14 20:27					**C-05**
2,4'-DDD	0.478	0.0100	0.0200	ug/L	"	"	---	96	30-135%	---	---	
2,4'-DDE	0.463	0.0100	0.0200	"	"	"	---	93	50-140%	---	---	
2,4'-DDT	0.527	0.0100	0.0200	"	"	"	---	105	45-140%	---	---	
Hexachlorobenzene	0.374	0.0300	0.0600	"	"	"	---	75	25-120%	---	---	
Hexachlorobutadiene	0.172	0.0100	0.0200	"	"	"	---	34	"	---	---	
Mirex	0.507	0.0100	0.0200	"	"	"	---	101	"	---	---	
Oxychlordane	0.431	0.0100	0.0200	"	"	"	---	86	"	---	---	
trans-Nonachlor	0.452	0.0100	0.0200	"	"	"	---	90	"	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 59 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*103 %*	*30-135 %*			*"*					
LCS Dup (4040212-BSD1)					Prepared: 04/04/14 07:12		Analyzed: 04/10/14 20:09					**C-05, Q-19**
EPA 8081B												
Aldrin	0.319	0.0100	0.0200	ug/L	1	0.500	---	64	25-140%	7	30%	
alpha-BHC	0.438	0.0100	0.0200	"	"	"	---	88	60-130%	3	30%	
beta-BHC	0.467	0.0100	0.0200	"	"	"	---	93	65-125%	7	30%	
delta-BHC	0.524	0.0100	0.0200	"	"	"	---	105	45-135%	8	30%	
gamma-BHC (Lindane)	0.441	0.0100	0.0200	"	"	"	---	88	25-135%	5	30%	
cis-Chlordane	0.471	0.0100	0.0200	"	"	"	---	94	65-125%	6	30%	
trans-Chlordane	0.475	0.0100	0.0200	"	"	"	---	95	60-125%	7	30%	
4,4'-DDD	0.552	0.0100	0.0200	"	"	"	---	110	25-150%	9	30%	
4,4'-DDE	0.517	0.0100	0.0200	"	"	"	---	103	35-140%	9	30%	
4,4'-DDT	0.608	0.0100	0.0200	"	"	"	---	122	45-140%	13	30%	Q-41
Dieldrin	0.502	0.0100	0.0200	"	"	"	---	100	60-130%	9	30%	
Endosulfan I	0.481	0.0100	0.0200	"	"	"	---	96	50-110%	7	30%	
Endosulfan II	0.523	0.0100	0.0200	"	"	"	---	105	30-130%	11	30%	
Endosulfan sulfate	0.557	0.0100	0.0200	"	"	"	---	111	55-135%	13	30%	
Endrin	0.565	0.0100	0.0200	"	"	"	---	113	"	13	30%	
Endrin Aldehyde	0.510	0.0100	0.0200	"	"	"	---	102	"	12	30%	
Endrin ketone	0.560	0.0100	0.0200	"	"	"	---	112	75-125%	13	30%	
Heptachlor	0.345	0.0100	0.0200	"	"	"	---	69	40-130%	10	30%	
Heptachlor epoxide	0.466	0.0100	0.0200	"	"	"	---	93	60-130%	7	30%	

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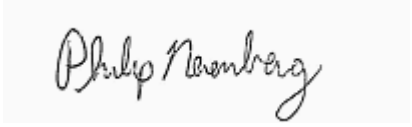

Philip Nerenberg, Lab Director

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040212 - EPA 3510C (Neutral pH)/3640A (GPC)							**Water**					
LCS Dup (4040212-BSD1)					Prepared: 04/04/14 07:12		Analyzed: 04/10/14 20:09					**C-05, Q-19**
Methoxychlor	0.627	0.0300	0.0600	"	"	"	---	125	55-150%	15	30%	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 51 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*101 %*	*30-135 %*			*"*					
LCS Dup (4040212-BSD2)					Prepared: 04/04/14 07:12		Analyzed: 04/10/14 20:44					**C-05, Q-19**
EPA 8081B												
cis-Nonachlor	0.475	0.0100	0.0200	ug/L	1	0.500	---	95	25-120%	2	30%	
2,4'-DDD	0.455	0.0100	0.0200	"	"	"	---	91	30-135%	5	30%	
2,4'-DDE	0.458	0.0100	0.0200	"	"	"	---	92	50-140%	1	30%	
2,4'-DDT	0.504	0.0100	0.0200	"	"	"	---	101	45-140%	4	30%	
Hexachlorobenzene	0.391	0.0300	0.0600	"	"	"	---	78	25-120%	4	30%	
Hexachlorobutadiene	0.288	0.0100	0.0200	"	"	"	---	58	"	50	30%	Q-24
Mirex	0.479	0.0100	0.0200	"	"	"	---	96	"	6	30%	
Oxychlordane	0.418	0.0100	0.0200	"	"	"	---	84	"	3	30%	
trans-Nonachlor	0.439	0.0100	0.0200	"	"	"	---	88	"	3	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 78 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*96 %*	*30-135 %*			*"*					

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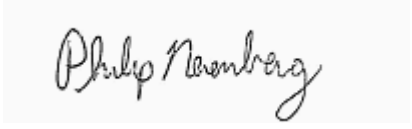

Philip Nerenberg, Lab Director

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040044 - EPA 3510C (Acid Extraction)							**Water**					
Blank (4040044-BLK2)					Prepared: 04/02/14 07:04 Analyzed: 04/02/14 15:50							
EPA 8270D												
Acenaphthene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benzo(b+k)fluoranthene(s)	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Chrysene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluoranthene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluorene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Naphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Phenanthrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Carbazole	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 78 %*	*Limits: 35-120 %*	*Dilution: 1x*	
2-Fluorobiphenyl (Surr)	*75 %*	*30-120 %*	*"*	
p-Terphenyl-d14 (Surr)	*81 %*	*50-125 %*	*"*	

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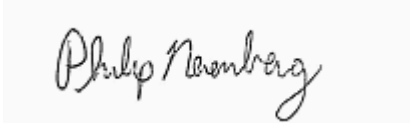

Philip Nerenberg, Lab Director

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040044 - EPA 3510C (Acid Extraction)							**Water**					
LCS (4040044-BS2)					Prepared: 04/02/14 07:04 Analyzed: 04/02/14 16:31							
EPA 8270D												
Acenaphthene	3.06	0.0100	0.0200	ug/L	1	4.00	---	77	45-125%	---	---	
Acenaphthylene	3.01	0.0100	0.0200	"	"	"	---	75	50-125%	---	---	
Anthracene	3.19	0.0100	0.0200	"	"	"	---	80	55-125%	---	---	
Benz(a)anthracene	3.58	0.0100	0.0200	"	"	"	---	89	"	---	---	
Benzo(a)pyrene	4.07	0.0100	0.0200	"	"	"	---	102	"	---	---	
Benzo(b)fluoranthene	4.02	0.0100	0.0200	"	"	"	---	101	45-125%	---	---	
Benzo(k)fluoranthene	3.85	0.0100	0.0200	"	"	"	---	96	"	---	---	
Benzo(b+k)fluoranthene(s)	7.85	0.0200	0.0400	"	"	8.00	---	98	"	---	---	
Benzo(g,h,i)perylene	3.84	0.0100	0.0200	"	"	4.00	---	96	40-125%	---	---	
Chrysene	3.69	0.0100	0.0200	"	"	"	---	92	55-125%	---	---	
Dibenz(a,h)anthracene	3.76	0.0100	0.0200	"	"	"	---	94	40-125%	---	---	
Fluoranthene	3.38	0.0100	0.0200	"	"	"	---	84	55-125%	---	---	
Fluorene	3.08	0.0100	0.0200	"	"	"	---	77	50-125%	---	---	
Indeno(1,2,3-cd)pyrene	3.74	0.0100	0.0200	"	"	"	---	93	45-125%	---	---	
1-Methylnaphthalene	2.82	0.0200	0.0400	"	"	"	---	71	45-120%	---	---	
2-Methylnaphthalene	2.86	0.0200	0.0400	"	"	"	---	72	"	---	---	
Naphthalene	2.61	0.0200	0.0400	"	"	"	---	65	40-125%	---	---	
Phenanthrene	3.18	0.0100	0.0200	"	"	"	---	79	50-125%	---	---	
Pyrene	3.34	0.0100	0.0200	"	"	"	---	84	"	---	---	
Carbazole	3.42	0.0150	0.0300	"	"	"	---	86	"	---	---	
Dibenzofuran	3.02	0.0100	0.0200	"	"	"	---	75	55-125%	---	---	
Bis(2-ethylhexyl)phthalate	3.86	0.250	0.500	"	"	"	---	96	40-125%	---	---	
Butyl benzyl phthalate	3.84	0.250	0.500	"	"	"	---	96	45-125%	---	---	
Diethylphthalate	3.36	0.250	0.500	"	"	"	---	84	40-125%	---	---	
Dimethylphthalate	3.40	0.250	0.500	"	"	"	---	85	25-125%	---	---	
Di-n-butylphthalate	3.48	0.250	0.500	"	"	"	---	87	55-125%	---	---	
Di-n-octyl phthalate	3.88	0.250	0.500	"	"	"	---	97	35-125%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 74 %*	*Limits: 35-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*72 %*	*30-120 %*	*"*
p-Terphenyl-d14 (Surr)	*84 %*	*50-125 %*	*"*

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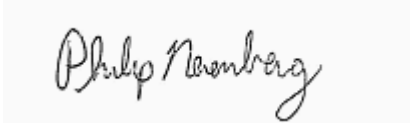

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040044 - EPA 3510C (Acid Extraction)							**Water**					
LCS Dup (4040044-BSD2)					Prepared: 04/02/14 07:04 Analyzed: 04/02/14 17:11							**Q-19**
EPA 8270D												
Acenaphthene	3.01	0.0100	0.0200	ug/L	1	4.00	---	75	45-125%	2	30%	
Acenaphthylene	2.96	0.0100	0.0200	"	"	"	---	74	50-125%	2	30%	
Anthracene	3.28	0.0100	0.0200	"	"	"	---	82	55-125%	3	30%	
Benz(a)anthracene	3.72	0.0100	0.0200	"	"	"	---	93	"	4	30%	
Benzo(a)pyrene	4.20	0.0100	0.0200	"	"	"	---	105	"	3	30%	
Benzo(b)fluoranthene	4.21	0.0100	0.0200	"	"	"	---	105	45-125%	4	30%	
Benzo(k)fluoranthene	3.99	0.0100	0.0200	"	"	"	---	100	"	4	30%	
Benzo(b+k)fluoranthene(s)	8.18	0.0200	0.0400	"	"	8.00	---	102	"	4	30%	
Benzo(g,h,i)perylene	4.04	0.0100	0.0200	"	"	4.00	---	101	40-125%	5	30%	
Chrysene	3.91	0.0100	0.0200	"	"	"	---	98	55-125%	6	30%	
Dibenz(a,h)anthracene	3.89	0.0100	0.0200	"	"	"	---	97	40-125%	3	30%	
Fluoranthene	3.57	0.0100	0.0200	"	"	"	---	89	55-125%	6	30%	
Fluorene	3.04	0.0100	0.0200	"	"	"	---	76	50-125%	1	30%	
Indeno(1,2,3-cd)pyrene	3.93	0.0100	0.0200	"	"	"	---	98	45-125%	5	30%	
1-Methylnaphthalene	2.87	0.0200	0.0400	"	"	"	---	72	45-120%	2	30%	
2-Methylnaphthalene	2.92	0.0200	0.0400	"	"	"	---	73	"	2	30%	
Naphthalene	2.66	0.0200	0.0400	"	"	"	---	66	40-125%	2	30%	
Phenanthrene	3.22	0.0100	0.0200	"	"	"	---	80	50-125%	1	30%	
Pyrene	3.49	0.0100	0.0200	"	"	"	---	87	"	4	30%	
Carbazole	3.60	0.0150	0.0300	"	"	"	---	90	"	5	30%	
Dibenzofuran	2.99	0.0100	0.0200	"	"	"	---	75	55-125%	1	30%	
Bis(2-ethylhexyl)phthalate	4.15	0.250	0.500	"	"	"	---	104	40-125%	7	30%	
Butyl benzyl phthalate	4.04	0.250	0.500	"	"	"	---	101	45-125%	5	30%	
Diethylphthalate	3.43	0.250	0.500	"	"	"	---	86	40-125%	2	30%	
Dimethylphthalate	3.40	0.250	0.500	"	"	"	---	85	25-125%	0.09	30%	
Di-n-butylphthalate	3.62	0.250	0.500	"	"	"	---	91	55-125%	4	30%	
Di-n-octyl phthalate	4.07	0.250	0.500	"	"	"	---	102	35-125%	5	30%	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 70 %*	*Limits: 35-120 %*	*Dilution: 1x*	
2-Fluorobiphenyl (Surr)	*70 %*	*30-120 %*	*"*	
p-Terphenyl-d14 (Surr)	*85 %*	*50-125 %*	*"*	

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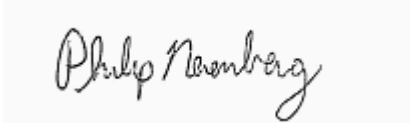

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040120 - EPA 3510C (Acid Extraction)							**Water**					
Blank (4040120-BLK1)					Prepared: 04/04/14 07:09 Analyzed: 04/04/14 13:45							
EPA 8270D												
Acenaphthene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(b+k)fluoranthene(s)	ND	0.0273	0.0545	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Chrysene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluoranthene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluorene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Naphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Phenanthrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Carbazole	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 64 %*	*Limits: 35-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*58 %*	*30-120 %*	*"*
p-Terphenyl-d14 (Surr)	*69 %*	*50-125 %*	*"*

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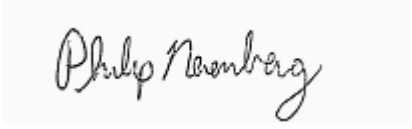

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040120 - EPA 3510C (Acid Extraction)							**Water**					
LCS (4040120-BS1)					Prepared: 04/04/14 07:09 Analyzed: 04/04/14 14:29							
EPA 8270D												
Acenaphthene	2.63	0.0100	0.0200	ug/L	1	4.00	---	66	45-125%	---	---	
Acenaphthylene	2.62	0.0100	0.0200	"	"	"	---	66	50-125%	---	---	
Anthracene	2.92	0.0100	0.0200	"	"	"	---	73	55-125%	---	---	
Benz(a)anthracene	3.22	0.0100	0.0200	"	"	"	---	80	"	---	---	
Benzo(a)pyrene	3.64	0.0150	0.0300	"	"	"	---	91	"	---	---	
Benzo(b)fluoranthene	3.73	0.0150	0.0300	"	"	"	---	93	45-125%	---	---	
Benzo(k)fluoranthene	3.14	0.0150	0.0300	"	"	"	---	79	"	---	---	
Benzo(b+k)fluoranthene(s)	7.01	0.0300	0.0600	"	"	8.00	---	88	"	---	---	
Benzo(g,h,i)perylene	3.46	0.0100	0.0200	"	"	4.00	---	87	40-125%	---	---	
Chrysene	3.34	0.0100	0.0200	"	"	"	---	84	55-125%	---	---	
Dibenz(a,h)anthracene	3.39	0.0100	0.0200	"	"	"	---	85	40-125%	---	---	
Fluoranthene	3.11	0.0100	0.0200	"	"	"	---	78	55-125%	---	---	
Fluorene	2.81	0.0100	0.0200	"	"	"	---	70	50-125%	---	---	
Indeno(1,2,3-cd)pyrene	3.39	0.0100	0.0200	"	"	"	---	85	45-125%	---	---	
1-Methylnaphthalene	2.30	0.0200	0.0400	"	"	"	---	57	45-120%	---	---	
2-Methylnaphthalene	2.26	0.0200	0.0400	"	"	"	---	56	"	---	---	
Naphthalene	2.07	0.0200	0.0400	"	"	"	---	52	40-125%	---	---	
Phenanthrene	2.86	0.0100	0.0200	"	"	"	---	71	50-125%	---	---	
Pyrene	3.07	0.0100	0.0200	"	"	"	---	77	"	---	---	
Carbazole	3.12	0.0150	0.0300	"	"	"	---	78	"	---	---	
Dibenzofuran	2.69	0.0100	0.0200	"	"	"	---	67	55-125%	---	---	
Bis(2-ethylhexyl)phthalate	3.49	0.250	0.500	"	"	"	---	87	40-125%	---	---	
Butyl benzyl phthalate	3.37	0.250	0.500	"	"	"	---	84	45-125%	---	---	
Diethylphthalate	3.22	0.250	0.500	"	"	"	---	80	40-125%	---	---	
Dimethylphthalate	3.30	0.250	0.500	"	"	"	---	83	25-125%	---	---	
Di-n-butylphthalate	3.25	0.250	0.500	"	"	"	---	81	55-125%	---	---	
Di-n-octyl phthalate	3.45	0.250	0.500	"	"	"	---	86	35-125%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 65 %*	*Limits: 35-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*62 %*	*30-120 %*	*"*
p-Terphenyl-d14 (Surr)	*74 %*	*50-125 %*	*"*

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040120 - EPA 3510C (Acid Extraction)							**Water**					
LCS Dup (4040120-BSD1)					Prepared: 04/04/14 07:09 Analyzed: 04/04/14 15:13							**Q-19**
EPA 8270D												
Acenaphthene	2.62	0.0100	0.0200	ug/L	1	4.00	---	66	45-125%	0.4	30%	
Acenaphthylene	2.55	0.0100	0.0200	"	"	"	---	64	50-125%	3	30%	
Anthracene	2.91	0.0100	0.0200	"	"	"	---	73	55-125%	0.6	30%	
Benz(a)anthracene	3.32	0.0100	0.0200	"	"	"	---	83	"	3	30%	
Benzo(a)pyrene	3.80	0.0150	0.0300	"	"	"	---	95	"	4	30%	
Benzo(b)fluoranthene	3.71	0.0150	0.0300	"	"	"	---	93	45-125%	0.6	30%	
Benzo(k)fluoranthene	3.59	0.0150	0.0300	"	"	"	---	90	"	13	30%	
Benzo(b+k)fluoranthene(s)	7.28	0.0300	0.0600	"	"	8.00	---	91	"	4	30%	
Benzo(g,h,i)perylene	3.59	0.0100	0.0200	"	"	4.00	---	90	40-125%	3	30%	
Chrysene	3.42	0.0100	0.0200	"	"	"	---	86	55-125%	2	30%	
Dibenz(a,h)anthracene	3.49	0.0100	0.0200	"	"	"	---	87	40-125%	3	30%	
Fluoranthene	3.15	0.0100	0.0200	"	"	"	---	79	55-125%	1	30%	
Fluorene	2.73	0.0100	0.0200	"	"	"	---	68	50-125%	3	30%	
Indeno(1,2,3-cd)pyrene	3.46	0.0100	0.0200	"	"	"	---	87	45-125%	2	30%	
1-Methylnaphthalene	2.36	0.0200	0.0400	"	"	"	---	59	45-120%	3	30%	
2-Methylnaphthalene	2.31	0.0200	0.0400	"	"	"	---	58	"	3	30%	
Naphthalene	2.11	0.0200	0.0400	"	"	"	---	53	40-125%	2	30%	
Phenanthrene	2.89	0.0100	0.0200	"	"	"	---	72	50-125%	1	30%	
Pyrene	3.10	0.0100	0.0200	"	"	"	---	77	"	0.9	30%	
Carbazole	3.16	0.0150	0.0300	"	"	"	---	79	"	1	30%	
Dibenzofuran	2.63	0.0100	0.0200	"	"	"	---	66	55-125%	2	30%	
Bis(2-ethylhexyl)phthalate	3.67	0.250	0.500	"	"	"	---	92	40-125%	5	30%	
Butyl benzyl phthalate	3.50	0.250	0.500	"	"	"	---	87	45-125%	4	30%	
Diethylphthalate	3.10	0.250	0.500	"	"	"	---	77	40-125%	4	30%	
Dimethylphthalate	3.10	0.250	0.500	"	"	"	---	77	25-125%	6	30%	
Di-n-butylphthalate	3.28	0.250	0.500	"	"	"	---	82	55-125%	0.8	30%	
Di-n-octyl phthalate	3.66	0.250	0.500	"	"	"	---	92	35-125%	6	30%	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 61 %*	*Limits: 35-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*60 %*	*30-120 %*	*"*
p-Terphenyl-d14 (Surr)	*77 %*	*50-125 %*	*"*

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Philip Nerenberg, Lab Director

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040357 - EPA 3015A							**Water**					
Blank (4040357-BLK1)					Prepared: 04/14/14 08:21 Analyzed: 04/14/14 13:12							
EPA 6020A												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Antimony	ND	1.00	2.00	"	"	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	0.0400	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (4040357-BS1)					Prepared: 04/14/14 08:21 Analyzed: 04/14/14 13:15							
EPA 6020A												
Aluminum	5530	25.0	50.0	ug/L	1	5560	---	100	80-120%	---	---	
Antimony	27.8	1.00	2.00	"	"	27.8	---	100	"	---	---	
Arsenic	54.6	0.500	1.00	"	"	55.6	---	98	"	---	---	
Cadmium	54.0	0.0400	0.200	"	"	"	---	97	"	---	---	
Chromium	56.4	0.500	1.00	"	"	"	---	102	"	---	---	
Copper	53.7	0.500	1.00	"	"	"	---	97	"	---	---	
Lead	54.3	0.100	0.200	"	"	"	---	98	"	---	---	
Manganese	55.8	0.500	1.00	"	"	"	---	100	"	---	---	
Mercury	1.11	0.0400	0.0800	"	"	1.11	---	100	"	---	---	
Nickel	56.2	0.500	1.00	"	"	55.6	---	101	"	---	---	
Silver	27.9	0.100	0.200	"	"	27.8	---	100	"	---	---	
Zinc	52.4	2.00	4.00	"	"	55.6	---	94	"	---	---	
Duplicate (4040357-DUP1)					Prepared: 04/14/14 08:21 Analyzed: 04/14/14 13:30							
QC Source Sample: B22-SWDP-20140328 (A4C0830-01)												
EPA 6020A												

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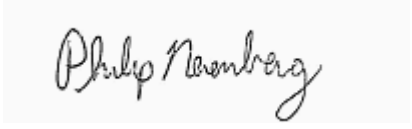

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040357 - EPA 3015A							**Water**					
Duplicate (4040357-DUP1)					Prepared: 04/14/14 08:21		Analyzed: 04/14/14 13:30					
QC Source Sample: B22-SWDP-20140328 (A4C0830-01)												
Aluminum	**978**	25.0	50.0	ug/L	1	---	965	---	---	1	20%	
Antimony	**2.04**	1.00	2.00	"	"	---	2.16	---	---	5	20%	
Arsenic	**2.32**	0.500	1.00	"	"	---	2.31	---	---	0.5	20%	
Cadmium	**0.267**	0.0400	0.200	"	"	---	0.256	---	---	4	20%	
Chromium	**3.54**	0.500	1.00	"	"	---	3.38	---	---	5	20%	
Copper	**38.2**	0.500	1.00	"	"	---	38.0	---	---	0.4	20%	
Lead	**14.2**	0.100	0.200	"	"	---	14.3	---	---	0.5	20%	
Manganese	**211**	0.500	1.00	"	"	---	206	---	---	3	20%	
Mercury	ND	0.0400	0.0800	"	"	---	ND	---	---	---	20%	
Nickel	**7.24**	0.500	1.00	"	"	---	7.13	---	---	2	20%	
Silver	ND	0.100	0.200	"	"	---	ND	---	---	---	20%	
Zinc	**382**	2.00	4.00	"	"	---	378	---	---	1	20%	
Matrix Spike (4040357-MS1)					Prepared: 04/14/14 08:21		Analyzed: 04/14/14 13:39					
QC Source Sample: B22-SWDP-20140328 (A4C0830-01)												
EPA 6020A												
Aluminum	6280	25.0	50.0	ug/L	1	5560	965	96	75-125%	---	---	
Antimony	29.2	1.00	2.00	"	"	27.8	2.16	97	"	---	---	
Arsenic	56.0	0.500	1.00	"	"	55.6	2.31	97	"	---	---	
Cadmium	55.6	0.0400	0.200	"	"	"	0.256	100	"	---	---	
Chromium	58.9	0.500	1.00	"	"	"	3.38	100	"	---	---	
Copper	91.0	0.500	1.00	"	"	"	38.0	95	"	---	---	
Lead	68.3	0.100	0.200	"	"	"	14.3	97	"	---	---	
Manganese	262	0.500	1.00	"	"	"	206	102	"	---	---	
Mercury	1.11	0.0400	0.0800	"	"	1.11	ND	100	"	---	---	
Nickel	63.1	0.500	1.00	"	"	55.6	7.13	101	"	---	---	
Silver	28.2	0.100	0.200	"	"	27.8	ND	101	"	---	---	
Zinc	417	2.00	4.00	"	"	55.6	378	71	"	---	---	Q-03
Post Spike (4040357-PS1)					Prepared: 04/15/14 16:25		Analyzed: 04/15/14 16:34					

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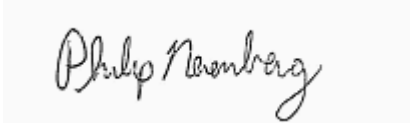

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040357 - EPA 3015A							**Water**					
Post Spike (4040357-PS1)					Prepared: 04/15/14 16:25 Analyzed: 04/15/14 16:34							
QC Source Sample: B22-SWDP-20140328 (A4C0830-01)												
EPA 6020A												
Zinc	355			ug/L	1	39.8	339	40	80-120%		---	PS-02

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040312 - EPA 3015A - Dissolved							**Water**					
Blank (4040312-BLK1)					Prepared: 04/11/14 08:35 Analyzed: 04/11/14 14:20							
EPA 6020A (Diss)												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Antimony	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	0.0400	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (4040312-BS1)					Prepared: 04/11/14 08:35 Analyzed: 04/11/14 14:23							
EPA 6020A (Diss)												
Aluminum	5220	25.0	50.0	ug/L	1	5560	---	94	80-120%	---	---	
Antimony	26.2	0.500	1.00	"	"	27.8	---	94	"	---	---	
Arsenic	52.4	0.500	1.00	"	"	55.6	---	94	"	---	---	
Cadmium	53.7	0.0400	0.200	"	"	"	---	97	"	---	---	
Chromium	51.9	0.500	1.00	"	"	"	---	93	"	---	---	
Copper	53.0	0.500	1.00	"	"	"	---	95	"	---	---	
Lead	57.2	0.100	0.200	"	"	"	---	103	"	---	---	
Manganese	55.5	0.500	1.00	"	"	"	---	100	"	---	---	
Mercury	1.08	0.0400	0.0800	"	"	1.11	---	98	"	---	---	
Nickel	52.1	0.500	1.00	"	"	55.6	---	94	"	---	---	
Silver	27.1	0.100	0.200	"	"	27.8	---	98	"	---	---	
Zinc	51.6	2.00	4.00	"	"	55.6	---	93	"	---	---	

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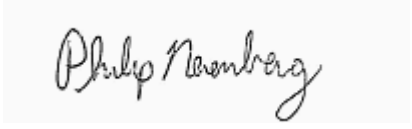

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040096 - Total Suspended Solids									Water			
Blank (4040096-BLK1)					Prepared: 04/03/14 12:18		Analyzed: 04/03/14 17:10					
SM 2540 D												
Total Suspended Solids	ND	2.00	2.00	mg/L	1	---	---	---	---	---	---	
Reference (4040096-SRM1)					Prepared: 04/03/14 12:18		Analyzed: 04/03/14 17:10					
SM 2540 D												
Total Suspended Solids	96.0			mg/L	1	100		96	90-110%	---	---	

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040129 - Total Suspended Solids									Water			
Blank (4040129-BLK1)					Prepared: 04/04/14 10:32		Analyzed: 04/07/14 10:55					
SM 2540 D												
Total Suspended Solids	ND	2.00	2.00	mg/L	1	---	---	---	---	---	---	
Duplicate (4040129-DUP1)					Prepared: 04/04/14 10:32		Analyzed: 04/07/14 10:55					
QC Source Sample: B20-SP1-20140328 (A4C0830-02)												
SM 2540 D												
Total Suspended Solids	**52.0**	5.00	5.00	mg/L	1	---	53.0	---	---	2	20%	
Reference (4040129-SRM1)					Prepared: 04/04/14 10:32		Analyzed: 04/07/14 10:55					
SM 2540 D												
Total Suspended Solids	96.0			mg/L	1	100		96	90-110%	---	---	

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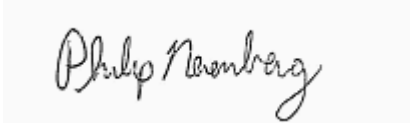

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040130 - Method Prep: Aq							**Water**					
Blank (4040130-BLK1)					Prepared: 04/04/14 09:33		Analyzed: 04/04/14 11:54					
SM 5310 B												
Total Organic Carbon	ND	1.00	1.00	mg/L	1	---	---	---	---	---	---	
LCS (4040130-BS1)					Prepared: 04/04/14 09:33		Analyzed: 04/04/14 12:17					
SM 5310 B												
Total Organic Carbon	8.82	1.00	1.00	mg/L	1	10.0	---	88	85-115%	---	---	
Duplicate (4040130-DUP1)					Prepared: 04/04/14 09:33		Analyzed: 04/04/14 13:11					
QC Source Sample: B22-SWDP-20140328 (A4C0830-01)												
SM 5310 B												
Total Organic Carbon	**14.4**	1.00	1.00	mg/L	1	---	14.2	---	---	1	20%	
Matrix Spike (4040130-MS1)					Prepared: 04/04/14 09:33		Analyzed: 04/04/14 13:39					
QC Source Sample: B22-SWDP-20140328 (A4C0830-01)												
SM 5310 B												
Total Organic Carbon	28.2	2.02	2.02	mg/L	2	10.0	14.2	140	75-125%	---	---	Q-01

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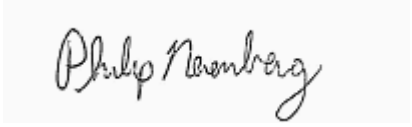

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4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

SAMPLE PREPARATION INFORMATION

Diesel and Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040085							
A4C0830-01RE1	Water	NWTPH-Dx	03/28/14 12:10	04/03/14 08:38	1060mL/5mL	1000mL/5mL	0.94
Batch: 4040249							
A4C0830-02RE1	Water	NWTPH-Dx	03/28/14 08:55	04/09/14 09:48	1050mL/5mL	1000mL/5mL	0.95

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040053							
A4C0830-01	Water	NWTPH-Gx (MS)	03/28/14 12:10	04/02/14 14:35	5mL/5mL	5mL/5mL	1.00
Batch: 4040091							
A4C0830-02	Water	NWTPH-Gx (MS)	03/28/14 08:55	04/03/14 14:10	5mL/5mL	5mL/5mL	1.00

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3510C (Neutral pH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040202							
A4C0830-01	Water	EPA 8082A	03/28/14 12:10	04/08/14 06:57	1050mL/1mL	1000mL/1mL	0.95
A4C0830-02	Water	EPA 8082A	03/28/14 08:55	04/08/14 06:57	1060mL/1mL	1000mL/1mL	0.94

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3510C (Neutral pH)/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040212							
A4C0830-01RE1	Water	EPA 8081B	03/28/14 12:10	04/04/14 07:12	1040mL/10mL	1000mL/5mL	1.92
A4C0830-02RE1	Water	EPA 8081B	03/28/14 08:55	04/04/14 07:12	1050mL/10mL	1000mL/5mL	1.90

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040044							
A4C0830-01RE1	Water	EPA 8270D	03/28/14 12:10	04/02/14 13:51	1050mL/1mL	1000mL/1mL	0.95
Batch: 4040120							

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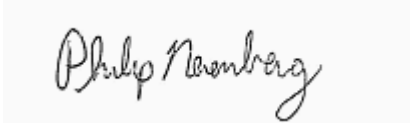

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

SAMPLE PREPARATION INFORMATION

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A4C0830-02RE1	Water	EPA 8270D	03/28/14 08:55	04/04/14 07:09	1060mL/1mL	1000mL/1mL	0.94

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040357							
A4C0830-01	Water	EPA 6020A	03/28/14 12:10	04/14/14 08:21	45mL/50mL	45mL/50mL	1.00
A4C0830-02	Water	EPA 6020A	03/28/14 08:55	04/14/14 08:21	45mL/50mL	45mL/50mL	1.00

Dissolved Metals by EPA 6020 (ICPMS)

Prep: EPA 3015A - Dissolved

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040312							
A4C0830-01	Water	EPA 6020A (Diss)	03/28/14 12:10	04/11/14 08:35	45mL/50mL	45mL/50mL	1.00
A4C0830-02	Water	EPA 6020A (Diss)	03/28/14 08:55	04/11/14 08:35	45mL/50mL	45mL/50mL	1.00

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040130							
A4C0830-01	Water	SM 5310 B	03/28/14 12:10	04/04/14 09:33	40mL/40mL	1mL/1mL	1.00
A4C0830-02	Water	SM 5310 B	03/28/14 08:55	04/04/14 09:33	40mL/40mL	1mL/1mL	1.00

Prep: Total Suspended Solids

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040096							
A4C0830-01	Water	SM 2540 D	03/28/14 12:10	04/03/14 12:18	1N/A/1N/A	1N/A/1N/A	NA
Batch: 4040129							
A4C0830-02	Water	SM 2540 D	03/28/14 08:55	04/04/14 10:32	1N/A/1N/A	1N/A/1N/A	NA

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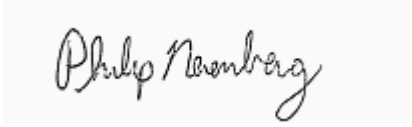


Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

Notes and Definitions

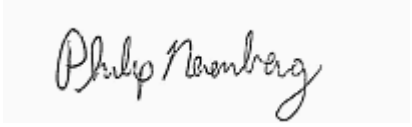
Qualifiers:

C-05	Extract has undergone a GPC (Gel-Permeation Chromotography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
F-03	The result for this hydrocarbon range is elevated due to the presence of individual analyte peaks in the quantitation range that are not representative of the fuel pattern reported.
F-12	The result for this hydrocarbon range is primarily due to the presence of individual analyte peaks in the quantitation range. No fuel pattern detected.
F-15	Results for diesel are estimated due to overlap from the reported oil result.
J	Estimated Result . Result detected below the lowest point of the calibration curve, but above the specified MDL.
PS-02	Post Spike Failed. Serial dilution test performed on the source sample was acceptable. Data quality not affected.
Q-01	Spike recovery and/or RPD is outside acceptance limits.
Q-03	Spike recovery and/or RPD is outside control limits due to the high concentration of analyte present in the sample.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-24	RPD for spike and spike duplicate is above established control limit. Recoveries for both spike and spike duplicate are within control limits.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53

Blank Policy

Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.

For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.

Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

***

Used to indicate a possible discrepency with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Labs

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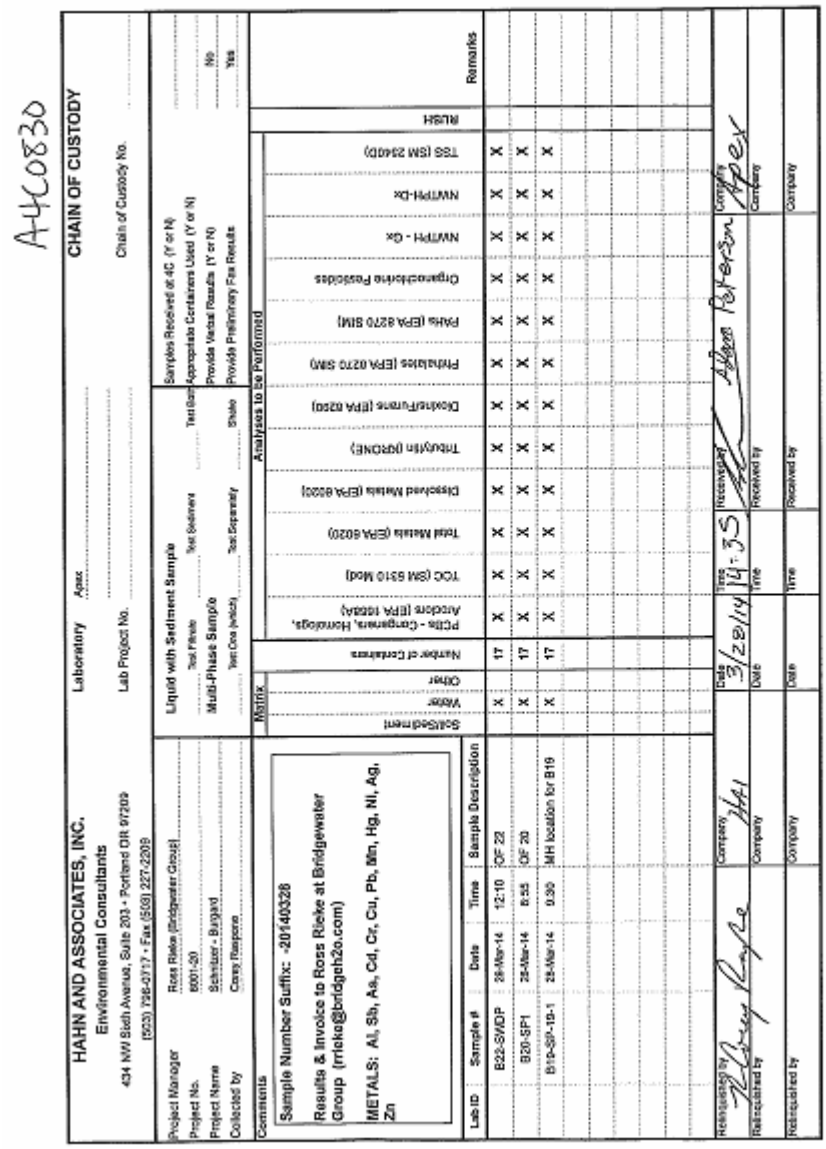
Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:53



A4C0830

HAHN AND ASSOCIATES, INC.
Environmental Consultants
434 NW Sixth Avenue, Suite 203 • Portland OR 97209
(503) 798-0717 • Fax (503) 227-2209

CHAIN OF CUSTODY

Laboratory: Apex
Lab Project No.:
Chain of Custody No.:

Project Manager: Ross Rieke (Bridgewater Group)
Project No.: 8001-20
Project Name: Schnitzer - Burgard
Collected by: Corey Raspone

Liquid with Sediment Sample — Test Filtrate / Test Sediment / Test Both
Multi-Phase Sample — Test One (which) / Test Separately / Shake

Samples Received at 4C (Y or N)
Appropriate Containers Used (Y or N)
Provide Verbal Results (Y or N) — No
Provide Preliminary Fax Results — Yes

Comments

Sample Number Suffix: -20140328

Results & Invoice to Ross Rieke at Bridgewater Group (rrieke@bridgeh2o.com)

METALS: Al, Sb, As, Cd, Cr, Cu, Pb, Mn, Hg, Ni, Ag, Zn

Analyses to be Performed

Lab ID	Sample #	Date	Time	Sample Description	Soil/Sediment	Water	Other	Number of Containers	PCBs - Congeners, Homologs, Aroclors (EPA 1668A)	TOC (SM 5310 Mod)	Total Metals (EPA 6020)	Dissolved Metals (EPA 6020)	Tributyltin (ORONE)	Dioxins/Furans (EPA 8290)	Phthalates (EPA 8270 SIM)	PAHs (EPA 8270 SIM)	Organochlorine Pesticides	NWTPH - Gx	NWTPH-Dx	TSS (SM 2540D)	RUSH	Remarks
	B22-SWDP	28-Mar-14	12:10	OF 22		X		17	X	X	X	X	X	X	X	X	X	X	X	X		
	B20-SP1	28-Mar-14	8:55	OF 20		X		17	X	X	X	X	X	X	X	X	X	X	X	X		
	B19-SP-19-1	28-Mar-14	9:30	MH location for B19		X		17	X	X	X	X	X	X	X	X	X	X	X	X		

Relinquished by: Corey Raspone	Company: HAI	Date: 3/28/14	Time: 14:35	Received by: Adam Peterson	Company: Apex
Relinquished by:	Company:	Date:	Time:	Received by:	Company:
Relinquished by:	Company:	Date:	Time:	Received by:	Company:

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

April 22, 2014

Philip Nerenberg
Apex Laboratories
12232 SW Garden Place
Tigard, OR 97223

Client Project: A4C0830
ARI Job No.: YG01

Dear Mr. Nerenberg:

Please find enclosed the original Chain of Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above.

Sample receipt information and analytical details are addressed in the Case Narrative.

An electronic copy of this report and all supporting raw data will be kept on file at ARI. Should you have any questions or concerns, please feel free to call me at your convenience.

Respectfully,
ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile: YG01

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

KH 4/4/14

SUBCONTRACT ORDER

Apex Laboratories

A4C0830

YG01

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Analytical Resources, INC
4611 S. 134th Place
Tukwila, WA 98168
Phone :(206) 695-6200
Fax: (206) 695-6201

OF 22 cc 4/4/14

Sample Name: B22-SWDP-20140328 Water **Sampled: 03/28/14 12:10** (A4C0830-01)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	04/11/14 17:00	04/11/14 12:10	Krone--ARI
Containers Supplied:			
(L)1 L Amber Glass - Non Preserved			
(M)1 L Amber Glass - Non Preserved			

already Rec'd

OF 20

Sample Name: B20-SP1-20140328 Water **Sampled: 03/28/14 08:55** (A4C0830-02)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	04/11/14 17:00	04/11/14 08:55	Krone--ARI
Containers Supplied:			
(N)1 L Amber Glass - Non Preserved			
(O)1 L Amber Glass - Non Preserved			

Std TAT.
Watch hold

4/7/14

Released By	Date	Received By	Date
UPS (Shipper)		UPS (Shipper)	
			4/8/14 1050
Released By	Date	Received By	Date

YG01 : 00002

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Apex

Project Name: A4C0830

COC No(s): NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other:

Assigned ARI Job No: YG01

Tracking No: J235170454 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler? YES NO

Were custody papers included with the cooler? YES NO

Were custody papers properly filled out (ink, signed, etc.) YES NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) 4.0

Time: 1030

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 12241 2224

Cooler Accepted by: AV Date: 4/10/14 Time: 1030

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler? YES NO

What kind of packing material was used? Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other:

Was sufficient ice used (if appropriate)? NA YES NO

Were all bottles sealed in individual plastic bags? YES NO

Did all bottles arrive in good condition (unbroken)? YES NO

Were all bottle labels complete and legible? YES NO

Did the number of containers listed on COC match with the number of containers received? YES NO

Did all bottle labels and tags agree with custody papers? YES NO

Were all bottles used correct for the requested analyses? YES NO

Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs). NA YES NO

Were all VOC vials free of air bubbles? NA YES NO

Was sufficient amount of sample sent in each bottle? YES NO

Date VOC Trip Blank was made at ARI NA

Was Sample Split by ARI: NA YES Date/Time: Equipment: Split by:

Samples Logged by JM Date: 4/10/14 Time: 1053

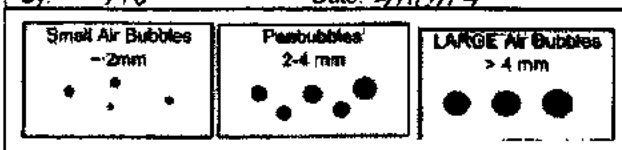
***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

No CoC received. Cooler #2 for samples received 4/8/14 @ 1050 Shipping (orig) lost, UPS called 4/9/14, and we determined these were the missing Apex samples.

By: AV Date: 4/10/14



Small → "sm" (< 2 mm)	
Peabubbles → "pb" (2 to < 4 mm)	
Large → "lg" (4 to < 6 mm)	
Headspace → "hs" (> 6 mm)	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: APEX Project Name: A4C030

COC No(s): _____ (NA) Delivered by: Fed-Ex (UPS) Courier Hand Delivered Other: _____

Assigned ARI Job No: YG01 Tracking No: 1ZX472OR1391869547 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6 0 °C for chemistry): 1.7

Time: _____

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 12241222

Cooler Accepted by: JM Date: 4/8/14 Time: 1050

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		(YES)	NO
What kind of packing material was used?	(Bubble Wrap) (Wet Ice) Gel Packs Baggies Foam Block Paper Other: _____		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		(YES)	(NO) JM
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		YES	(NO)
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs).	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI	(NA)		

Was Sample Split by ARI: (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JM Date: 4/10/14 Time: 1053

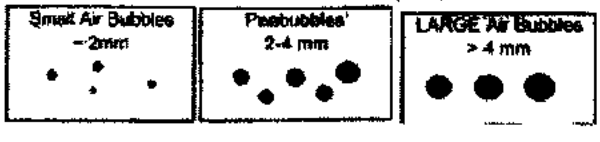
***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

Only one of four waters was received. Second cooler received on 4/10/14.

By: JM Date: 4/10/14



Small → "sm"	(< 2 mm)
Peabubbles → "pb"	(2 to < 4 mm)
Large → "lg"	(4 to < 6 mm)
Headspace → "hs"	(> 6 mm)

Samples received on 4/8/14	**# of 1 Liter Amber Glass Bottles**
B20-SP1-20140328	1
B21-SWP6-20140328	2

Samples received on 4/10/14	
B21-SWP3-20140328	2
B21-SWP2-20140328	2
B21-SWP1-20140328	2
B20-SP1-20140328	1

YG01 · 00005

Case Narrative

Client: Apex Laboratories
Project: A4C0830
Job No.: YG01

Sample Receipt

Analytical Resources, Inc. (ARI) accepted one water sample on April 8, 2014 under ARI job YG01. The cooler temperature measured by IR thermometer following ARI SOP was 4.0°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

The sample was analyzed for parameters as requested on the COC.

Butyltins by SW8270-SIM

The sample was extracted and analyzed outside the recommended holding time.

There were no other irregularities with this analysis.

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: YG01
Client: Apex Labs
Project Event: N/A
Project Name: A4C0830

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	B20-SP1-20140328	YG01A	14-6672	Water	03/28/14 12:10	04/08/14 10:50

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by SW8270D-SIM GC/MS **Sample ID: B20-SP1-20140328**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: YG01A
LIMS ID: 14-6672
Matrix: Water
Data Release Authorized:
Reported: 04/22/14

QC Report No: YG01-Apex Labs
Project: A4C0830
Event: NA
Date Sampled: 03/28/14
Date Received: 04/08/14

Date Extracted: 04/11/14
Date Analyzed: 04/19/14 12:32
Instrument/Analyst: NT12/VTS

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	75.4%
Tripentyl Tin Chloride	71.4%

ANALYTICAL RESOURCES INCORPORATED

TBT SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YG01-Apex Labs
Project: A4C0830
Event: NA

Client ID	TPRT	TPNT	TOT OUT
MB-041114	66.4%	66.8%	0
LCS-041114	79.3%	76.6%	0
LCSD-041114	68.6%	72.8%	0
B20-SP1-20140328	75.4%	71.4%	0

	QC LIMITS
(TPRT) = Tripropyl Tin Chloride	(30-120)
(TPNT) = Tripentyl Tin Chloride	(45-120)

Prep Method: SW3510C
Analytical Method: TBT (Hexyl) 8270D-SIM
Log Number Range: 14-6672 to 14-6672

FORM-II TBT

YG01:00065

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by SW8270D-SIM GC/MS
Page 1 of 1

Sample ID: LCS-041114
LAB CONTROL SAMPLE

Lab Sample ID: LCS-041114
LIMS ID: 14-6672
Matrix: Water
Data Release Authorized:
Reported: 04/22/14

QC Report No: YG01-Apex Labs
Project: A4C0830
Date Sampled: NA
Date Received: NA

Date Extracted LCS: 04/11/14

Date Analyzed LCS: 04/19/14 12:05
LCSD: 04/19/14 12:18
Instrument/Analyst LCS: NT12/VTS
LCSD: NT12/VTS

Sample Amount LCS: 100 mL
LCSD: 100 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Alumina Cleanup: Yes

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Tributyltin Ion	2.12	2.23	95.1%	2.00	2.23	89.7%	5.8%
Dibutyltin Ion	1.51	1.92	78.6%	1.34	1.92	69.8%	11.9%
Butyltin Ion	0.33	1.56	21.2%	0.41	1.56	26.3%	21.6%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

TBT Surrogate Recovery

	LCS	LCSD
Tripropyl Tin Chloride	79.3%	68.6%
Tripentyl Tin Chloride	76.6%	72.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by SW8270D-SIM GC/MS **Sample ID: MB-041114**
Extraction Method: SW3510C **METHOD BLANK**

Lab Sample ID: MB-041114
LIMS ID: 14-6672
Matrix: Water
Data Release Authorized:
Reported: 04/22/14

QC Report No: YG01-Apex Labs
Project: A4C0830
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 04/11/14
Date Analyzed: 04/19/14 11:02
Instrument/Analyst: NT12/VTS

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	66.4%
Tripentyl Tin Chloride	66.8%

Success Through Science®

Your Project #: A4C0830
Your C.O.C. #: na

Attention:Philip Nerenberg

Apex Laboratories
12232 SW Garden Place
Tigard, OR
USA 97223

Report Date: 2014/05/09
Report #: R3024757
Version: 2R

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B455783
Received: 2014/04/08, 12:00

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Dioxins/Furans in Water (8290A) (1)	1	2014/04/10	2014/04/13	BRL SOP-00406	EPA 8290A mod.
PCB Congeners in Water (1668A)	1	2014/04/17	2014/04/23	BRL SOP-00408	EPA 1668A mod.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ivana Vukovic, Env Project Manager
Email: IVukovic@maxxam.ca
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Job #: B455783
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4C0830

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		VL8908							
Sampling Date		2014/03/28 08:55							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	1.7 U (1)	1.7	22	4.0	1.00	1.70		3572103
1,2,3,7,8-Penta CDD *	pg/L	1.3 U	1.3	56	4.0	1.00	1.30		3572103
1,2,3,4,7,8-Hexa CDD *	pg/L	2.9 J	1.2	56	4.0	0.100	0.290		3572103
1,2,3,6,7,8-Hexa CDD *	pg/L	12.4 J	1.1	56	4.0	0.100	1.24		3572103
1,2,3,7,8,9-Hexa CDD *	pg/L	9.7 J	1.1	56	4.0	0.100	0.970		3572103
1,2,3,4,6,7,8-Hepta CDD *	pg/L	277	1.1	56	4.0	0.0100	2.77		3572103
Octa CDD *	pg/L	2090	2.1	110	8.0	0.000300	0.627		3572103
Total Tetra CDD *	pg/L	8.6 U (1)	8.6	22	4.0		0		3572103
Total Penta CDD *	pg/L	1.3 U	1.3	56	4.0		0		3572103
Total Hexa CDD *	pg/L	75.5	1.1	56	4.0		0		3572103
Total Hepta CDD *	pg/L	600	1.1	56	4.0		0		3572103
2,3,7,8-Tetra CDF **	pg/L	3.1 J	1.2	22	4.0	0.100	0.310		3572103
1,2,3,7,8-Penta CDF **	pg/L	1.1 U	1.1	56	4.0	0.0300	0.0330		3572103
2,3,4,7,8-Penta CDF **	pg/L	1.1 U	1.1	56	4.0	0.300	0.330		3572103
1,2,3,4,7,8-Hexa CDF **	pg/L	4.8 J	1.2	56	4.0	0.100	0.480		3572103
1,2,3,6,7,8-Hexa CDF **	pg/L	2.6 J	1.1	56	4.0	0.100	0.260		3572103
2,3,4,6,7,8-Hexa CDF **	pg/L	2.1 J	1.2	56	4.0	0.100	0.210		3572103
1,2,3,7,8,9-Hexa CDF **	pg/L	1.3 U	1.3	56	4.0	0.100	0.130		3572103
1,2,3,4,6,7,8-Hepta CDF **	pg/L	43 U (1)	43	56	4.0	0.0100	0.430		3572103
1,2,3,4,7,8,9-Hepta CDF **	pg/L	2.6 J	1.3	56	4.0	0.0100	0.0260		3572103
Octa CDF **	pg/L	86.0 J	1.9	110	8.0	0.000300	0.0258		3572103
Total Tetra CDF **	pg/L	12.2 J	1.2	22	4.0		0		3572103
Total Penta CDF **	pg/L	18.7 J	1.1	56	4.0		0		3572103
Total Hexa CDF **	pg/L	72.1	1.2	56	4.0		0		3572103
Total Hepta CDF **	pg/L	70.7	1.2	56	4.0		0		3572103
TOTAL TOXIC EQUIVALENCY	pg/L						11.1		
Surrogate Recovery (%)									
C13-1234678 HeptaCDD *	%	72							3572103

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B455783
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4C0830

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		VL8908							
Sampling Date		2014/03/28 08:55							
COC Number		na				**TOXIC EQUIVALENCY**		# of	
	Units	**B20-SP1-20140328**	**EDL**	**RDL**	**MDL**	**TEF (2005 WHO)**	**TEQ(DL)**	**Isomers**	**QC Batch**
C13-1234678 HeptaCDF **	%	76							3572103
C13-123478 HexaCDF **	%	71							3572103
C13-123678 HexaCDD *	%	75							3572103
C13-12378 PentaCDD *	%	80							3572103
C13-12378 PentaCDF **	%	78							3572103
C13-2378 TetraCDD *	%	84							3572103
C13-2378 TetraCDF **	%	81							3572103
C13-OCDD *	%	86							3572103

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Maxxam Job #: B455783
Report Date: 2014/05/09

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Client Project #: A4C0830

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8908							
Sampling Date		2014/03/28 08:55							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.016 U (1)	0.016	0.095	N/A		0		3578544
3-MonoCB-(2)	ng/L	0.0051 U	0.0051	0.095	N/A		0		3578544
4-MonoCB-(3)	ng/L	0.011 U (1)	0.011	0.095	N/A		0		3578544
22'-DiCB-(4)	ng/L	0.171	0.011	0.095	N/A		0		3578544
2,3-DiCB-(5)	ng/L	0.0099 U	0.0099	0.095	N/A		0		3578544
2,3'-DiCB-(6)	ng/L	0.0513 J	0.0092	0.095	N/A		0		3578544
2,4-DiCB-(7)	ng/L	0.010 U	0.010	0.095	N/A		0		3578544
2,4'-DiCB-(8)	ng/L	0.281	0.0096	0.095	N/A		0		3578544
2,5-DiCB-(9)	ng/L	0.0146 J	0.0094	0.095	N/A		0		3578544
2,6-DiCB-(10)	ng/L	0.0093 U	0.0093	0.095	N/A		0		3578544
3,3'-DiCB-(11)	ng/L	0.764	0.010	0.095	N/A		0		3578544
DiCB-(12)+(13)	ng/L	0.056 J	0.010	0.19	N/A		0		3578544
3,5-DiCB-(14)	ng/L	0.0097 U	0.0097	0.095	N/A		0		3578544
4,4'-DiCB-(15)	ng/L	0.318	0.013	0.095	N/A		0		3578544
22'3-TriCB-(16)	ng/L	0.264	0.0029	0.095	N/A		0		3578544
22'4-TriCB-(17)	ng/L	0.231	0.0028	0.095	N/A		0		3578544
TriCB-(18)+(30)	ng/L	0.505	0.0023	0.19	N/A		0		3578544
22'6-TriCB-(19)	ng/L	0.0724 J	0.0031	0.095	N/A		0		3578544
TriCB-(20) + (28)	ng/L	1.18	0.0026	0.19	N/A		0		3578544
TriCB-(21)+(33)	ng/L	0.683	0.0027	0.19	N/A		0		3578544
234'-TriCB-(22)	ng/L	0.490	0.0029	0.095	N/A		0		3578544
235-TriCB-(23)	ng/L	0.0028 U	0.0028	0.095	N/A		0		3578544
236-TriCB-(24)	ng/L	0.0024 U	0.0024	0.095	N/A		0		3578544
23'4-TriCB-(25)	ng/L	0.0756 J	0.0024	0.095	N/A		0		3578544
TriCB-(26)+(29)	ng/L	0.167 J	0.0027	0.19	N/A		0		3578544
23'6-TriCB-(27)	ng/L	0.0456 J	0.0020	0.095	N/A		0		3578544
24'5-TriCB-(31)	ng/L	0.885	0.0025	0.095	N/A		0		3578544
24'6-TriCB-(32)	ng/L	0.179	0.0018	0.095	N/A		0		3578544
23'5'-TriCB-(34)	ng/L	0.0028 U	0.0028	0.095	N/A		0		3578544
33'4-TriCB-(35)	ng/L	0.019 U (1)	0.019	0.095	N/A		0		3578544

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Maxxam Job #: B455783
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4C0830

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8908							
Sampling Date		2014/03/28 08:55							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'5-TriCB-(36)	ng/L	0.0025 U	0.0025	0.095	N/A		0		3578544
344'-TriCB-(37)	ng/L	0.512	0.0039	0.095	N/A		0		3578544
345-TriCB-(38)	ng/L	0.0027 U	0.0027	0.095	N/A		0		3578544
34'5-TriCB-(39)	ng/L	0.0051 J	0.0027	0.095	N/A		0		3578544
TetraCB-(40)+(41)+(71)	ng/L	0.681	0.0020	0.29	N/A		0		3578544
22'34'-TetraCB-(42)	ng/L	0.357	0.0025	0.095	N/A		0		3578544
22'35-TetraCB-(43)	ng/L	0.0410 J	0.0023	0.095	N/A		0		3578544
TetraCB-(44)+(47)+(65)	ng/L	1.07	0.0018	0.29	N/A		0		3578544
TetraCB-(45)+(51)	ng/L	0.176 J	0.0019	0.19	N/A		0		3578544
22'36'-TetraCB-(46)	ng/L	0.0634 J	0.0022	0.095	N/A		0		3578544
22'45-TetraCB-(48)	ng/L	0.232	0.0020	0.095	N/A		0		3578544
TetraCB-(49)+TetraCB-(69)	ng/L	0.546	0.0017	0.19	N/A		0		3578544
TetraCB-(50)+(53)	ng/L	0.119 J	0.0019	0.19	N/A		0		3578544
22'55'-TetraCB-(52)	ng/L	1.05	0.0017	0.095	N/A		0		3578544
22'66'-TetraCB-(54)	ng/L	0.0052 U	0.0052	0.095	N/A		0		3578544
233'4-TetraCB-(55)	ng/L	0.0032 U	0.0032	0.095	N/A		0		3578544
233'4'-Tetra CB(56)	ng/L	0.403	0.0031	0.095	N/A		0		3578544
233'5-TetraCB-(57)	ng/L	0.0488 J	0.0029	0.095	N/A		0		3578544
233'5'-TetraCB-(58)	ng/L	0.0029 U	0.0029	0.095	N/A		0		3578544
TetraCB-(59)+(62)+(75)	ng/L	0.0971 J	0.0014	0.29	N/A		0		3578544
2344'-TetraCB -(60)	ng/L	0.220	0.0031	0.095	N/A		0		3578544
TetraCB-(61)+(70)+(74)+(76)	ng/L	1.50	0.0029	0.38	N/A		0		3578544
234'5-TetraCB-(63)	ng/L	0.0246 J	0.0027	0.095	N/A		0		3578544
234'6-TetraCB-(64)	ng/L	0.516	0.0015	0.095	N/A		0		3578544
23'44'-TetraCB-(66)	ng/L	0.723	0.0026	0.095	N/A		0		3578544
23'45-TetraCB-(67)	ng/L	0.0264 J	0.0025	0.095	N/A		0		3578544
23'45'-TetraCB-(68)	ng/L	0.0035 J	0.0027	0.095	N/A		0		3578544
23'55'-TetraCB-(72)	ng/L	0.0046 J	0.0027	0.095	N/A		0		3578544
23'5'6-TetraCB-(73)	ng/L	0.0016 U	0.0016	0.095	N/A		0		3578544
33'44'-TetraCB-(77)	ng/L	0.111	0.0033	0.095	N/A	0.000100	0.0000111		3578544
33'45-TetraCB-(78)	ng/L	0.0029 U	0.0029	0.095	N/A		0		3578544

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Maxxam Job #: B455783
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4C0830

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8908							
Sampling Date		2014/03/28 08:55							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'45'-TetraCB(79)	ng/L	0.0145 J	0.0025	0.095	N/A		0		3578544
33'55'-TetraCB-(80)	ng/L	0.0025 U	0.0025	0.095	N/A		0		3578544
344'5-TetraCB-(81)	ng/L	0.0035 U	0.0035	0.095	N/A	0.000300	0.00000105		3578544
22'33'4-PentaCB-(82)	ng/L	0.233	0.0015	0.095	N/A		0		3578544
PentaCB-(83)+(99)	ng/L	0.795	0.0014	0.19	N/A		0		3578544
22'33'6-PentaCB-(84)	ng/L	0.442	0.0015	0.095	N/A		0		3578544
PentaCB-(85)+(116)+(117)	ng/L	0.218 J	0.0011	0.29	N/A		0		3578544
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	1.20	0.0012	0.57	N/A		0		3578544
PentaCB-(88)+(91)	ng/L	0.195	0.0014	0.19	N/A		0		3578544
22'346'-PentaCB-(89)	ng/L	0.0179 J	0.0014	0.095	N/A		0		3578544
PentaCB-(90)+(101)+(113)	ng/L	1.51	0.0012	0.29	N/A		0		3578544
22'355'-PentaCB-(92)	ng/L	0.253	0.0014	0.095	N/A		0		3578544
PentaCB-(93)+(98)+(100)+(102)	ng/L	0.0563 J	0.0014	0.38	N/A		0		3578544
22'356'-PentaCB-(94)	ng/L	0.0060 J	0.0015	0.095	N/A		0		3578544
22'35'6-PentaCB-(95)	ng/L	1.13	0.0013	0.095	N/A		0		3578544
22'366'-PentaCB-(96)	ng/L	0.0079 U (1)	0.0079	0.095	N/A		0		3578544
22'45'6-PentaCB-(103)	ng/L	0.0048 J	0.0011	0.095	N/A		0		3578544
22'466'-PentaCB-(104)	ng/L	0.0016 U	0.0016	0.095	N/A		0		3578544
233'44'-PentaCB-(105)	ng/L	0.794	0.0064	0.095	N/A	0.0000300	0.0000238		3578544
233'45-PentaCB-(106)	ng/L	0.0058 U	0.0058	0.095	N/A		0		3578544
233'4'5-PentaCB-(107)	ng/L	0.102	0.0050	0.095	N/A		0		3578544
PentaCB-(108)+(124)	ng/L	0.0640 J	0.0058	0.19	N/A		0		3578544
PentaCB-(110)+(115)	ng/L	2.76	0.0012	0.19	N/A		0		3578544
233'55'-PentaCB-(111)	ng/L	0.0010 U	0.0010	0.095	N/A		0		3578544
233'56-PentaCB-(112)	ng/L	0.0010 U	0.0010	0.095	N/A		0		3578544
2344'5-PentaCB-(114)	ng/L	0.0335 J	0.0062	0.095	N/A	0.0000300	0.00000101		3578544
23'44'5-PentaCB-(118)	ng/L	1.73	0.0063	0.095	N/A	0.0000300	0.0000519		3578544
23'455'-PentaCB-(120)	ng/L	0.00095 U	0.00095	0.095	N/A		0		3578544
23'45'6-PentaCB-(121)	ng/L	0.0010 U	0.0010	0.095	N/A		0		3578544
233'4'5'-PentaCB-(122)	ng/L	0.021 U (1)	0.021	0.095	N/A		0		3578544

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8908							
Sampling Date		2014/03/28 08:55							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'44'5'-PentaCB-(123)	ng/L	0.018 U (1)	0.018	0.095	N/A	0.0000300	0.000000540		3578544
33'44'5-PentaCB-(126)	ng/L	0.0062 U	0.0062	0.095	N/A	0.100	0.000620		3578544
33'455'-PentaCB-(127)	ng/L	0.0056 U	0.0056	0.095	N/A		0		3578544
HexaCB-(128)+(166)	ng/L	0.474	0.0036	0.19	N/A		0		3578544
HexaCB-(129)+(138)+(163)	ng/L	3.20	0.0039	0.29	N/A		0		3578544
22'33'45'-HexaCB-(130)	ng/L	0.178	0.0046	0.095	N/A		0		3578544
22'33'46-HexaCB-(131)	ng/L	0.0437 J	0.0050	0.095	N/A		0		3578544
22'33'46'-HexaCB-(132)	ng/L	0.997	0.0046	0.095	N/A		0		3578544
22'33'55'-HexaCB-(133)	ng/L	0.0309 J	0.0041	0.095	N/A		0		3578544
HexaCB-(134)+(143)	ng/L	0.128 J	0.0046	0.19	N/A		0		3578544
HexaCB-(135)+(151)	ng/L	0.676	0.0051	0.19	N/A		0		3578544
22'33'66'-HexaCB-(136)	ng/L	0.241	0.0035	0.095	N/A		0		3578544
22'344'5-HexaCB-(137)	ng/L	0.135	0.0046	0.095	N/A		0		3578544
HexaCB-(139)+(140)	ng/L	0.0409 J	0.0038	0.19	N/A		0		3578544
22'3455'-HexaCB-(141)	ng/L	0.484	0.0039	0.095	N/A		0		3578544
22'3456-HexaCB-(142)	ng/L	0.0044 U	0.0044	0.095	N/A		0		3578544
22'345'6-HexaCB-(144)	ng/L	0.0988	0.0048	0.095	N/A		0		3578544
22'3466'-HexaCB-(145)	ng/L	0.0039 U	0.0039	0.095	N/A		0		3578544
22'34'55'-HexaCB-(146)	ng/L	0.305	0.0035	0.095	N/A		0		3578544
HexaCB-(147)+(149)	ng/L	1.85	0.0038	0.19	N/A		0		3578544
22'34'56'-HexaCB-(148)	ng/L	0.0049 U	0.0049	0.095	N/A		0		3578544
22'34'66'-HexaCB-(150)	ng/L	0.0038 U	0.0038	0.095	N/A		0		3578544
22'3566'-HexaCB-(152)	ng/L	0.0033 U	0.0033	0.095	N/A		0		3578544
HexaCB-(153)+(168)	ng/L	2.07	0.0032	0.19	N/A		0		3578544
22'44'56'-HexaCB-(154)	ng/L	0.0161 J	0.0042	0.095	N/A		0		3578544
22'44'66'-HexaCB-(155)	ng/L	0.0042 U	0.0042	0.095	N/A		0		3578544
HexaCB-(156)+(157)	ng/L	0.327	0.0045	0.19	N/A	0.0000300	0.00000981		3578544
233'44'6-HexaCB-(158)	ng/L	0.290	0.0028	0.095	N/A		0		3578544
233'455'-HexaCB-(159)	ng/L	0.0215 J	0.0044	0.095	N/A		0		3578544
233'456-HexaCB-(160)	ng/L	0.0036 U	0.0036	0.095	N/A		0		3578544

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Maxxam ID		VL8908							
Sampling Date		2014/03/28 08:55							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'45'6-HexaCB-(161)	ng/L	0.0030 U	0.0030	0.095	N/A		0		3578544
233'4'55'-HexaCB-(162)	ng/L	0.0078 U (1)	0.0078	0.095	N/A		0		3578544
233'4'5'6-HexaCB-(164)	ng/L	0.197	0.0028	0.095	N/A		0		3578544
233'55'6-HexaCB-(165)	ng/L	0.0034 U	0.0034	0.095	N/A		0		3578544
23'44'55'-HexaCB-(167)	ng/L	0.114	0.0048	0.095	N/A	0.0000300	0.00000342		3578544
33'44'55'-HexaCB-(169)	ng/L	0.0050 U	0.0050	0.095	N/A	0.0300	0.000150		3578544
22'33'44'5-HeptaCB-(170)	ng/L	0.574	0.0053	0.095	N/A		0		3578544
HeptaCB-(171)+(173)	ng/L	0.168 J	0.0064	0.19	N/A		0		3578544
22'33'455'-HeptaCB-(172)	ng/L	0.107	0.0065	0.095	N/A		0		3578544
22'33'456'-HeptaCB-(174)	ng/L	0.573	0.0056	0.095	N/A		0		3578544
22'33'45'6-HeptaCB-(175)	ng/L	0.0233 J	0.0049	0.095	N/A		0		3578544
22'33'466'-HeptaCB-(176)	ng/L	0.0623 J	0.0036	0.095	N/A		0		3578544
22'33'45'6'-HeptaCB-(177)	ng/L	0.319	0.0063	0.095	N/A		0		3578544
22'33'55'6-HeptaCB-(178)	ng/L	0.103	0.0051	0.095	N/A		0		3578544
22'33'566'-HeptaCB-(179)	ng/L	0.202	0.0035	0.095	N/A		0		3578544
HeptaCB-(180)+(193)	ng/L	1.33	0.0046	0.19	N/A		0		3578544
22'344'56-HeptaCB-(181)	ng/L	0.0064 U	0.0064	0.095	N/A		0		3578544
22'344'56'-HeptaCB-(182)	ng/L	0.0049 U	0.0049	0.095	N/A		0		3578544
22'344'5'6-HeptaCB-(183)	ng/L	0.324	0.0048	0.095	N/A		0		3578544
22'344'66'-HeptaCB-(184)	ng/L	0.0036 U	0.0036	0.095	N/A		0		3578544
22'3455'6-HeptaCB-(185)	ng/L	0.0075 U	0.0075	0.095	N/A		0		3578544
22'34566'-HeptaCB-(186)	ng/L	0.0039 U	0.0039	0.095	N/A		0		3578544
22'34'55'6-HeptaCB-(187)	ng/L	0.728	0.0049	0.095	N/A		0		3578544
22'34'566'-HeptaCB-(188)	ng/L	0.0048 U	0.0048	0.095	N/A		0		3578544
233'44'55'-HeptaCB-(189)	ng/L	0.023 U (1)	0.023	0.095	N/A	0.0000300	0.000000690		3578544
233'44'56-HeptaCB-(190)	ng/L	0.106	0.0049	0.095	N/A		0		3578544
233'44'5'6-HeptaCB-(191)	ng/L	0.0212 J	0.0047	0.095	N/A		0		3578544
233'455'6-HeptaCB-(192)	ng/L	0.0053 U	0.0053	0.095	N/A		0		3578544
22'33'44'55'-OctaCB-(194)	ng/L	0.346	0.011	0.095	N/A		0		3578544
22'33'44'56-OctaCB-(195)	ng/L	0.111	0.012	0.095	N/A		0		3578544

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

N/A = Not Applicable

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B455783
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4C0830

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8908							
Sampling Date		2014/03/28 08:55							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'33'44'56'-OctaCB-(196)	ng/L	0.185	0.010	0.095	N/A		0		3578544
22'33'44'66'OctaCB-(197)	ng/L	0.0124 J	0.0074	0.095	N/A		0		3578544
OctaCB-(198)+(199)	ng/L	0.479	0.010	0.19	N/A		0		3578544
22'33'4566'-OctaCB-(200)	ng/L	0.0477 J	0.0070	0.095	N/A		0		3578544
22'33'45'66'-OctaCB-(201)	ng/L	0.0561 J	0.0070	0.095	N/A		0		3578544
22'33'55'66'-OctaCB-(202)	ng/L	0.0868 J	0.0089	0.095	N/A		0		3578544
22'344'55'6-OctaCB-(203)	ng/L	0.305	0.010	0.095	N/A		0		3578544
22'344'566'-OctaCB-(204)	ng/L	0.0071 U	0.0071	0.095	N/A		0		3578544
233'44'55'6-OctaCB-(205)	ng/L	0.019 U (1)	0.019	0.095	N/A		0		3578544
22'33'44'55'6-NonaCB-(206)	ng/L	0.279	0.0053	0.095	N/A		0		3578544
22'33'44'566'-NonaCB-(207)	ng/L	0.0350 J	0.0040	0.095	N/A		0		3578544
22'33'455'66'-NonaCB-(208)	ng/L	0.0668 J	0.0049	0.095	N/A		0		3578544
DecaCB-(209)	ng/L	0.0770 J	0.0088	0.095	N/A		0		3578544
Monochlorobiphenyl	ng/L	0.0051 U	0.0051	N/A	N/A		0		3578544
Dichlorobiphenyl	ng/L	1.66	0.014	N/A	N/A		0		3578544
Trichlorobiphenyl	ng/L	5.29	0.0039	N/A	N/A		0		3578544
Tetrachlorobiphenyl	ng/L	8.03	0.0052	N/A	N/A		0		3578544
Pentachlorobiphenyl	ng/L	11.6	0.0069	N/A	N/A		0		3578544
Hexachlorobiphenyl	ng/L	11.9	0.0051	N/A	N/A		0		3578544
Heptachlorobiphenyl	ng/L	4.64	0.0075	N/A	N/A		0		3578544
Octachlorobiphenyl	ng/L	1.63	0.012	N/A	N/A		0		3578544
Nonachlorobiphenyl	ng/L	0.381	0.0053	N/A	N/A		0		3578544
Decachlorobiphenyl	ng/L	0.0770	0.0088	N/A	N/A		0		3578544
Total PCB	ng/L	45.2		N/A	N/A	N/A		0	3578544
TOTAL TOXIC EQUIVALENCY	ng/L						0.000873		
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	93							3578544
C13-22'33'44'55'6-NonaCB-(206)	%	105							3578544
C13-22'33'44'5-HeptaCB-(170)	%	101							3578544
C13-22'33'455'66'-NonaCB-(208)	%	102							3578544

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Maxxam Job #: B455783
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4C0830

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8908							
Sampling Date		2014/03/28 08:55							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B20-SP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-22'33'55'66'-OctaCB-(202)	%	103							3578544
C13-22'33'55'6-HeptaCB-(178)	%	108							3578544
C13-22'344'55'-HeptaCB-(180)	%	101							3578544
C13-22'34'566'-HeptaCB-(188)	%	112							3578544
C13-22'44'66'-HexaCB-(155)	%	114							3578544
C13-22'466'-PentaCB-(104)	%	103							3578544
C13-22'66'-TetraCB-(54)	%	95							3578544
C13-22'6-TriCB-(19)	%	72							3578544
C13-22'-DiCB-(4)	%	61							3578544
C13-233'44'55'6-OctaCB-(205)	%	101							3578544
C13-233'44'55'-HeptaCB-(189)	%	102							3578544
C13-233'44'-PentaCB-(105)	%	104							3578544
C13-233'55'-PentaCB-(111)	%	105							3578544
C13-23'44'55'-HexaCB-(167)	%	108							3578544
C13-2344'5-PentaCB-(114)	%	105							3578544
C13-23'44'5-PentaCB-(118)	%	106							3578544
C13-2'344'5-PentaCB-(123)	%	105							3578544
C13-2-MonoCB-(1)	%	40							3578544
C13-33'44'55'-HexaCB-(169)	%	64							3578544
C13-33'44'5-PentaCB-(126)	%	99							3578544
C13-33'44'-TetraCB-(77)	%	111							3578544
C13-344'5-TetraCB-(81)	%	108							3578544
C13-344'-TriCB-(37)	%	87							3578544
C13-44'-DiCB-(15)	%	90							3578544
C13-4-MonoCB-(3)	%	53							3578544
C13-DecaCB-(209)	%	115							3578544
C13-HexaCB-(156)+(157)	%	108							3578544

EDL = Estimated Detection Limit

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QC Batch = Quality Control Batch

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Maxxam Job #: B455783
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4C0830

TEST SUMMARY

Maxxam ID: VL8908
Sample ID: B20-SP1-20140328
Matrix: Water

Collected: 2014/03/28
Shipped:
Received: 2014/04/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Water (8290A)	HRMS/MS	3572103	2014/04/10	2014/04/13	Owen Cosby
PCB Congeners in Water (1668A)	HRMS/MS	3578544	2014/04/17	2014/04/23	Cathy Xu

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GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.8°C
Package 2	5.7°C
Package 3	5.5°C

Revised report (2014/05/09): Homologs included on the report.

Results relate only to the items tested.

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Apex Laboratories
Client Project #: A4C0830

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3572103	OBC	Spiked Blank	C13-1234678 HeptaCDD	2014/04/13		101	%	40 - 135
			C13-1234678 HeptaCDF	2014/04/13		102	%	40 - 135
			C13-123478 HexaCDF	2014/04/13		86	%	40 - 135
			C13-123678 HexaCDD	2014/04/13		82	%	40 - 135
			C13-12378 PentaCDD	2014/04/13		79	%	40 - 135
			C13-12378 PentaCDF	2014/04/13		79	%	40 - 135
			C13-2378 TetraCDD	2014/04/13		71	%	40 - 135
			C13-2378 TetraCDF	2014/04/13		74	%	40 - 135
			C13-OCDD	2014/04/13		121	%	40 - 135
			2,3,7,8-Tetra CDD	2014/04/13		117	%	80 - 140
			1,2,3,7,8-Penta CDD	2014/04/13		107	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2014/04/13		103	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2014/04/13		101	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2014/04/13		112	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2014/04/13		100	%	80 - 140
			Octa CDD	2014/04/13		92	%	80 - 140
			2,3,7,8-Tetra CDF	2014/04/13		104	%	80 - 140
			1,2,3,7,8-Penta CDF	2014/04/13		97	%	80 - 140
			2,3,4,7,8-Penta CDF	2014/04/13		106	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2014/04/13		96	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2014/04/13		95	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2014/04/13		97	%	80 - 140
			1,2,3,7,8,9-Hexa CDF	2014/04/13		104	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2014/04/13		99	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2014/04/13		95	%	80 - 140
			Octa CDF	2014/04/13		90	%	80 - 140
3572103	OBC	Method Blank	C13-1234678 HeptaCDD	2014/04/13		100	%	40 - 135
			C13-1234678 HeptaCDF	2014/04/13		104	%	40 - 135
			C13-123478 HexaCDF	2014/04/13		87	%	40 - 135
			C13-123678 HexaCDD	2014/04/13		83	%	40 - 135
			C13-12378 PentaCDD	2014/04/13		81	%	40 - 135
			C13-12378 PentaCDF	2014/04/13		82	%	40 - 135
			C13-2378 TetraCDD	2014/04/13		67	%	40 - 135
			C13-2378 TetraCDF	2014/04/13		73	%	40 - 135
			C13-OCDD	2014/04/13		120	%	40 - 135
			2,3,7,8-Tetra CDD	2014/04/13	1.2 U, EDL=1.2		pg/L	
			1,2,3,7,8-Penta CDD	2014/04/13	1.2 U, EDL=1.2		pg/L	
			1,2,3,4,7,8-Hexa CDD	2014/04/13	1.2 U, EDL=1.2		pg/L	
			1,2,3,6,7,8-Hexa CDD	2014/04/13	1.1 U, EDL=1.1		pg/L	
			1,2,3,7,8,9-Hexa CDD	2014/04/13	1.1 U, EDL=1.1		pg/L	
			1,2,3,4,6,7,8-Hepta CDD	2014/04/13	4.6 J, EDL=1.1		pg/L	
			Octa CDD	2014/04/13	107 J, EDL=2.3		pg/L	
			Total Tetra CDD	2014/04/13	3.2 U, EDL=3.2 (1)		pg/L	
			Total Penta CDD	2014/04/13	1.2 U, EDL=1.2		pg/L	

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Maxxam Job #: B455783
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4C0830

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Total Hexa CDD	2014/04/13	17 U, EDL=17 (1)		pg/L	
			Total Hepta CDD	2014/04/13	4.6 J, EDL=1.1		pg/L	
			2,3,7,8-Tetra CDF	2014/04/13	1.1 U, EDL=1.1		pg/L	
			1,2,3,7,8-Penta CDF	2014/04/13	1.2 U, EDL=1.2		pg/L	
			2,3,4,7,8-Penta CDF	2014/04/13	1.2 U, EDL=1.2		pg/L	
			1,2,3,4,7,8-Hexa CDF	2014/04/13	1.1 U, EDL=1.1		pg/L	
			1,2,3,6,7,8-Hexa CDF	2014/04/13	1.0 U, EDL=1.0		pg/L	
			2,3,4,6,7,8-Hexa CDF	2014/04/13	1.1 U, EDL=1.1		pg/L	
			1,2,3,7,8,9-Hexa CDF	2014/04/13	1.2 U, EDL=1.2		pg/L	
			1,2,3,4,6,7,8-Hepta CDF	2014/04/13	3.9 U, EDL=3.9 (1)		pg/L	
			1,2,3,4,7,8,9-Hepta CDF	2014/04/13	1.3 U, EDL=1.3		pg/L	
			Octa CDF	2014/04/13	14.1 J, EDL=2.2		pg/L	
			Total Tetra CDF	2014/04/13	1.1 U, EDL=1.1		pg/L	
			Total Penta CDF	2014/04/13	2.4 U, EDL=2.4 (1)		pg/L	
			Total Hexa CDF	2014/04/13	1.1 U, EDL=1.1		pg/L	
			Total Hepta CDF	2014/04/13	6.9 J, EDL=1.2		pg/L	
3578544	CXU	Matrix Spike	C13-2,44'-TriCB-(28)	2014/04/21		65	%	40 - 125
			C13-22'33'44'55'6-NonaCB-(206)	2014/04/21		101	%	30 - 140
			C13-22'33'44'5-HeptaCB-(170)	2014/04/21		92	%	30 - 140
			C13-22'33'455'66'-NonaCB-(208)	2014/04/21		83	%	30 - 140
			C13-22'33'55'66'-OctaCB-(202)	2014/04/21		82	%	30 - 140
			C13-22'33'55'6-HeptaCB-(178)	2014/04/21		77	%	40 - 125
			C13-22'344'55'-HeptaCB-(180)	2014/04/21		91	%	30 - 140
			C13-22'34'566'-HeptaCB-(188)	2014/04/21		79	%	30 - 140
			C13-22'44'66'-HexaCB-(155)	2014/04/21		66	%	30 - 140
			C13-22'466'-PentaCB-(104)	2014/04/21		66	%	30 - 140
			C13-22'66'-TetraCB-(54)	2014/04/21		47	%	30 - 140
			C13-22'6-TriCB-(19)	2014/04/21		36	%	30 - 140
			C13-22'-DiCB-(4)	2014/04/21		30	%	30 - 140
			C13-233'44'55'6-OctaCB-(205)	2014/04/21		104	%	30 - 140
			C13-233'44'55'-HeptaCB-(189)	2014/04/21		107	%	30 - 140
			C13-233'44'-PentaCB-(105)	2014/04/21		114	%	30 - 140
			C13-233'55'-PentaCB-(111)	2014/04/21		83	%	40 - 125
			C13-23'44'55'-HexaCB-(167)	2014/04/21		112	%	30 - 140
			C13-2344'5-PentaCB-(114)	2014/04/21		107	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2014/04/21		110	%	30 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			C13-2'344'5-PentaCB-(123)	2014/04/21		109	%	30 - 140
			C13-2-MonoCB-(1)	2014/04/21		30	%	15 - 140
			C13-33'44'55'-HexaCB-(169)	2014/04/21		90	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2014/04/21		118	%	30 - 140
			C13-33'44'-TetraCB-(77)	2014/04/21		99	%	30 - 140
			C13-344'5-TetraCB-(81)	2014/04/21		95	%	30 - 140
			C13-344'-TriCB-(37)	2014/04/21		75	%	30 - 140
			C13-44'-DiCB-(15)	2014/04/21		53	%	30 - 140
			C13-4-MonoCB-(3)	2014/04/21		30	%	15 - 140
			C13-DecaCB-(209)	2014/04/21		99	%	30 - 140
			C13-HexaCB-(156)+(157)	2014/04/21		119	%	30 - 140
			2-MonoCB-(1)	2014/04/21		100	%	50 - 150
			4-MonoCB-(3)	2014/04/21		100	%	50 - 150
			22'-DiCB-(4)	2014/04/21		100	%	50 - 150
			4,4'-DiCB-(15)	2014/04/21		86	%	50 - 150
			22'6-TriCB-(19)	2014/04/21		97	%	50 - 150
			235-TriCB-(23)	2014/04/21		92	%	50 - 150
			23'5'-TriCB-(34)	2014/04/21		76	%	50 - 150
			344'-TriCB-(37)	2014/04/21		103	%	50 - 150
			22'66'-TetraCB-(54)	2014/04/21		94	%	50 - 150
			33'44'-TetraCB-(77)	2014/04/21		93	%	50 - 150
			344'5-TetraCB-(81)	2014/04/21		93	%	50 - 150
			22'466'-PentaCB-(104)	2014/04/21		100	%	50 - 150
			233'44'-PentaCB-(105)	2014/04/21		91	%	50 - 150
			2344'5-PentaCB-(114)	2014/04/21		94	%	50 - 150
			23'44'5-PentaCB-(118)	2014/04/21		93	%	50 - 150
			23'44'5'-PentaCB-(123)	2014/04/21		92	%	50 - 150
			33'44'5-PentaCB-(126)	2014/04/21		91	%	50 - 150
			22'44'66'-HexaCB-(155)	2014/04/21		96	%	50 - 150
			HexaCB-(156)+(157)	2014/04/21		93	%	50 - 150
			23'44'55'-HexaCB-(167)	2014/04/21		96	%	50 - 150
			33'44'55'-HexaCB-(169)	2014/04/21		95	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2014/04/21		97	%	50 - 150
			HeptaCB-(180)+(193)	2014/04/21		72	%	50 - 150
			22'344'56'-HeptaCB-(182)	2014/04/21		82	%	50 - 150
			22'34'55'6-HeptaCB-(187)	2014/04/21		86	%	50 - 150
			22'34'566'-HeptaCB-(188)	2014/04/21		92	%	50 - 150
			233'44'55'-HeptaCB-(189)	2014/04/21		89	%	50 - 150
			22'33'55'66'-OctaCB-(202)	2014/04/21		95	%	50 - 150
			233'44'55'6-OctaCB-(205)	2014/04/21		95	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2014/04/21		96	%	50 - 150
			22'33'455'66'-NonaCB-(208)	2014/04/21		99	%	50 - 150
			DecaCB-(209)	2014/04/21		94	%	50 - 150
3578544	CXU	RPD	2-MonoCB-(1)	2014/04/21	1.0		%	30
			4-MonoCB-(3)	2014/04/21	4.1		%	30
			22'-DiCB-(4)	2014/04/21	3.0		%	30
			4,4'-DiCB-(15)	2014/04/21	3.4		%	30
			22'6-TriCB-(19)	2014/04/21	1.0		%	30
			235-TriCB-(23)	2014/04/21	9.3		%	30
			23'5'-TriCB-(34)	2014/04/21	7.6		%	30
			344'-TriCB-(37)	2014/04/21	1		%	30
			22'66'-TetraCB-(54)	2014/04/21	1.1		%	30
			33'44'-TetraCB-(77)	2014/04/21	3.2		%	30
			344'5-TetraCB-(81)	2014/04/21	4.2		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			22'466'-PentaCB-(104)	2014/04/21	2.0		%	30
			233'44'-PentaCB-(105)	2014/04/21	3.2		%	30
			2344'5-PentaCB-(114)	2014/04/21	1.1		%	30
			23'44'5-PentaCB-(118)	2014/04/21	5.2		%	30
			23'44'5'-PentaCB-(123)	2014/04/21	1.1		%	30
			33'44'5-PentaCB-(126)	2014/04/21	2.2		%	30
			22'44'66'-HexaCB-(155)	2014/04/21	5.3		%	30
			HexaCB-(156)+(157)	2014/04/21	5.2		%	30
			23'44'55'-HexaCB-(167)	2014/04/21	3.1		%	30
			33'44'55'-HexaCB-(169)	2014/04/21	1.0		%	30
			22'33'44'5-HeptaCB-(170)	2014/04/21	2.0		%	30
			HeptaCB-(180)+(193)	2014/04/21	5.4		%	30
			22'344'56'-HeptaCB-(182)	2014/04/21	3.7		%	30
			22'34'55'6-HeptaCB-(187)	2014/04/21	3.6		%	30
			22'34'566'-HeptaCB-(188)	2014/04/21	2.2		%	30
			233'44'55'-HeptaCB-(189)	2014/04/21	4.4		%	30
			22'33'55'66'-OctaCB-(202)	2014/04/21	1.0		%	30
			233'44'55'6-OctaCB-(205)	2014/04/21	1.0		%	30
			22'33'44'55'6-NonaCB-(206)	2014/04/21	1.0		%	30
			22'33'455'66'-NonaCB-(208)	2014/04/21	0		%	30
			DecaCB-(209)	2014/04/21	3.1		%	30
3578544	CXU	Spiked Blank	C13-2,44'-TriCB-(28)	2014/04/21		70	%	40 - 125
			C13-22'33'44'55'6-NonaCB-(206)	2014/04/21		100	%	30 - 140
			C13-22'33'44'5-HeptaCB-(170)	2014/04/21		94	%	30 - 140
			C13-22'33'455'66'-NonaCB-(208)	2014/04/21		86	%	30 - 140
			C13-22'33'55'66'-OctaCB-(202)	2014/04/21		76	%	30 - 140
			C13-22'33'55'6-HeptaCB-(178)	2014/04/21		81	%	40 - 125
			C13-22'344'55'-HeptaCB-(180)	2014/04/21		91	%	30 - 140
			C13-22'34'566'-HeptaCB-(188)	2014/04/21		82	%	30 - 140
			C13-22'44'66'-HexaCB-(155)	2014/04/21		67	%	30 - 140
			C13-22'466'-PentaCB-(104)	2014/04/21		70	%	30 - 140
			C13-22'66'-TetraCB-(54)	2014/04/21		46	%	30 - 140
			C13-22'6-TriCB-(19)	2014/04/21		39	%	30 - 140
			C13-22'-DiCB-(4)	2014/04/21		33	%	30 - 140
			C13-233'44'55'6-OctaCB-(205)	2014/04/21		106	%	30 - 140
			C13-233'44'55'-HeptaCB-(189)	2014/04/21		109	%	30 - 140
			C13-233'44'-PentaCB-(105)	2014/04/21		127	%	30 - 140
			C13-233'55'-PentaCB-(111)	2014/04/21		94	%	40 - 125
			C13-23'44'55'-HexaCB-(167)	2014/04/21		124	%	30 - 140
			C13-2344'5-PentaCB-(114)	2014/04/21		122	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2014/04/21		124	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2014/04/21		122	%	30 - 140
			C13-2-MonoCB-(1)	2014/04/21		35	%	15 - 140
			C13-33'44'55'-HexaCB-(169)	2014/04/21		79	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2014/04/21		125	%	30 - 140
			C13-33'44'-TetraCB-(77)	2014/04/21		105	%	30 - 140
			C13-344'5-TetraCB-(81)	2014/04/21		101	%	30 - 140
			C13-344'-TriCB-(37)	2014/04/21		81	%	30 - 140
			C13-44'-DiCB-(15)	2014/04/21		60	%	30 - 140
			C13-4-MonoCB-(3)	2014/04/21		36	%	15 - 140
			C13-DecaCB-(209)	2014/04/21		97	%	30 - 140
			C13-HexaCB-(156)+(157)	2014/04/21		127	%	30 - 140
			2-MonoCB-(1)	2014/04/21		98	%	50 - 150
			4-MonoCB-(3)	2014/04/21		98	%	50 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			22'-DiCB-(4)	2014/04/21		99	%	50 - 150
			4,4'-DiCB-(15)	2014/04/21		92	%	50 - 150
			22'6-TriCB-(19)	2014/04/21		100	%	50 - 150
			235-TriCB-(23)	2014/04/21		93	%	50 - 150
			23'5'-TriCB-(34)	2014/04/21		78	%	50 - 150
			344'-TriCB-(37)	2014/04/21		103	%	50 - 150
			22'66'-TetraCB-(54)	2014/04/21		101	%	50 - 150
			33'44'-TetraCB-(77)	2014/04/21		97	%	50 - 150
			344'5-TetraCB-(81)	2014/04/21		97	%	50 - 150
			22'466'-PentaCB-(104)	2014/04/21		99	%	50 - 150
			233'44'-PentaCB-(105)	2014/04/21		96	%	50 - 150
			2344'5-PentaCB-(114)	2014/04/21		96	%	50 - 150
			23'44'5-PentaCB-(118)	2014/04/21		96	%	50 - 150
			23'44'5'-PentaCB-(123)	2014/04/21		96	%	50 - 150
			33'44'5-PentaCB-(126)	2014/04/21		93	%	50 - 150
			22'44'66'-HexaCB-(155)	2014/04/21		97	%	50 - 150
			HexaCB-(156)+(157)	2014/04/21		97	%	50 - 150
			23'44'55'-HexaCB-(167)	2014/04/21		97	%	50 - 150
			33'44'55'-HexaCB-(169)	2014/04/21		99	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2014/04/21		100	%	50 - 150
			HeptaCB-(180)+(193)	2014/04/21		76	%	50 - 150
			22'344'56'-HeptaCB-(182)	2014/04/21		79	%	50 - 150
			22'34'55'6-HeptaCB-(187)	2014/04/21		82	%	50 - 150
			22'34'566'-HeptaCB-(188)	2014/04/21		96	%	50 - 150
			233'44'55'-HeptaCB-(189)	2014/04/21		91	%	50 - 150
			22'33'55'66'-OctaCB-(202)	2014/04/21		98	%	50 - 150
			233'44'55'6-OctaCB-(205)	2014/04/21		97	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2014/04/21		93	%	50 - 150
			22'33'455'66'-NonaCB-(208)	2014/04/21		99	%	50 - 150
			DecaCB-(209)	2014/04/21		96	%	50 - 150
3578544	CXU	Method Blank	C13-2,44'-TriCB-(28)	2014/04/21		74	%	40 - 125
			C13-22'33'44'55'6-NonaCB-(206)	2014/04/21		97	%	30 - 140
			C13-22'33'44'5-HeptaCB-(170)	2014/04/21		89	%	30 - 140
			C13-22'33'455'66'-NonaCB-(208)	2014/04/21		79	%	30 - 140
			C13-22'33'55'66'-OctaCB-(202)	2014/04/21		73	%	30 - 140
			C13-22'33'55'6-HeptaCB-(178)	2014/04/21		79	%	40 - 125
			C13-22'344'55'-HeptaCB-(180)	2014/04/21		87	%	30 - 140
			C13-22'34'566'-HeptaCB-(188)	2014/04/21		78	%	30 - 140
			C13-22'44'66'-HexaCB-(155)	2014/04/21		80	%	30 - 140
			C13-22'466'-PentaCB-(104)	2014/04/21		63	%	30 - 140
			C13-22'66'-TetraCB-(54)	2014/04/21		49	%	30 - 140
			C13-22'6-TriCB-(19)	2014/04/21		44	%	30 - 140
			C13-22'-DiCB-(4)	2014/04/21		38	%	30 - 140
			C13-233'44'55'6-OctaCB-(205)	2014/04/21		103	%	30 - 140
			C13-233'44'55'-HeptaCB-(189)	2014/04/21		107	%	30 - 140
			C13-233'44'-PentaCB-(105)	2014/04/21		113	%	30 - 140
			C13-233'55'-PentaCB-(111)	2014/04/21		93	%	40 - 125
			C13-23'44'55'-HexaCB-(167)	2014/04/21		122	%	30 - 140
			C13-2344'5-PentaCB-(114)	2014/04/21		109	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2014/04/21		112	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2014/04/21		112	%	30 - 140
			C13-2-MonoCB-(1)	2014/04/21		40	%	15 - 140
			C13-33'44'55'-HexaCB-(169)	2014/04/21		76	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2014/04/21		114	%	30 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			C13-33'44'-TetraCB-(77)	2014/04/21		103	%	30 - 140
			C13-344'5-TetraCB-(81)	2014/04/21		100	%	30 - 140
			C13-344'-TriCB-(37)	2014/04/21		77	%	30 - 140
			C13-44'-DiCB-(15)	2014/04/21		63	%	30 - 140
			C13-4-MonoCB-(3)	2014/04/21		41	%	15 - 140
			C13-DecaCB-(209)	2014/04/21		90	%	30 - 140
			C13-HexaCB-(156)+(157)	2014/04/21		129	%	30 - 140
			2-MonoCB-(1)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			3-MonoCB-(2)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			4-MonoCB-(3)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			22'-DiCB-(4)	2014/04/21	0.014 U, EDL=0.014		ng/L	
			2,3-DiCB-(5)	2014/04/21	0.016 U, EDL=0.016		ng/L	
			2,3'-DiCB-(6)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			2,4-DiCB-(7)	2014/04/21	0.013 U, EDL=0.013		ng/L	
			2,4'-DiCB-(8)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			2,5-DiCB-(9)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			2,6-DiCB-(10)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			3,3'-DiCB-(11)	2014/04/21	0.082 J, EDL=0.013		ng/L	
			DiCB-(12)+(13)	2014/04/21	0.013 U, EDL=0.013		ng/L	
			3,5-DiCB-(14)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			4,4'-DiCB-(15)	2014/04/21	0.019 U, EDL=0.019		ng/L	
			22'3-TriCB-(16)	2014/04/21	0.018 U, EDL=0.018		ng/L	
			22'4-TriCB-(17)	2014/04/21	0.015 U, EDL=0.015		ng/L	
			TriCB-(18)+(30)	2014/04/21	0.013 U, EDL=0.013		ng/L	
			22'6-TriCB-(19)	2014/04/21	0.017 U, EDL=0.017		ng/L	
			TriCB-(20) + (28)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			TriCB-(21)+(33)	2014/04/21	0.0097 U, EDL=0.0097		ng/L	
			234'-TriCB-(22)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			235-TriCB-(23)	2014/04/21	0.011 U, EDL=0.011		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			236-TriCB-(24)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			23'4-TriCB-(25)	2014/04/21	0.0095 U, EDL=0.0095		ng/L	
			TriCB-(26)+(29)	2014/04/21	0.0097 U, EDL=0.0097		ng/L	
			23'6-TriCB-(27)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			24'5-TriCB-(31)	2014/04/21	0.0091 U, EDL=0.0091		ng/L	
			24'6-TriCB-(32)	2014/04/21	0.0096 U, EDL=0.0096		ng/L	
			23'5'-TriCB-(34)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			33'4-TriCB-(35)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			33'5-TriCB-(36)	2014/04/21	0.0087 U, EDL=0.0087		ng/L	
			344'-TriCB-(37)	2014/04/21	0.015 U, EDL=0.015		ng/L	
			345-TriCB-(38)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			34'5-TriCB-(39)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			TetraCB-(40)+(41)+(71)	2014/04/21	0.017 U, EDL=0.017		ng/L	
			22'34'-TetraCB-(42)	2014/04/21	0.020 U, EDL=0.020		ng/L	
			22'35-TetraCB-(43)	2014/04/21	0.021 U, EDL=0.021		ng/L	
			TetraCB-(44)+(47)+(65)	2014/04/21	0.020 J, EDL=0.016		ng/L	
			TetraCB-(45)+(51)	2014/04/21	0.017 U, EDL=0.017		ng/L	
			22'36'-TetraCB-(46)	2014/04/21	0.019 U, EDL=0.019		ng/L	
			22'45-TetraCB-(48)	2014/04/21	0.018 U, EDL=0.018		ng/L	
			TetraCB-(49)+TetraCB-(69)	2014/04/21	0.015 U, EDL=0.015		ng/L	
			TetraCB-(50)+(53)	2014/04/21	0.016 U, EDL=0.016		ng/L	
			22'55'-TetraCB-(52)	2014/04/21	0.017 U, EDL=0.017		ng/L	
			22'66'-TetraCB-(54)	2014/04/21	0.014 U, EDL=0.014		ng/L	
			233'4-TetraCB-(55)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			233'4'-Tetra CB(56)	2014/04/21	0.011 U, EDL=0.011		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			233'5-TetraCB-(57)	2014/04/21	0.0094 U, EDL=0.0094		ng/L	
			233'5'-TetraCB-(58)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			TetraCB-(59)+(62)+(75)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			2344'-TetraCB -(60)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			TetraCB-(61)+(70)+(74)+(76)	2014/04/21	0.0098 U, EDL=0.0098		ng/L	
			234'5-TetraCB-(63)	2014/04/21	0.0090 U, EDL=0.0090		ng/L	
			234'6-TetraCB-(64)	2014/04/21	0.013 U, EDL=0.013		ng/L	
			23'44'-TetraCB-(66)	2014/04/21	0.0093 U, EDL=0.0093		ng/L	
			23'45-TetraCB-(67)	2014/04/21	0.0083 U, EDL=0.0083		ng/L	
			23'45'-TetraCB-(68)	2014/04/21	0.0089 U, EDL=0.0089		ng/L	
			23'55'-TetraCB-(72)	2014/04/21	0.0090 U, EDL=0.0090		ng/L	
			23'5'6-TetraCB-(73)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			33'44'-TetraCB-(77)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			33'45-TetraCB-(78)	2014/04/21	0.0097 U, EDL=0.0097		ng/L	
			33'45'-TetraCB(79)	2014/04/21	0.0083 U, EDL=0.0083		ng/L	
			33'55'-TetraCB-(80)	2014/04/21	0.0086 U, EDL=0.0086		ng/L	
			344'5-TetraCB-(81)	2014/04/21	0.013 U, EDL=0.013		ng/L	
			22'33'4-PentaCB-(82)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			PentaCB-(83)+(99)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			22'33'6-PentaCB-(84)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			PentaCB-(85)+(116)+(117)	2014/04/21	0.0085 U, EDL=0.0085		ng/L	
			PentaCB-(86)(87)(97)(109)(119)(125)	2014/04/21	0.0088 U, EDL=0.0088		ng/L	
			PentaCB-(88)+(91)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			22'346'-PentaCB-(89)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			PentaCB-(90)+(101)+(113)	2014/04/21	0.0086 U, EDL=0.0086		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			22'355'-PentaCB-(92)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			PentaCB-(93)+(98)+(100)+(102)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			22'356'-PentaCB-(94)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			22'35'6-PentaCB-(95)	2014/04/21	0.0093 U, EDL=0.0093		ng/L	
			22'366'-PentaCB-(96)	2014/04/21	0.0095 U, EDL=0.0095		ng/L	
			22'45'6-PentaCB-(103)	2014/04/21	0.0085 U, EDL=0.0085		ng/L	
			22'466'-PentaCB-(104)	2014/04/21	0.0091 U, EDL=0.0091		ng/L	
			233'44'-PentaCB-(105)	2014/04/21	0.0076 U, EDL=0.0076		ng/L	
			233'45-PentaCB-(106)	2014/04/21	0.0061 U, EDL=0.0061		ng/L	
			233'4'5-PentaCB-(107)	2014/04/21	0.0063 U, EDL=0.0063		ng/L	
			PentaCB-(108)+(124)	2014/04/21	0.0066 U, EDL=0.0066		ng/L	
			PentaCB-(110)+(115)	2014/04/21	0.0080 U, EDL=0.0080		ng/L	
			233'55'-PentaCB-(111)	2014/04/21	0.0077 U, EDL=0.0077		ng/L	
			233'56-PentaCB-(112)	2014/04/21	0.0071 U, EDL=0.0071		ng/L	
			2344'5-PentaCB-(114)	2014/04/21	0.0073 U, EDL=0.0073		ng/L	
			23'44'5-PentaCB-(118)	2014/04/21	0.0075 U, EDL=0.0075		ng/L	
			23'455'-PentaCB-(120)	2014/04/21	0.0070 U, EDL=0.0070		ng/L	
			23'45'6-PentaCB-(121)	2014/04/21	0.0076 U, EDL=0.0076		ng/L	
			233'4'5'-PentaCB-(122)	2014/04/21	0.0071 U, EDL=0.0071		ng/L	
			23'44'5'-PentaCB-(123)	2014/04/21	0.0081 U, EDL=0.0081		ng/L	
			33'44'5-PentaCB-(126)	2014/04/21	0.0074 U, EDL=0.0074		ng/L	
			33'455'-PentaCB-(127)	2014/04/21	0.0064 U, EDL=0.0064		ng/L	
			HexaCB-(128)+(166)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			HexaCB-(129)+(138)+(163)	2014/04/21	0.014 U, EDL=0.014		ng/L	
			22'33'45'-HexaCB-(130)	2014/04/21	0.016 U, EDL=0.016		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			22'33'46-HexaCB-(131)	2014/04/21	0.017 U, EDL=0.017		ng/L	
			22'33'46'-HexaCB-(132)	2014/04/21	0.016 U, EDL=0.016		ng/L	
			22'33'55'-HexaCB-(133)	2014/04/21	0.014 U, EDL=0.014		ng/L	
			HexaCB-(134)+(143)	2014/04/21	0.016 U, EDL=0.016		ng/L	
			HexaCB-(135)+(151)	2014/04/21	0.0097 U, EDL=0.0097		ng/L	
			22'33'66'-HexaCB-(136)	2014/04/21	0.0067 U, EDL=0.0067		ng/L	
			22'344'5-HexaCB-(137)	2014/04/21	0.016 U, EDL=0.016		ng/L	
			HexaCB-(139)+(140)	2014/04/21	0.013 U, EDL=0.013		ng/L	
			22'3455'-HexaCB-(141)	2014/04/21	0.014 U, EDL=0.014		ng/L	
			22'3456-HexaCB-(142)	2014/04/21	0.015 U, EDL=0.015		ng/L	
			22'345'6-HexaCB-(144)	2014/04/21	0.0092 U, EDL=0.0092		ng/L	
			22'3466'-HexaCB-(145)	2014/04/21	0.0074 U, EDL=0.0074		ng/L	
			22'34'55'-HexaCB-(146)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			HexaCB-(147)+(149)	2014/04/21	0.013 U, EDL=0.013		ng/L	
			22'34'56'-HexaCB-(148)	2014/04/21	0.0093 U, EDL=0.0093		ng/L	
			22'34'66'-HexaCB-(150)	2014/04/21	0.0070 U, EDL=0.0070		ng/L	
			22'3566'-HexaCB-(152)	2014/04/21	0.0064 U, EDL=0.0064		ng/L	
			HexaCB-(153)+(168)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			22'44'56'-HexaCB-(154)	2014/04/21	0.0081 U, EDL=0.0081		ng/L	
			22'44'66'-HexaCB-(155)	2014/04/21	0.0077 U, EDL=0.0077		ng/L	
			HexaCB-(156)+(157)	2014/04/21	0.0039 U, EDL=0.0039		ng/L	
			233'44'6-HexaCB-(158)	2014/04/21	0.0095 U, EDL=0.0095		ng/L	
			233'455'-HexaCB-(159)	2014/04/21	0.0034 U, EDL=0.0034		ng/L	
			233'456-HexaCB-(160)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			233'45'6-HexaCB-(161)	2014/04/21	0.010 U, EDL=0.010		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			233'4'55'-HexaCB-(162)	2014/04/21	0.0036 U, EDL=0.0036		ng/L	
			233'4'5'6-HexaCB-(164)	2014/04/21	0.0099 U, EDL=0.0099		ng/L	
			233'55'6-HexaCB-(165)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			23'44'55'-HexaCB-(167)	2014/04/21	0.0041 U, EDL=0.0041		ng/L	
			33'44'55'-HexaCB-(169)	2014/04/21	0.0043 U, EDL=0.0043		ng/L	
			22'33'44'5-HeptaCB-(170)	2014/04/21	0.0060 U, EDL=0.0060		ng/L	
			HeptaCB-(171)+(173)	2014/04/21	0.0069 U, EDL=0.0069		ng/L	
			22'33'455'-HeptaCB-(172)	2014/04/21	0.0071 U, EDL=0.0071		ng/L	
			22'33'456'-HeptaCB-(174)	2014/04/21	0.0063 U, EDL=0.0063		ng/L	
			22'33'45'6-HeptaCB-(175)	2014/04/21	0.0048 U, EDL=0.0048		ng/L	
			22'33'466'-HeptaCB-(176)	2014/04/21	0.0036 U, EDL=0.0036		ng/L	
			22'33'45'6'-HeptaCB-(177)	2014/04/21	0.0069 U, EDL=0.0069		ng/L	
			22'33'55'6-HeptaCB-(178)	2014/04/21	0.0050 U, EDL=0.0050		ng/L	
			22'33'566'-HeptaCB-(179)	2014/04/21	0.0034 U, EDL=0.0034		ng/L	
			HeptaCB-(180)+(193)	2014/04/21	0.0051 U, EDL=0.0051		ng/L	
			22'344'56-HeptaCB-(181)	2014/04/21	0.0069 U, EDL=0.0069		ng/L	
			22'344'56'-HeptaCB-(182)	2014/04/21	0.0048 U, EDL=0.0048		ng/L	
			22'344'5'6-HeptaCB-(183)	2014/04/21	0.0062 U, EDL=0.0062		ng/L	
			22'344'66'-HeptaCB-(184)	2014/04/21	0.0035 U, EDL=0.0035		ng/L	
			22'3455'6-HeptaCB-(185)	2014/04/21	0.0064 U, EDL=0.0064		ng/L	
			22'34566'-HeptaCB-(186)	2014/04/21	0.0038 U, EDL=0.0038		ng/L	
			22'34'55'6-HeptaCB-(187)	2014/04/21	0.0049 U, EDL=0.0049		ng/L	
			22'34'566'-HeptaCB-(188)	2014/04/21	0.0047 U, EDL=0.0047		ng/L	
			233'44'55'-HeptaCB-(189)	2014/04/21	0.0062 U, EDL=0.0062		ng/L	
			233'44'56-HeptaCB-(190)	2014/04/21	0.0055 U, EDL=0.0055		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			233'44'5'6-HeptaCB-(191)	2014/04/21	0.0051 U, EDL=0.0051		ng/L	
			233'455'6-HeptaCB-(192)	2014/04/21	0.0058 U, EDL=0.0058		ng/L	
			22'33'44'55'-OctaCB-(194)	2014/04/21	0.0077 U, EDL=0.0077		ng/L	
			22'33'44'56-OctaCB-(195)	2014/04/21	0.0080 U, EDL=0.0080		ng/L	
			22'33'44'56'-OctaCB-(196)	2014/04/21	0.0066 U, EDL=0.0066		ng/L	
			22'33'44'66'OctaCB-(197)	2014/04/21	0.0047 U, EDL=0.0047		ng/L	
			OctaCB-(198)+(199)	2014/04/21	0.0067 U, EDL=0.0067		ng/L	
			22'33'4566'-OctaCB-(200)	2014/04/21	0.0043 U, EDL=0.0043		ng/L	
			22'33'45'66'-OctaCB-(201)	2014/04/21	0.0043 U, EDL=0.0043		ng/L	
			22'33'55'66'-OctaCB-(202)	2014/04/21	0.0057 U, EDL=0.0057		ng/L	
			22'344'55'6-OctaCB-(203)	2014/04/21	0.0065 U, EDL=0.0065		ng/L	
			22'344'566'-OctaCB-(204)	2014/04/21	0.0044 U, EDL=0.0044		ng/L	
			233'44'55'6-OctaCB-(205)	2014/04/21	0.0061 U, EDL=0.0061		ng/L	
			22'33'44'55'6-NonaCB-(206)	2014/04/21	0.0098 U, EDL=0.0098		ng/L	
			22'33'44'566'-NonaCB-(207)	2014/04/21	0.0070 U, EDL=0.0070		ng/L	
			22'33'455'66'-NonaCB-(208)	2014/04/21	0.0091 U, EDL=0.0091		ng/L	
			DecaCB-(209)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			Monochlorobiphenyl	2014/04/21	0.012 U, EDL=0.012		ng/L	
			Dichlorobiphenyl	2014/04/21	0.082 , EDL=0.019		ng/L	
			Trichlorobiphenyl	2014/04/21	0.018 U, EDL=0.018		ng/L	
			Tetrachlorobiphenyl	2014/04/21	0.021 U, EDL=0.021		ng/L	
			Pentachlorobiphenyl	2014/04/21	0.011 U, EDL=0.011		ng/L	
			Hexachlorobiphenyl	2014/04/21	0.017 U, EDL=0.017		ng/L	
			Heptachlorobiphenyl	2014/04/21	0.0071 U, EDL=0.0071		ng/L	
			Octachlorobiphenyl	2014/04/21	0.0080 U, EDL=0.0080		ng/L	

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Maxxam Job #: B455783
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4C0830

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Nonachlorobiphenyl	2014/04/21	0.0098 U, EDL=0.0098		ng/L	
			Decachlorobiphenyl	2014/04/21	0.011 U, EDL=0.011		ng/L	
			Total PCB	2014/04/21	0.102		ng/L	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B455783
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VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Kay Shaw, C. Chem, Sr Scientific Specialist, HRMS Services

Owen Cosby, BSc.C.Chem, Supervisor, HRMS Services

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Basin 21 Storm Water Sampling and Storm Water Solids Sampling and Analysis Data March/April Sampling Events, Source Control Evaluation, Burgard Industrial Park, Portland, Oregon

Bridgewater Group, Inc., 2014

Basin 21 Storm Water and Storm Water Solids Sampling and Analysis Data
March/April Sampling Events
Source Control Evaluation
Burgard Industrial Park
Portland, Oregon

TO: Jim Orr/Oregon DEQ

CC: Mat Cusma/Schnitzer
Mark Bartee/Schnitzer

FROM: Ross Rieke/Bridgewater Group

DATE: June 6, 2014

This memorandum presents the results of the March/April, 2014 storm water and storm water solids sampling and analysis performed at Basin 21 at the Burgard Industrial Park (BIP) in Portland, Oregon (Figure 1, Figure 2). The sampling and analysis was performed in general accordance with the May 1, 2012 *Basin 21 Storm Water and Storm Water Solids Sampling and Analysis Plan*. Some details of the May 1, 2012 sampling plan were altered as follows:

- Smoke testing performed on September 13, 2012 concluded that the pipe entering from the northwest into Sample Point 5 (SP-5) manhole was a stub that did not connect to any drainage features. Thus, no storm water sample was collected at SP-5.
- Flow testing on September 5, 2012 and September 26, 2012 concluded that there was no lateral pipe entering from the northwest into manhole SP-6. Thus, only a single storm water sample was collected at SP-6, representing what is eventually discharged at Outfall 21.

The storm water data presented in this memorandum reflects these changes in the Basin 21 storm water sampling program. Figure 3 shows the currently inferred Basin 21 area based on these smoke and flow tests.

Basin 21 Description

Basin 21 consists of an approximately 18 acre area in the northeast corner of the BIP. Figure 3 shows the approximate boundaries of Basin 21. The Basin 21 boundaries are based on the drainage basins shown in the Storm Water Pollution Prevention and Control (SWPC) plans prepared by the site operators within Basin 21, 1994 City storm sewer as-built drawings, and an August 11, 2011 City of Portland video survey of the western portion of the Basin 21 conveyance pipes.

There are three primary areas within Basin 21 where surface water runoff occurs (as opposed to infiltrating into the ground surface):

- Former Boydstun area
- Pro Truck Lines area
- Portland Container area

Figure 3 shows these Basin 21 areas.

The former Boydstun area is about 7.6 acres and is almost entirely paved. Storm water runoff is captured in catch basins and conveyed by gravity to a float-activated pump station located in the northeast corner of the area. The storm water is pumped from the pump station through buried pipes to a manhole near the south western corner of the area where it flows to the west and comingles with other Basin 21 runoff. A portion of the former Boydstun area is currently leased by SSI and used to park trucks, trailers and equipment. Boydstun formerly manufactured automobile hauling trailers on the site.

The Pro Truck Lines area is outside the BIP but does contribute storm water runoff to the Basin 21 system. The area is about 6.2 acres and is mostly paved. Storm water runoff is captured in catch basins and conveyed by gravity to the southeast corner of the former Romar area where it comingles with the runoff from the former Boydstun area and flows south in a buried pipe. The building was used by Ro-Mar Transportation Systems until 2006 when RLR Investments acquired the property. The building is currently used by Pro Truck Lines.

Approximately 1/3 of Portland Container's property east of the railroad tracks drains to Basin 21. Storm water runoff from this approximate 4.2 acre, mostly unpaved area flows to a catch basin near the site office and is conveyed by a buried pipe to a small retention basin and then to a multi-stage, improvised storm water filter system. The treated water is discharged from the treatment system to a manhole where it comingles with the runoff flowing south from the junction of the former Boydstun and former Romar drainage systems. During heavy rainfall events, the storm water basin overflows and water flows directly to the manhole, bypassing the filter system.

The runoff from these areas combine and is discharged to the IT Slip at Outfall 21 as shown on Figure 3. Precipitation falling on the unpaved areas west and south of the former Boydstun area and the eastern portion of the Portland Container area (aside from areas around any unknown catch basins) infiltrates into the ground rather than flow into the Basin 21 storm water collection and conveyance system.

Basin 21 Storm Water Sampling and Analysis

Storm Water Sample Collection

Basin 21 storm water samples were collected on March 28, 2014 at four points shown on Figure 3. The four sample points were:

Sample Point 1 – Manhole at southwest edge of former Boydstun area where storm water exits the former Boydstun area. This sample location is representative of storm water runoff from the former Boydstun site.

Sample Point 2 - Manhole at southwest corner of Pro Truck Lines area. This storm water location is representative of storm water runoff from the Pro Truck Lines site that flows onto the BIP and is subsequently comingled with the other Basin 21 runoff.

Sample Point 3 – Filter treatment system discharge pipe just above a catch basin at western edge of Portland Container. This sample location is representative of storm water runoff from the western portion of the Portland Container site that is subsequently comingled with the other Basin 21 runoff.

Sample Point 6 – Manhole about 280 feet upgradient from outfall. This location is representative of storm water that is discharged to the slip at Outfall 21. Based on when discharge from the former Boydstun property (i.e., flow at SP-1) was observed to begin

and the specific timing of the SP-6 sample collection, SP-6 may not have included any contribution from the former Boydstun property during the March 28, 2014 sampling event (i.e. flow may not have been occurring at SP-1 when SP-6 was collected, as discussed below).

Table 1 presents the rainfall conditions preceding and during the storm water sampling event. Based on past observations of storm events at the site, discharge from Basin 21 is not expected to have occurred prior to 5:00 AM, and would have begun with the 0.14 inches of precipitation[1] falling between 5:00 AM and 6:00 AM[2]. Given that samples SP2 and SP3 were collected at 6:15 and 7:05 AM, respectively, it can be inferred that these samples were collected within the first three hours of discharge[3]. It is likely that storm water flow at SP3 had begun even more recently as the Portland Container storm water treatment system does not start operating (and discharging) until after a significant amount of rainfall has occurred (i.e., likely not until later in the 5:00 AM to 6:00 AM hour).

Sample SP6 was collected shortly after the first three hours of flow given that the sample was collected at 9:15 AM and flow was observed at the SP6 location when the field crew arrived at about 6:00 AM. Given that the rainfall event had not started in earnest until sometime between 5:00 AM and 6:00 AM, SP6 is inferred to have been collected within the first four hours of discharge. Given the pump-based flows at SP3 (Portland Container treatment system) and SP1 (see discussion below) storm water runoff from the entire Basin 21 was not likely present at SP6 until after 9:00 AM and the fact that SP6 was not collected in the first three hours is likely not relevant to the representativeness of the SP6 sample.

SP1 was collected at 10:00 AM, several hours after the start of the rainfall event. However, flow at SP1 is controlled by a float-activated sump pump and based on field observations the pump did not turn on (i.e. flow was not observed at SP1) until after 9:00 AM. Thus, sample SP1 was collected within the first three hours of flow at SP1.

The rainfall occurring during the 24-hours preceded the sampled storm event (0.17 inch) slightly exceeded the “target” of 0.1 inch. Finally, the storm event was predicted to exceed (and did actually exceed) 0.2-inch of rainfall, and the event was expected to last (and did actually last) for more than three hours.

Given the above sampling conditions, the March 28, 2014 sample is representative of typical storm water discharging from Basin 21. The minor deviations from the “target” conditions are not anticipated to have had a material effect on the representativeness of the data. Comparison of the March 28, 2014 sample analysis data with the previous Basin 21 samples, including with the March 5, 2013 event which clearly met all target rainfall event conditions, shows consistent chemical concentrations and indicates that strictly meeting the target conditions is not necessary to obtain representative storm water data.

Storm Water Sample Analysis

Basin 21 storm water samples were analyzed for the following:

- PCB aroclors, homologs, and congeners
- Phthalates

[1] Based on data from the City of Portland Shipyard Rain Gauge located about 2000 feet southeast of Basin 21.

[2] Pacific Standard Time

[3] Flow was observed at the Basin 21 sample points SP2, SP3, and SP6 when the field sampling crew arrived at the site at about 6:00 AM, shortly after sunrise and, thus, the precise time of the start of flow is not known.

- Dioxins/furans
- Butyltins
- Aluminum, antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, and zinc
- Polycyclic aromatic hydrocarbons (PAHs)
- Organochlorine pesticides
- Petroleum Hydrocarbons (gasoline, diesel, and heavy oil)
- Total suspended solids (TSS)
- Total organic carbon (TOC)

Table 2 presents the results of the Basin 21 storm water sample analyses. Copies of the analytical laboratory reports are provided in Appendix A. Review of the laboratory QA/QC results did not indicate any issues requiring corrective action.

Basin 21 Storm Water Solids Sampling and Analysis

Storm water solids samples were collected on April 9, 2014 from two sample points noted on Figure 3. The two sample points were:

> **Sample Point 1** – Manhole at southwest edge of former Boydstun area where storm water exits the former Boydstun area. This sample location is representative of storm water runoff from the former Boydstun site.
>
> **Sample Point 2** - Manhole at southwest corner of Pro Line Truck area. This storm water location is representative of storm water runoff from the Pro Line Truck site that flows onto the BIP and is subsequently comingled with the other Basin 21 runoff.

The storm water solids samples were collected in stainless-steel sampling devices that had been placed in the storm water pipes at the sample locations for several months. Solids collection apparatuses had been placed at the other Basin 21 sample locations also but sufficient volume of solids had not accumulated in the apparatuses.

The storm water solids samples were analyzed for the following:

- PCB aroclors;
- Phthalates;
- Dioxins/furans;
- Butyltins;
- Aluminum, antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, and zinc;
- Polycyclic aromatic hydrocarbons (PAHs);
- Organochlorine pesticides;
- Petroleum hydrocarbons (gasoline, diesel, and heavy oil fractions); and

- Total organic carbon.

There was insufficient sample volume to analyze for PCB congeners and homologs.

Table 3 presents the results of the Basin 21 storm water solids laboratory analyses. Copies of the analytical laboratory reports are provided in Appendix A. Review of the laboratory QA/QC results did not indicate any issues requiring corrective action.

Attachments:

Table 1 – Storm Water Sampling Event Rainfall Data, 3/5/2013 Sampling Event
Table 2 – Storm Water Sample Analytical Laboratory Results
Table 3 – Storm Water Solids Sample Analytical Laboratory Results
Figure 1 – Site Location Map
Figure 2 – Site Plan, Burgard Industrial Park
Figure 3 – Basin 21 Storm Water Sample Locations
Appendix A – Analytical Laboratory Reports

Tables

Table 1
Storm Water Sampling Event Rainfall Data
3/28/2014 Sampling Event
Burgard Industrial Park Basin 21

Date	Daily Total	Hourly Rain Fall (0.01 inches)																							
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
3/16/14	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	27	16	9	11	3	0	0
3/17/14	6	0	0	0	0	0	0	0	0	0	0	5	1	0	0	0	0	0	0	0	0	0	0	0	0
3/18/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/19/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/20/14	4	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	0
3/21/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/22/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/23/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/24/14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3/25/14	23	0	0	0	0	5	10	1	0	0	0	1	0	1	0	4	0	1	0	0	0	0	0	0	0
3/26/14	45	0	0	1	2	0	5	8	0	0	0	1	3	0	11	0	1	1	0	0	2	2	0	7	1
3/27/14	21	0	0	9	0	2	1	0	0	0	0	0	4	3	0	0	0	0	0	0	0	0	0	0	2
3/28/14	70	3	0	3	0	2	14	6	3	7	9	4	4	6	6	0	0	1	0	0	0	2	0	0	0
								SP2	SP3		SP6	SP1													

SP2 collected 6:15. SP3 collected 7:05. SP6 collected 9:15. SP1 collected 10:30

Hours are Pacific Standard Time
Data from Shipyard Rain Gage - 8900 N. Sever Road
Sampling Day
Sampling Hours

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 21

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix D "Typical PH Values"[2]	11/19/2012 SWP1	11/19/2012 SWP2	11/19/2012 SWP3	11/19/2012 SWP6	3/5/2013 SWP1	3/5/2013 SWP2	3/5/2013 SWP3	3/5/2013 SWP6	3/28/2014 SWP1	3/28/2014 SWP2	3/28/2014 SWP3	3/28/2014 SWP6
PAHs (ug/l)														
Acenaphthene	0.2		0.0094 U	0.037 U	0.039 U	0.094 U	0.052 J	0.075 J	0.052 U	0.046 J	0.019 U	0.020 U	0.039 U	0.048 U
Acenaphthylene	0.2		0.0094 U	0.037 U	0.039 U	0.094 U	0.040 U	0.042 U	0.052 U	0.039 U	0.019 U	0.020 U	0.039 U	0.048 U
Anthracene			0.0094 U	0.037 U	0.039 U	0.094 U	0.040 U	0.042 U	0.052 U	0.039 U	0.019 U	0.020 U	0.039 U	0.048 U
Benzo(a)anthracene	0.018		0.012 J	0.038 J	0.039 U	0.10 J	0.040 U	0.042 U	0.061 J	0.041 J	0.019 U	0.030 J	0.072 J	0.10
Benzo(a)pyrene	0.018		0.026 J	0.093 J	0.12 U	0.23 J	0.060 U	0.063 U	0.10 J	0.12 U	0.029 U	0.048 J	0.14	0.18
Benzo(b)fluoranthene	0.018						0.060 U	0.080 J	0.16	0.078 J				
Benzo(b+k)fluoranthene	0.018		0.032	0.13	0.088 J	0.28					0.058 U	0.063	0.23	0.26
Benzo(g,h,i)perylene	0.2		0.017 J	0.074 J	0.077 U	0.23	0.080 U	0.084 J	0.12	0.079	0.039 U	0.067	0.18	0.24
Benzo(k)fluoranthene	0.018						0.060 U	0.063 U	0.078 U	0.058 U				
Chrysene	0.018		0.018 J	0.084	0.039 U	0.19	0.040 U	0.042 U	0.10	0.039 U	0.019 U	0.058	0.18	0.20
Dibenzo(a,h)anthracene	0.018		0.0094 U	0.037 U	0.039 U	0.094 U	0.040 U	0.042 U	0.052 U	0.039 U	0.019 U	0.020 U	0.039 U	0.048 U
Fluoranthene	0.2		0.026	0.086	0.042 J	0.19 J	0.040 U	0.074 J	0.11	0.072 J	0.023 J	0.12	0.21	0.22
Fluorene	0.2		0.012 J	0.037 U	0.039 U	0.094 U	0.040 U	0.042 U	0.052 U	0.039 U	0.019 U	0.020 J	0.039 U	0.048 U
Indeno(1,2,3-cd)pyrene	0.018		0.012 J	0.037 U	0.039 U	0.11 J	0.040 U	0.042 U	0.063 J	0.039 U	0.019 U	0.020 J	0.10	0.13
Naphthalene	0.2		0.026 JB	0.075 U	0.077 U	0.19 U	0.080 U	0.084 U	0.10 U	0.078 U	0.039 U	0.039 U	0.078 U	0.10 U
Phenanthrene	0.2		0.030	0.052 J	0.039 U	0.094 U	0.049 J	0.078 J	0.052 U	0.065 J	0.024 J	0.10	0.086	0.081 J
Pyrene	0.2		0.026	0.12	0.076 J	0.29	0.040 U	0.13	0.19	0.13	0.019 U	0.13	0.32	0.35
Total Detected PAHs		1	0.25	0.67	0.21	1.6	0.10	0.52	0.91	0.50	0.047	0.65	1.5	1.8
PCBs (ug/l)														
Aroclor 1016	0.96		0.022 U	0.043 U	0.043 U	0.021 U	0.010 U	0.020 U	0.019 U	0.020 U	0.010 U	0.0094 U	0.019 U	0.019 U
Aroclor 1221	0.034		0.022 U	0.043 U	0.043 U	0.021 U	0.010 U	0.020 U	0.019 U	0.020 U	0.010 U	0.0094 U	0.019 U	0.019 U
Aroclor 1232	0.034		0.022 U	0.043 U	0.043 U	0.021 U	0.010 U	0.020 U	0.019 U	0.020 U	0.010 U	0.019 U	0.019 U	0.019 U
Aroclor 1242	0.034		0.022 U	0.043 U	0.043 U	0.021 J	0.010 U	0.020 U	0.019 U	0.020 U	0.010 U	0.0094 U	0.030 J	0.021 J
Aroclor 1248	0.034		0.022 U	0.043 U	0.043 U	0.021 U	0.010 U	0.020 U	0.019 U	0.020 U	0.010 U	0.0094 U	0.019 U	0.019 U
Aroclor 1254	0.034		0.022 U	0.043 U	0.043 U	0.059	0.010 U	0.020 U	0.038 J	0.020 U	0.010 U	0.0094 U	0.14	0.092
Aroclor 1260	0.034		0.022 U	0.043 U	0.043 U	0.047	0.0096 U	0.020 U	0.029 J	0.020 U	0.010 U	0.0094 U	0.12	0.077
Total Detected PCB aroclors	0.000064		0.00	0.00	0.00	0.11	0.00	0.00	0.067	0.00	0.00	0.00	0.29	0.19
PCB Congeners (ng/l)														
2-MonoCB-(1)			0.0081 J	0.022 J	0.0041 U	0.023 J	0.010 J	0.0086 J	0.014 U	0.0078 U	0.0047 U	0.015 U	0.053 J	0.014 U
3-MonoCB-(2)			0.0040 J	0.010 J	0.0013 U	0.0054 J	0.0055 J	0.0022 U	0.0062 U	0.0027 U	0.0033 U	0.0034 U	0.0085 J	0.0027 J
4-MonoCB-(3)			0.0071 J	0.017 J	0.0033 U	0.018 J	0.0083 U	0.0072 U	0.0058 U	0.0056 U	0.0032 U	0.0071 U	0.027 U	0.0077 U
22'-DiCB-(4)			0.038 J	0.18	0.049 J	0.18	0.11	0.19	0.47	0.20	0.0355 J	0.17	0.37	0.14
2,3-DiCB-(5)			0.014 U	0.018 J	0.016 U	0.017 U	0.011 U	0.018 U	0.021 U	0.017 U	0.022 U	0.015 U	0.012 U	0.0061 U
2,3'-DiCB-(6)			0.017 U	0.060 J	0.026 J	0.097	0.041 U	0.050 U	0.22	0.047 U	0.021 U	0.035 U	0.17	0.0495 J
2,4-DiCB-(7)			0.013 U	0.013 J	0.014 U	0.018 J	0.0089 U	0.015 U	0.038 J	0.014 U	0.023 U	0.016 U	0.034 J	0.010 J
2,4'-DiCB-(8)			0.084 J	0.28	0.096 J	0.38	0.15	0.20	0.79	0.18	0.049 J	0.21	0.72	0.23
2,5-DiCB-(9)			0.013 U	0.021 U	0.014 U	0.027 U	0.0118 J	0.016 U	0.074 J	0.014 U	0.021 U	0.014 U	0.045 J	0.014 J
2,6-DiCB-(10)			0.017 U	0.015 U	0.016 U	0.017 U	0.0039 U	0.0083 J	0.018 U	0.0062 U	0.0078 U	0.0066 U	0.014 J	0.0054 J
3,3'-DiCB-(11)			0.12	0.28	0.18	0.25	0.060 U	0.24	0.35	0.24	0.057 J	0.43	0.44	0.195
DiCB-(12)+(13)			0.012 U	0.031 U	0.014 U	0.050 U	0.026 U	0.027 U	0.084 U	0.033 U	0.023 U	0.028 J	0.088 J	0.027 U
3,5-DiCB-(14)			0.012 U	0.0033 U	0.014 U	0.015 U	0.0087 U	0.014 U	0.017 U	0.013 U	0.022 U	0.015 U	0.010 U	0.0060 U
4,4'-DiCB-(15)			0.078 J	0.25	0.14	0.50	0.11	0.23	0.79	0.25	0.039 U	0.14	1.0	0.324
22'3-TriCB-(16)			0.047 J	0.20	0.081 J	0.29	0.0033 U	0.0058 U	0.0060 U	0.0044 U	0.038 J	0.15	0.67	0.24
22'4-TriCB-(17)			0.042 J	0.20	0.084 J	0.34	0.11	0.24	0.65	0.25	0.028 U	0.13	0.74	0.23
TriCB-(18)+(30)			0.088 J	0.39	0.18 J	0.73	0.23	0.50	1.3	0.50	0.069 J	0.27	1.6	0.52
22'6-TriCB-(19)			0.016 J	0.062 J	0.033 J	0.14	0.034 J	0.070 J	0.26	0.077 J	0.012 J	0.049 J	0.28	0.0921 J
TriCB-(20) + (28)			0.17 J	0.62	0.37	1.5	0.33	0.75	2.8	0.84	0.12 J	0.46	3.75	1.23
TriCB-(21)+(33)			0.10 J	0.39	0.16 J	0.57	0.20	0.44	1.2	0.48	0.074 J	0.30	1.3	0.445
234'-TriCB-(22)			0.065 J	0.26	0.13	0.47	0.14	0.29	0.90	0.34	0.055 J	0.20	1.17	0.392
235-TriCB-(23)			0.0035 U	0.0033 U	0.0035 U	0.0037 U	0.0031 U	0.0020 U	0.0066 U	0.0025 U	0.0029 U	0.0019 U	0.0073 U	0.0031 U
236-TriCB-(24)			0.0022 U	0.014 J	0.0042 U	0.0029 U	0.13	0.27	0.60	0.29	0.0030 U	0.0048 U	0.0067 U	0.0017 U
23'4-TriCB-(25)			0.012 J	0.044 J	0.025 J	0.099	0.024 U	0.057 J	0.20	0.062 J	0.0077 J	0.032 J	0.221	0.0724 J
TriCB-(26)+(29)			0.027 J	0.10 J	0.052 J	0.23	0.060 J	0.12 J	0.43	0.13 J	0.019 J	0.073 J	0.51	0.17 J
23'6-TriCB-(27)			0.0071 J	0.031 J	0.020 J	0.084 J	0.014 U	0.040 J	0.13 U	0.043 J	0.0041 U	0.020 U	0.207	0.067 J
24'5-TriCB-(31)			0.13	0.52	0.25	0.87	0.27	0.62	1.8	0.67	0.099	0.38	2.32	0.77

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 21

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix D "Typical PH Values"[2]	11/19/2012				3/5/2013				3/28/2014			
			SWP1	SWP2	SWP3	SWP6	SWP1	SWP2	SWP3	SWP6	SWP1	SWP2	SWP3	SWP6
24'6-TriCB-(32)			0.030 J	0.12	0.077 J	0.33	0.073 J	0.15	0.52	0.16	0.023 J	0.087 J	0.801	0.26
23'5'-TriCB-(34)			0.0038 U	0.0035 U	0.0038 U	0.0040 U	0.0029 U	0.0019 U	0.0062 U	0.0024 U	0.0029 U	0.0019 U	0.0073 U	0.0031 U
33'4-TriCB-(35)			0.0036 U	0.014 J	0.0096 J	0.029 J	0.0030 U	0.012 U	0.043 J	0.014 J	0.0026 U	0.012 J	0.052 J	0.018 J
33'5-TriCB-(36)			0.0030 U	0.0028 U	0.0030 U	0.0032 U	0.0026 U	0.0016 U	0.0055 U	0.0021 U	0.0026 U	0.0017 U	0.0065 U	0.0027 U
344'-TriCB-(37)			0.080 J	0.26	0.17	0.61	0.12	0.23	0.79	0.25	0.047 J	0.15	1.6	0.49
345-TriCB-(38)			0.0034 U	0.0032 U	0.0034 U	0.0037 U	0.0030 U	0.0019 U	0.0063 U	0.0025 U	0.0028 U	0.0018 U	0.0069 U	0.0029 U
34'5-TriCB-(39)			0.0032 U	0.0040 U	0.0032 U	0.0091 J	0.0028 U	0.0018 U	0.012 J	0.0023 U	0.0029 U	0.0019 U	0.018 J	0.0042 J
TetraCB-(40)+(41)+(71)			0.11 J	0.34	0.33	1.3	0.19 J	0.40	2.3	0.46	0.060 J	0.19 J	2.7	0.888
22'34'-TetraCB-(42)			0.056 J	0.18	0.17	0.71	0.10	0.21	1.3	0.25	0.032 J	0.100	1.7	0.52
22'35-TetraCB-(43)			0.0074 U	0.028 J	0.023 J	0.10	0.011 U	0.036 J	0.18	0.045 J	0.0023 U	0.0096 J	0.183	0.059 J
TetraCB-(44)+(47)+(65)			0.23 J	0.58	0.69	2.5	0.30 J	0.62	4.2	0.79	0.099 J	0.28 J	5.6	1.7
TetraCB-(45)+(51)			0.028 J	0.11 J	0.11 J	0.43	0.059 J	0.13 J	0.78	0.17 J	0.016 J	0.057 J	0.943	0.28
22'36'-TetraCB-(46)			0.011 J	0.040 J	0.041 J	0.18	0.022 J	0.043 U	0.30	0.063 J	0.0055 J	0.021 J	0.322	0.11
22'45-TetraCB-(48)			0.031 J	0.11	0.087 J	0.34	0.059 J	0.14	0.66	0.17	0.020 J	0.070 J	0.77	0.25
TetraCB-(49)+TetraCB-(69)			0.12 J	0.30	0.32	1.4	0.15 J	0.33	2.5	0.40	0.049 J	0.14 J	3.2	0.99
TetraCB-(50)+(53)			0.024 J	0.073 J	0.077 J	0.37	0.039 J	0.088 J	0.63	0.11 J	0.012 J	0.040 J	0.694	0.221
22'55'-TetraCB-(52)			0.29	0.56	0.74	3.2	0.28	0.61	5.5	0.73	0.092 J	0.24	7.2	2.3
22'66'-TetraCB-(54)			0.0036 U	0.0023 U	0.0030 U	0.0039 U	0.0025 U	0.0029 U	0.0084 U	0.0026 U	0.00081 U	0.0042 U	0.0081 U	0.0029 U
233'4-TetraCB-(55)			0.0034 U	0.0048 U	0.0062 U	0.012 U	0.0018 U	0.0016 U	0.0051 U	0.0031 U	0.0021 U	0.0038 U	0.0047 U	0.0035 U
233'4'-Tetra CB(56)			0.072 J	0.18	0.21	0.68	0.10	0.17	1.2	0.21	0.034 J	0.084 J	1.69	0.551
233'5-TetraCB-(57)			0.0035 U	0.0048 U	0.0062 U	0.012 U	0.0019 U	0.0016 U	0.29	0.0032 U	0.0035 U	0.0070 J	0.0042 U	0.134
233'5'-TetraCB-(58)			0.0033 U	0.0046 U	0.0060 U	0.012 U	0.0019 U	0.0017 U	0.0053 U	0.0033 U	0.0019 U	0.0034 U	0.0043 U	0.0032 U
TetraCB-(59)+(62)+(75)			0.014 J	0.054 J	0.061 J	0.22 J	0.026 J	0.058 J	0.40	0.072 J	0.0090 J	0.027 J	0.47	0.143 J
2344'-TetraCB -(60)			0.029 U	0.091 J	0.089 J	0.27	0.052 J	0.083 J	0.48	0.11	0.018 U	0.052 J	0.67	0.221
TetraCB-(61)+(70)+(74)+(76)			0.35 J	0.70	0.77	2.7	0.38 J	0.68	5.0	0.82	0.14 J	0.33 J	6.9	2.29
234'5-TetraCB-(63)			0.0048 J	0.015 J	0.012 J	0.039 J	0.0069 J	0.011 J	0.069 J	0.016 J	0.0025 J	0.0052 U	0.083 J	0.0274 J
234'6-TetraCB-(64)			0.090 J	0.27	0.30	1.1	0.14	0.30	2.0	0.36	0.047 J	0.13	2.6	0.81
23'44'-TetraCB-(66)			0.15	0.32	0.39	1.4	0.19	0.32	2.8	0.40	0.058 J	0.16	3.7	1.22
23'45-TetraCB-(67)			0.0050 J	0.013 J	0.010 J	0.034 J	0.0080 J	0.0099 U	0.088 J	0.019 J	0.0024 J	0.0066 J	0.101	0.0322 J
23'45'-TetraCB-(68)			0.0031 U	0.0043 U	0.011 U	0.017 U	0.0017 U	0.0015 U	0.021 J	0.0071 J	0.0018 U	0.0034 U	0.034 J	0.0127 J
23'55'-TetraCB-(72)			0.0033 U	0.0046 U	0.0059 U	0.023 J	0.0018 U	0.0016 U	0.032 J	0.0038 U	0.0018 U	0.0032 U	0.049 J	0.0153 J
23'5'6-TetraCB-(73)			0.0037 U	0.0015 U	0.0029 U	0.0031 U	0.0017 U	0.0017 U	0.0024 U	0.00084 U	0.00094 U	0.0011 U	0.0038 U	0.0013 U
33'44'-TetraCB-(77)			0.032 J	0.054 J	0.073 J	0.24	0.0019 U	0.035 U	0.27	0.049 J	0.0091 J	0.023 J	0.49	0.161
33'45-TetraCB-(78)			0.0035 U	0.0049 U	0.0063 U	0.012 U	0.0018 U	0.0016 U	0.0050 U	0.0031 U	0.0019 U	0.0034 U	0.0043 U	0.0032 U
33'45'-TetraCB(79)			0.0059 U	0.0087 J	0.017 U	0.046 J	0.0016 U	0.0014 U	0.18	0.0074 J	0.0018 J	0.0029 U	0.074 J	0.0395 J
33'55'-TetraCB-(80)			0.0031 U	0.0044 U	0.0057 U	0.011 U	0.0017 U	0.0015 U	0.0048 U	0.0030 U	0.0017 U	0.0030 U	0.0037 U	0.0027 U
344'5-TetraCB-(81)			0.0038 U	0.0053 U	0.0069 U	0.013 U	0.021 U	0.0017 U	0.0054 U	0.0034 U	0.0023 U	0.0040 U	0.0051 U	0.0037 U
22'33'4-PentaCB-(82)			0.067 J	0.088 J	0.20	0.68	0.048 J	0.071 J	0.88	0.086 J	0.017 J	0.030 J	1.6	0.554
PentaCB-(83)+(99)			0.27	0.32	0.87	2.8	0.19 J	0.24	4.2	0.30	0.058 J	0.091 J	7.5	2.62
22'33'6-PentaCB-(84)			0.15	0.20	0.52	1.6	0.094 J	0.16	2.6	0.20	0.032 J	0.052 J	3.8	1.19
PentaCB-(85)+(116)+(117)			0.088 J	0.12 J	0.28 J	0.85	0.048 J	0.071 J	1.4	0.10 J	0.016 J	0.026 J	1.8	0.68
PentaCB-(86)(87)(97)(109)(119)(125)			0.41 J	0.53 J	1.2	4.0	0.28 J	0.40 J	5.6	0.48 J	0.092 J	0.14 J	9.5	3.33
PentaCB-(88)+(91)			0.061 J	0.091 J	0.22	0.71	0.046 J	0.0681 J	1.2	0.096 J	0.015 J	0.025 J	1.9	0.646
22'346'-PentaCB-(89)			0.0026 U	0.0080 J	0.016 J	0.057 J	0.0013 U	0.0059 U	0.086 J	0.0091 U	0.0028 U	0.0032 U	0.12	0.0353 J
PentaCB-(90)+(101)+(113)			0.51	0.64	1.6	5.1	0.33	0.48	8.0	0.57	0.11 J	0.16 J	14	4.8
22'355'-PentaCB-(92)			0.096	0.12	0.32	1.0	0.059 J	0.082 J	1.7	0.11	0.019 J	0.030 J	2.7	0.93
PentaCB-(93)+(98)+(100)+(102)			0.016 J	0.028 J	0.0602 J	0.20 J	0.010 U	0.021 U	0.32 J	0.025 U	0.0044 J	0.010 J	0.46	0.16 J
22'356'-PentaCB-(94)			0.0026 U	0.0054 U	0.0098 U	0.024 J	0.0013 U	0.0054 U	0.042 J	0.0030 U	0.0030 U	0.0034 U	0.059 J	0.018 J
22'35'6-PentaCB-(95)			0.37	0.53	1.4	4.4	0.23	0.39	7.0	0.51	0.074 J	0.14	11	3.59
22'366'-PentaCB-(96)			0.0019 J	0.0048 J	0.0095 J	0.030 J	0.0023 U	0.0037 U	0.043 J	0.0055 U	0.0019 U	0.0016 U	0.080 J	0.026 J
22'45'6-PentaCB-(103)			0.0022 U	0.0046 U	0.0083 U	0.032 J	0.0011 U	0.0043 U	0.056 J	0.0025 U	0.0022 U	0.0026 U	0.069 J	0.0225 J
22'466'-PentaCB-(104)			0.00075 U	0.0011 U	0.00087 U	0.0014 U	0.0029 U	0.0045 U	0.0052 U	0.0045 U	0.0020 U	0.0018 U	0.0021 U	0.0017 U
233'44'-PentaCB-(105)			0.24	0.35	0.58	2.1	0.16	0.22	2.5	0.26	0.055 J	0.096	4.99	1.7
233'45-PentaCB-(106)			0.0042 U	0.0049 U	0.0035 U	0.0073 U	0.0079 J	0.0036 U	0.0072 U	0.0052 U	0.0023 U	0.0032 U	0.0050 U	0.0022 U
233'4'5-PentaCB-(107)			0.031 J	0.041 J	0.099	0.35	0.025 J	0.025 J	0.58	0.036 U	0.0076 J	0.011 J	0.78	0.28
PentaCB-(108)+(124)			0.018 J	0.028 J	0.059 J	0.20	0.014 U	0.016 U	0.30	0.021 U	0.0051 J	0.0087 J	0.46	0.17 J
PentaCB-(110)+(115)			0.77	0.99	2.6	8.2	0.54	0.72	12	0.88	0.18 J	0.29	24	8.2
233'55'-PentaCB-(111)			0.0018 U	0.0037 U	0.0067 U	0.0027 U	0.00087 U	0.0036 U	0.0054 U	0.0021 U	0.0020 U	0.0023 U	0.0095 U	0.0013 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 21

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix D "Typical PH Values"[2]	11/19/2012				3/5/2013				3/28/2014			
			SWP1	SWP2	SWP3	SWP6	SWP1	SWP2	SWP3	SWP6	SWP1	SWP2	SWP3	SWP6
233'56-PentaCB-(112)			0.0019 U	0.0039 U	0.0070 U	0.0028 U	0.00093 U	0.0038 U	0.0058 U	0.0022 U	0.0020 U	0.0022 U	0.0092 U	0.0012 U
2344'5-PentaCB-(114)			0.0101 J	0.016 J	0.022 J	0.080 J	0.0061 U	0.0094 U	0.102	0.012 J	0.0025 U	0.0034 U	0.18	0.0637 J
23'44'5-PentaCB-(118)			0.56	0.74	1.4	5.5	0.36	0.47	6.7	0.55	0.12	0.20	13	4.8
23'455'-PentaCB-(120)			0.0017 U	0.0036 U	0.0065 U	0.0026 U	0.00083 U	0.0034 U	0.017 U	0.0020 U	0.0019 U	0.0021 U	0.035 J	0.012 U
23'45'6-PentaCB-(121)			0.0018 U	0.0037 U	0.0067 U	0.0027 U	0.00086 U	0.0036 U	0.0054 U	0.0021 U	0.00200 U	0.0023 U	0.0094 U	0.0013 U
233'4'5'-PentaCB-(122)			0.0056 J	0.0092 J	0.011 U	0.065 J	0.0047 U	0.0045 U	0.097 J	0.0044 U	0.0025 U	0.0035 U	0.17	0.064 J
23'44'5'-PentaCB-(123)			0.0049 U	0.014 J	0.025 J	0.092 J	0.0051 U	0.0062 U	0.051 U	0.0056 U	0.0027 U	0.0038 U	0.13	0.045 J
33'44'5-PentaCB-(126)			0.0047 U	0.0054 U	0.013 U	0.025 J	0.0043 U	0.0036 U	0.020 U	0.0052 U	0.0025 U	0.0035 U	0.023 J	0.014 J
33'455'-PentaCB-(127)			0.0042 U	0.0048 U	0.0034 U	0.0072 U	0.0042 U	0.0035 U	0.0070 U	0.0051 U	0.0022 U	0.0031 U	0.029 J	0.0122 J
HexaCB-(128)+(166)			0.13 J	0.17 J	0.37	1.3	0.10 J	0.12 J	1.8	0.14 J	0.028 J	0.054 J	3.7	1.4
HexaCB-(129)+(138)+(163)			0.76	1.1	2.5	8.6	0.63	0.75	14	0.93	0.18 J	0.33	24	9.37
22'33'45'-HexaCB-(130)			0.047 J	0.064 J	0.15	0.52	0.034 J	0.045 J	0.79	0.047 U	0.011 J	0.018 J	1.31	0.50
22'33'46-HexaCB-(131)			0.010 U	0.016 J	0.037 J	0.13	0.0039 U	0.013 J	0.21	0.017 J	0.0077 U	0.010 U	0.30	0.11
22'33'46'-HexaCB-(132)			0.23	0.32	0.87	2.8	0.19	0.23	4.8	0.30	0.058 J	0.11	8.2	3.15
22'33'55'-HexaCB-(133)			0.0095 J	0.011 J	0.032 J	0.10	0.0033 U	0.0082 U	0.16	0.0060 U	0.0063 U	0.0082 U	0.26	0.097
HexaCB-(134)+(143)			0.030 U	0.046 J	0.12 J	0.44	0.028 J	0.030 U	0.73	0.048 J	0.0070 U	0.0091 U	1.0	0.437
HexaCB-(135)+(151)			0.14 J	0.21	0.67	2.0	0.12 J	0.15 J	3.1	0.17 J	0.031 J	0.064 J	6.4	2.5
22'33'66'-HexaCB-(136)			0.062 J	0.088 J	0.27	0.75	0.049 J	0.061 J	1.3	0.080 J	0.013 J	0.023 J	2.4	0.93
22'344'5-HexaCB-(137)			0.039 J	0.049 J	0.11	0.42	0.035 J	0.040 J	0.72	0.050 J	0.0071 U	0.015 J	1.2	0.40
HexaCB-(139)+(140)			0.013 J	0.015 J	0.043 J	0.15 J	0.0030 U	0.010 J	0.25	0.011 U	0.0058 U	0.0076 U	0.34	0.14 J
22'3455'-HexaCB-(141)			0.11	0.16	0.39	1.3	0.095 J	0.12	2.0	0.15	0.025 J	0.050 J	3.5	1.37
22'3456-HexaCB-(142)			0.0058 U	0.0041 U	0.011 U	0.019 U	0.0036 U	0.0035 U	0.041 U	0.0065 U	0.0067 U	0.0087 U	0.0067 U	0.0050 U
22'345'6-HexaCB-(144)			0.020 U	0.033 J	0.081 J	0.26	0.013 U	0.025 J	0.11 U	0.026 U	0.0042 U	0.0095 J	0.77	0.32
22'3466'-HexaCB-(145)			0.00086 U	0.0016 U	0.0017 U	0.0027 U	0.0015 U	0.0014 U	0.0018 U	0.0013 U	0.0019 U	0.0013 U	0.0018 U	0.0021 U
22'34'55'-HexaCB-(146)			0.085 J	0.12	0.32	1.1	0.079 J	0.082 J	1.7	0.11	0.018 J	0.033 J	2.6	1.0
HexaCB-(147)+(149)			0.38	0.60	1.7	5.4	0.35	0.43	10	0.58	0.083 J	0.17 J	16	6.3
22'34'56'-HexaCB-(148)			0.0011 U	0.0020 U	0.0021 U	0.0034 U	0.0020 U	0.0018 U	0.015 J	0.0017 U	0.0023 U	0.0017 U	0.0023 U	0.0080 U
22'34'66'-HexaCB-(150)			0.00081 U	0.0015 U	0.0032 J	0.0071 U	0.0014 U	0.0013 U	0.0076 U	0.0012 U	0.0018 U	0.0013 U	0.019 J	0.0075 J
22'3566'-HexaCB-(152)			0.00078 U	0.0015 U	0.0016 U	0.0033 U	0.0015 U	0.0014 U	0.0070 J	0.0013 U	0.0016 U	0.0012 U	0.012 U	0.0044 J
HexaCB-(153)+(168)			0.45	0.62	1.7	5.6	0.36	0.43	9.0	0.55	0.11 J	0.20	16	6.4
22'44'56'-HexaCB-(154)			0.0038 U	0.0044 U	0.020 U	0.063 J	0.0018 U	0.0017 U	0.083 J	0.0015 U	0.0020 U	0.0015 U	0.161	0.0661 J
22'44'66'-HexaCB-(155)			0.0012 U	0.0023 U	0.0025 U	0.0038 U	0.0020 U	0.0019 U	0.0023 U	0.0017 U	0.0020 U	0.0015 U	0.0020 U	0.0023 U
HexaCB-(156)+(157)			0.10 J	0.14 J	0.28	0.93	0.070 J	0.077 J	1.2	0.092 J	0.019 J	0.036 J	2.4	0.822
233'44'6-HexaCB-(158)			0.076 J	0.11	0.23	0.83	0.059 J	0.071 J	1.2	0.091 J	0.016 J	0.033 J	2.04	0.777
233'455'-HexaCB-(159)			0.0048 U	0.0075 J	0.018 J	0.069 J	0.0031 U	0.0061 U	0.10 U	0.0050 U	0.0040 U	0.0053 U	0.015 U	0.0842 J
233'456-HexaCB-(160)			0.0043 U	0.0030 U	0.0078 U	0.014 U	0.0023 U	0.0023 U	0.027 U	0.0043 U	0.0055 U	0.0071 U	0.0055 U	0.0041 U
233'45'6-HexaCB-(161)			0.0039 U	0.0028 U	0.0072 U	0.013 U	0.0023 U	0.0022 U	0.026 U	0.0041 U	0.0046 U	0.0060 U	0.0046 U	0.0034 U
233'4'55'-HexaCB-(162)			0.0048 U	0.0057 U	0.011 U	0.030 J	0.0031 U	0.0061 U	0.042 U	0.0049 U	0.0041 U	0.0054 U	0.16 U	0.068 U
233'4'5'6-HexaCB-(164)			0.050 J	0.070 J	0.175	0.50	0.036 J	0.047 J	0.74	0.053 J	0.012 J	0.020 J	1.26	0.522
233'55'6-HexaCB-(165)			0.0043 U	0.0030 U	0.0078 U	0.014 U	0.0026 U	0.0025 U	0.029 U	0.0047 U	0.0052 U	0.0067 U	0.0051 U	0.0038 U
23'44'55'-HexaCB-(167)			0.034 J	0.046 J	0.11	0.34	0.023 J	0.020 U	0.44	0.031 J	0.0070 J	0.012 J	0.83	0.31
33'44'55'-HexaCB-(169)			0.0050 U	0.0060 U	0.012 U	0.017 U	0.0032 U	0.0063 U	0.020 U	0.0051 U	0.0045 U	0.0060 U	0.017 U	0.0073 U
22'33'44'5-HeptaCB-(170)			0.13	0.21	0.60	1.8	0.10 J	0.12	2.7	0.16	0.021 U	0.046 J	4.6	1.6
HeptaCB-(171)+(173)			0.034 J	0.060 J	0.17 J	0.51	0.030 J	0.0365 J	0.73	0.043 J	0.0079 J	0.013 J	1.33	0.474
22'33'455'-HeptaCB-(172)			0.019 J	0.029 U	0.097 J	0.29	0.015 U	0.017 J	0.41	0.025 U	0.0042 U	0.0091 J	0.71	0.264
22'33'456'-HeptaCB-(174)			0.090 J	0.18	0.55	1.8	0.086 J	0.11	2.9	0.15	0.020 J	0.044 J	4.7	1.71
22'33'45'6-HeptaCB-(175)			0.0048 J	0.0074 U	0.021 J	0.059 J	0.0038 U	0.0028 U	0.089 U	0.0047 J	0.002 U	0.0032 U	0.22	0.076 J
22'33'466'-HeptaCB-(176)			0.012 J	0.018 J	0.066 J	0.19	0.011 J	0.013 J	0.33	0.016 J	0.0026 J	0.0048 J	0.59	0.208
22'33'45'6'-HeptaCB-(177)			0.055 J	0.092 J	0.28	0.93	0.049 J	0.057 J	1.5	0.076 J	0.013 J	0.025 J	2.5	0.932
22'33'55'6-HeptaCB-(178)			0.019 J	0.032 J	0.10	0.31	0.018 J	0.019 U	0.45	0.022 J	0.0046 U	0.0072 J	0.94	0.34
22'33'566'-HeptaCB-(179)			0.032 J	0.055 J	0.21	0.60	0.032 J	0.032 U	1.1	0.040 U	0.0065 J	0.015 J	2.0	0.74
HeptaCB-(180)+(193)			0.21	0.37	1.2	3.8	0.19 J	0.22	5.7	0.28	0.047 J	0.10 J	10.6	3.88
22'344'56-HeptaCB-(181)			0.0051 U	0.0052 U	0.0079 U	0.012 U	0.0024 U	0.0027 U	0.015 U	0.0050 U	0.0030 U	0.0028 U	0.055 J	0.0082 U
22'344'56'-HeptaCB-(182)			0.0022 U	0.0013 U	0.0031 U	0.0054 U	0.0012 U	0.0026 U	0.0028 U	0.0014 U	0.0020 U	0.0032 U	0.0092 U	0.0115 J
22'344'5'6-HeptaCB-(183)			0.044 J	0.090 J	0.32	1.1	0.045 J	0.060 J	1.8	0.087 J	0.012 J	0.025 J	2.8	1.0
22'344'66'-HeptaCB-(184)			0.0016 U	0.00091 U	0.0022 U	0.0039 U	0.00083 U	0.0019 U	0.0020 U	0.00098 U	0.0015 U	0.0024 U	0.0068 U	0.0014 U
22'3455'6-HeptaCB-(185)			0.0054 U	0.015 J	0.054 J	0.13	0.0059 U	0.0030 U	0.017 U	0.0055 U	0.0036 U	0.0034 U	0.011 U	0.0097 U
22'34566'-HeptaCB-(186)			0.0017 U	0.00097 U	0.0023 U	0.0042 U	0.00089 U	0.0020 U	0.0021 U	0.0010 U	0.0016 U	0.0026 U	0.0074 U	0.0016 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 21

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix D "Typical PH Values"[2]	11/19/2012 SWP1	11/19/2012 SWP2	11/19/2012 SWP3	11/19/2012 SWP6	3/5/2013 SWP1	3/5/2013 SWP2	3/5/2013 SWP3	3/5/2013 SWP6	3/28/2014 SWP1	3/28/2014 SWP2	3/28/2014 SWP3	3/28/2014 SWP6
22'34'55'6-HeptaCB-(187)			0.11	0.19	0.62	1.8	0.10 J	0.10	2.7	0.13	0.024 U	0.056 J	6.5	2.4
22'34'566'-HeptaCB-(188)			0.0026 U	0.0015 U	0.0036 U	0.0064 U	0.0013 U	0.0028 U	0.0030 U	0.0015 U	0.0020 U	0.0032 U	0.0091 U	0.0050 J
233'44'55'-HeptaCB-(189)			0.011 U	0.015 U	0.028 J	0.069 J	0.0029 U	0.0044 U	0.11	0.0068 U	0.0024 U	0.0066 U	0.19	0.070 J
233'44'56-HeptaCB-(190)			0.019 J	0.032 J	0.089 J	0.29	0.013 U	0.017 J	0.32 U	0.026 J	0.0040 J	0.0087 J	0.76	0.27
233'44'5'6-HeptaCB-(191)			0.0041 U	0.0074 U	0.021 J	0.068 J	0.0039 J	0.0022 U	0.048 U	0.0058 U	0.0022 U	0.0021 U	0.16	0.053 U
233'455'6-HeptaCB-(192)			0.0043 U	0.0044 U	0.0067 U	0.010 U	0.0020 U	0.0023 U	0.013 U	0.0042 U	0.0026 U	0.0024 U	0.0079 U	0.0069 U
22'33'44'55'-OctaCB-(194)			0.053 U	0.094 J	0.35	1.2	0.044 J	0.046 J	1.8	0.064 U	0.014 U	0.026 J	3.0	1.05
22'33'44'56-OctaCB-(195)			0.020 U	0.029 J	0.092 U	0.36	0.016 J	0.019 J	0.57	0.028 J	0.0052 U	0.0074 U	0.94	0.33
22'33'44'56'-OctaCB-(196)			0.030 J	0.046 J	0.19	0.54	0.024 J	0.023 J	0.83	0.035 U	0.0072 J	0.015 J	1.7	0.56
22'33'44'66'OctaCB-(197)			0.0030 U	0.0032 U	0.020 J	0.033 J	0.0012 U	0.0032 U	0.030 U	0.0054 U	0.0022 U	0.0047 U	0.1 U	0.036 U
OctaCB-(198)+(199)			0.079 J	0.14 J	0.43	1.3	0.060 J	0.059 J	2.1	0.089 J	0.019 U	0.036 J	4.0	1.4
22'33'4566'-OctaCB-(200)			0.0066 J	0.013 J	0.045 U	0.15	0.0071 J	0.0052 U	0.22	0.0081 J	0.0020 U	0.0044 U	0.39	0.14
22'33'45'66'-OctaCB-(201)			0.011 J	0.016 J	0.060 J	0.18	0.0073 U	0.0061 J	0.25	0.010 J	0.0020 U	0.0045 U	0.45	0.17
22'33'55'66'-OctaCB-(202)			0.020 J	0.046 J	0.11	0.38	0.013 U	0.016 J	0.53	0.024 J	0.0037 U	0.0072 J	0.73	0.26
22'344'55'6-OctaCB-(203)			0.049 J	0.090 J	0.26	0.77	0.037 J	0.030 U	1.2	0.052 J	0.012 U	0.025 J	2.4	0.82
22'344'566'-OctaCB-(204)			0.0025 U	0.0025 U	0.0066 U	0.0084 U	0.0010 U	0.0030 U	0.0063 U	0.0051 U	0.0021 U	0.0045 U	0.0064 U	0.0051 U
233'44'55'6-OctaCB-(205)			0.0051 U	0.0049 U	0.010 U	0.065 U	0.0018 U	0.0040 U	0.089 J	0.010 U	0.0038 U	0.0047 U	0.15	0.053 J
22'33'44'55'6-NonaCB-(206)			0.066 J	0.14	0.28	0.88	0.049 J	0.049 J	1.3	0.043 U	0.012 J	0.024 J	2.0	0.76
22'33'44'566'-NonaCB-(207)			0.0083 U	0.015 J	0.038 J	0.11	0.0049 U	0.0064 U	0.15	0.013 U	0.0041 U	0.0057 U	0.23	0.085 J
22'33'455'66'-NonaCB-(208)			0.011 U	0.045 J	0.074 J	0.23	0.010 J	0.012 U	0.33	0.018 U	0.0050 U	0.0070 U	0.46	0.17
DecaCB-(209)			0.013 U	0.032 U	0.069 J	0.18	0.010 U	0.012 U	0.20	0.013 U	0.0054 U	0.0081 J	0.36	0.14
PCB Homologs (ng/l)														
Monochlorobiphenyl			0.019	0.048	0.0015 U	0.047	0.016	0.0086	0.0062 U	0.0011 U	0.0033 U	0.0034 U	0.062	0.0027
Dichlorobiphenyl			0.32	1.1	0.49	1.4	0.38	0.87	2.7	0.86	0.14	1.0	2.9	0.97
Trichlorobiphenyl			0.81	3.2	1.6	6.2	1.7	3.8	12	4.1	0.56	2.3	15	5.0
Tetrachlorobiphenyl			1.6	4.0	4.5	17	2.1	4.2	31	5.3	0.69	2.0	40	13
Pentachlorobiphenyl			3.7	4.9	12	38	2.4	3.38	55	4.2	0.80	1.3	98	34
Hexachlorobiphenyl			2.7	3.9	10	34	2.3	2.7	54	3.4	0.61	1.2	95	37
Heptachlorobiphenyl			0.77	1.3	4.4	14	0.7	0.74	20	1.0	0.11	0.36	39	14
Octachlorobiphenyl			0.20	0.47	1.4	4.9	0.19	0.17	7.5	0.21	0.0072	0.11	14	4.8
Nonachlorobiphenyl			0.066	0.20	0.40	1.2	0.06	0.049	1.8	0.017 U	0.012	0.024	2.7	1.0
Decachlorobiphenyl			0.0033 U	0.0031 U	0.069	0.18	0.006 U	0.008 U	0.20	0.013 U	0.0054 U	0.0081	0.36	0.14
Total Detected PCBs (Method 1668)	0.064	400	10	19	35	116	9.8	16	184	19	2.9	8.2	307	110
Phthalates (ug/l)														
Bis(2-ethylhexyl) phthalate	2.2	5	1.0 U	4.1 U	4.2 U	10 U	4.4 U	4.6 U	5.7 U	4.3 U	5.3	1.7	2.2	2.9
Butylbenzyl phthalate	3		1.4 U	5.6 U	5.8 U	14 U	6.0 U	6.3 U	7.8 U	5.8 U	0.49 U	0.49 U	0.97 U	1.2 U
Dibutyl phthalate	3		1.4 U	5.6 U	5.8 U	14 U	6.0 U	6.3 U	7.8 U	5.8 U	0.49 U	0.49 U	0.97 U	1.2 U
Diethyl phthalate	3		1.4 U	5.6 U	5.8 U	14 U	6.0 U	6.3 U	7.8 U	5.8 U	0.49 U	0.49 U	0.97 U	1.2 U
Dimethyl phthalate	3		1.4 U	5.6 U	5.8 U	14 U	6.0 U	6.3 U	7.8 U	5.8 U	0.49 U	0.49 U	0.97 U	1.2 U
Di-n-octyl phthalate	3		1.4 U	5.6 U	5.8 U	14 U	6.0 U	6.3 U	7.8 U	5.8 U	0.49 U	0.49 U	0.97 U	1.2 U
Pesticides (ug/l)														
2,4'-DDD	0.00031		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
2,4'-DDE	0.00022		0.019 U	0.070 J,	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
2,4'-DDT	0.2		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
4,4'-DDD	0.00031		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
4,4'-DDE	0.00022		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
4,4'-DDT	0.00022		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
Aldrin	0.00005		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
alpha-BHC	0.0049		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
beta-BHC	0.017		0.019 U	0.047 U	0.194 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
Chlordane technical			0.187 U	0.047 U	0.019 U	0.467 U	0.198 U	0.204 U	0.215 U	0.198 U	0.010 U	0.010 U	0.010 U	0.010 U
cis-Chlordane	0.00081		0.019 U	0.467 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
cis-Nonachlor	0.19		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.36 U	0.36 U	0.37 U	0.37 U
delta-BHC	0.052		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
Dieldrin	0.000054		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 21

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix D "Typical PH Values"[2]	11/19/2012 SWP1	11/19/2012 SWP2	11/19/2012 SWP3	11/19/2012 SWP6	3/5/2013 SWP1	3/5/2013 SWP2	3/5/2013 SWP3	3/5/2013 SWP6	3/28/2014 SWP1	3/28/2014 SWP2	3/28/2014 SWP3	3/28/2014 SWP6
Endosulfan I	0.051		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.30	0.12	0.27	0.010 U	0.181 U	0.149 U	0.097 U
Endosulfan II	0.051		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
Endosulfan sulfate	89		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin	0.036		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin aldehyde			0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
Endrin ketone			0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
gamma-BHC (Lindane)	0.037		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
Heptachlor	0.000079		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
Heptachlor epoxide	0.000039		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
Hexachlorobenzene	0.00029		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.029 U	0.029 U	0.030 U	0.029 U
Hexachlorobutadiene	0.86		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
Hexachloroethane	3.3													
Methoxychlor	0.03		0.075 U	0.19 U	0.078 U	0.19 U	0.079 U	0.082 U	0.086 U	0.079 U	0.029 U	0.029 U	0.030 U	0.029 U
Mirex			0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
Oxychlordane	0.19		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
Toxaphene	0.0002		0.19 U	0.47 U	0.19 U	0.47 U	0.20 U	0.20 U	0.22 U	0.20 U	0.36 U	0.36 U	0.37 U	0.37 U
trans-Chlordane	0.00081		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
trans-Nonachlor	0.19		0.019 U	0.047 U	0.019 U	0.047 U	0.020 U	0.020 U	0.022 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
Dioxins (pg/l)														
1,2,3,4,6,7,8-HeptaCDD			21 J	99	55	143	12 J	19 J	107	23 J	9.0 J	30 J	723	330
1,2,3,4,6,7,8-HeptaCDF			5.7 J	13 U	12 U	20 U	2.5 U	3.5 U	15 U	4.5 U	4.1 U	7.1 U	91 U	44 U
1,2,3,4,7,8,9-HeptaCDF			1.2 U	1.1 U	1.3 J	2.1 J	1.0 U	1.2 U	1.7 J	1.0 U	1.3 U	1.4 U	8.9 J	3.2 U
1,2,3,4,7,8-HexaCDD			1.1 U	1.3 J	1.1 U	2.3 J	1.0 U	1.1 U	1.3 J	1.0 U	1.2 U	1.4 U	4.9 U	2.9 J
1,2,3,4,7,8-HexaCDF			0.90 U	1.0 J	1.1 J	3.0 J	0.94 U	0.78 U	2.2 J	0.90 J	1.2 U	1.3 U	11 J	5.6 J
1,2,3,6,7,8-HexaCDD			1.1 J	4.0 J	2.1 J	6.0 J	0.82 U	1.0 J	4.2 J	1.1 J	1.2 U	1.9 J	27 J	13 J
1,2,3,6,7,8-HexaCDF			0.89 U	0.89 U	0.99 U	1.9 J	0.87 U	0.73 U	1.1 J	0.77 U	1.1 U	1.2 U	5.3 J	2.9 J
1,2,3,7,8,9-HexaCDD			1.1 J	3.1 J	2.0 J	4.8 J	1.2 J	1.1 J	3.7 J	1.2 J	1.1 U	1.3 U	23 J	13 J
1,2,3,7,8,9-HexaCDF			1.1 U	1.1 U	1.2 U	1.3 U	1.2 U	0.96 U	1.2 U	1.0 U	1.3 U	1.5 U	1.3 U	1.4 U
1,2,3,7,8-PentaCDD			0.95 U	1.1 U	1.1 U	1.3 J	1.0 U	1.0 U	0.99 U	0.89 U	1.8 U	1.8 U	2.7 U	1.8 U
1,2,3,7,8-PentaCDF			0.97 U	1.0 U	0.94 U	0.94 U	0.94 U	1.0 U	1.0 U	1.0 U	1.2 U	1.5 U	1.1 U	1.2 U
2,3,4,6,7,8-HexaCDF			0.98 U	0.98 U	1.1 U	1.6 J	1.0 U	0.86 U	1.1 U	0.91 U	1.2 U	1.3 U	4.9 J	2.0 U
2,3,4,7,8-PentaCDF			0.98 U	1.0 U	0.95 U	1.3 U	1.1 U	1.1 J	1.9 J	1.1 U	1.2 U	1.6 U	5.0 U	2.3 U
2,3,7,8-TetraCDD	0.0051		1.0 U	1.0 U	1.0 U	1.6 U	1.0 U	1.0 U	1.0 U	1.1 U	1.2 U	1.4 U	1.1 U	1.2 U
2,3,7,8-TetraCDF			0.92 U	0.91 U	0.99 J	2.6 J	1.0 U	0.89 U	1.8 J	1.0 U	1.2 U	1.3 U	9.7 J	3.9 U
OCDD			166	845	601	1370	54 J	122	1120	161	58 J	208	6560	3280
OCDF			28 J	39 J	78 J	73 J	5.5 J	10 J	47 J	11 J	7.2 J	16 J	339	129
HeptaCDD homologs			37 J	372	108	380	27 J	38 J	239	46 J	17 J	53.7 J	1580	724
HeptaCDF homologs			17 J	26 J	33 J	41 J	2.0 J	4.9 J	28 J	6.1 J	3.4 J	8.7 J	192	78
HexaCDD homologs			6.1 J	43 J	16 J	60	6.6 J	7.7 J	41 J	8.5 J	17 U	7.7 J	218	104
HexaCDF homologs			3.7 J	19 J	15 J	37 J	1.2 J	3.7 J	27 J	5.3 J	1.2 U	4.9 J	150	72
PentaCDD homologs			0.95 U	18 U	1.1 U	2.5 J	1.0 U	1.0 U	1.3 U	0.89 U	1.8 U	2.2 U	12 J	2.9 J
PentaCDF homologs			0.98 U	5.4 J	6.4 J	16 J	1.1 U	2.2 J	19 J	1.1 U	3.4 U	2.4 U	59	41 J
TetraCDD homologs			1.0 U	1.0 U	1.0 U	1.6 U	1.0 U	1.0 U	1.0 U	1.1 U	6.9 U	1.4 U	3.6 U	1.7 U
TetraCDF homologs			0.92 U	0.91 U	2.0 J	8.2 J	2.1 J	0.89 U	8.1 J	1.0 U	1.2 U	1.3 U	54	11 J
Total Dioxin TEQ (ND=DL/2)	0.0051		2.0	3.7	2.9	6.6	1.8	2.1	4.6	2.0	2.3	2.9	21	11
Total Dioxin TEQ (ND=0)	0.0051		0.54	2.2	1.4	5.4	0.26	0.77	3.4	0.59	0.11	0.55	17	8.0
Butyltins (ug/l)														
Butyltin ion			0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.11 U	0.2 U	0.20 U	0.20 U	0.20 U
Dibutyltin ion			0.069 U	0.096 U	0.096 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.29 U	0.29 U	0.29 U	0.29 U
Tributyltin ion	0.072		0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.043 U	0.19 U	0.19 U	0.19 U	0.19 U
Total Metals (ug/l)														
Aluminum			269	4520	3540	10900	155	4670	13800	5620	83	3000	34200	19200
Antimony	6		0.50 U	0.50 U	0.50 U	0.52 J	0.50 U	0.50 U	1.3	0.51 J	1.0 U	1.0 U	2.3 U	2.3 U
Arsenic	0.045	2	0.50 U	0.80 J	0.80 J	1.3 J	1.4 J	0.87 J	2.1	1.0 J	0.52 J	0.54 J	3.4	2.0 J
Cadmium	0.094	0.7	0.50 U	0.50 U	0.50 U	0.68 J	0.50 U	0.50 U	1.6	0.54 J	0.056 J	0.21	1.8	0.90

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 21

Chemical	Portland Harbor JSCS SLV[1]	DEQ Appendix D "Typical PH Values"[2]	11/19/2012				3/5/2013				3/28/2014			
			SWP1	SWP2	SWP3	SWP6	SWP1	SWP2	SWP3	SWP6	SWP1	SWP2	SWP3	SWP6
Chromium	100	7	2.1	23	28	128	0.92 J	7.3	83	18	0.54 J	5.4	296	230
Copper	2.7	60	3.4	13	27	41	5.1	10	60	16	9.1	6.6	128	67
Lead	0.54	50	4.3	12	8.6	29	1.7	6.6	42	10	1.0	4.7	93	55
Manganese	50		30	235	332	1390	211	345	1090	459	72	155	3240	2470
Mercury	0.77	0.2	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.051 J	0.040 U	0.040 U	0.040 U	0.090 U	0.090 U
Nickel	16	8	0.82 J	3.0	2.6	7.1	0.92 J	3.0	11	3.6	0.50 U	2.0	24	13
Silver	0.12	0.1	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.10 U	0.10 U	0.23 J	0.23 U
Zinc	36	500	37	92	74	211	50	131	290	148	29	77	594	367
Dissolved Metals (ug/l)														
Aluminum			25 U	53	84	427	25 U	25 U	30 J	25 U	25 U	73	46 J	59
Antimony	6		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.2	0.50 U	0.50 U	0.50 U	0.97 J	0.50 U
Arsenic	0.045	2	0.50 U	0.50 U	0.53 J	0.61 J	0.62 J	0.64 J	1.1 J	0.56 J	0.50 U	0.50 U	0.63 J	0.50 U
Cadmium	0.094	0.7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.54 J	0.50 U	0.040 U	0.044 J	0.29	0.044 J
Chromium	100	7	0.50 U	2.0	0.94 J	3.2	0.50 U	0.50 U	1.4 J	0.50 U	0.50 U	0.70 J	1.8	1.0
Copper	2.7	60	1.3 J	2.0	6.5	3.7	3.3	2.3	12	3.2	1.7	1.4	6.6	2.0
Lead	0.54	50	0.50 U	0.50 U	0.50 U	1.1	0.50 U	0.50 U	0.50 U	0.50 U	0.10 U	0.22	0.54	0.20
Manganese	50		0.50 U	4.5	6.5	32	70	228	50	223	54	72	27	24
Mercury	0.77	0.2	0.04 U	0.04 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Nickel	16	8	0.50 U	0.70 J	0.82 J	0.63 J	0.50 U	0.82 J	3.3	1.1 J	0.90 J	1.6	1.0	0.50 U
Silver	0.12	0.1	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.10 U	0.10 U	0.10 U	0.10 U
Zinc	36	500	4.3	2.4 J	3.2 J	8.0	32	50	32	36	23	23	16	4.5
Pertroleum Hydrocarbons (mg/l)														
Gasoline			0.094 U	0.094 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Diesel			0.094 U	0.15 J	0.34 J	0.67	0.10 U	0.11 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.47 U
Oil			0.22 J	1.0	2.9	8.6	0.56	0.68	8.8	0.87	0.44	0.85	7.9	6.4
TSS (mg/l)		60	9.0	262	74	520	12	105	245	152	5.0 U	88	1000	802
TOC (mg/l)			4.5	9.9	7.8	17	4.2	5.9	5.4	5.2	1.0 U	2.8	7.1	3.8

U - Not detectet at noted detection limit
J- Estimated value
NA - Not analyzed
Blank cells indicate not analyzed

1 - Table 3-1 PH JSCS Guidance, 7/16/2007 revision
2 - October 2010, DEQ Guidance for Evaluating Stormwater Pathway at Upland Sites, Appendix E, Tool For Evaluating Stormwater Data

Detected concentration > 10 x SLV
Detected concentration > 100 x SLV
Detected concentration > 1000 x SLV

Table 3
Storm Water Solids Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 21

Chemical	Portland Harbor JSCS SLV[1]	Portland Harbor PRG SLV[2]	DEQ Appendix E "Typical PH Values"[3]	SWSP1	SWSP2
PAHs (ug/kg)					
2-Methylnaphthalene	200			786 U	371 U
Acenaphthene	300			393 U	185 U
Acenaphthylene	200			393 U	185 U
Anthracene	845			393 U	185 U
Benzo(a)anthracene	1050			1000	238 J
Benzo(a)pyrene	1450			1180 U	278 U
Benzo(b+k)fluoranthene	13000			1180 U	278 U
Benzo(g,h,i)perylene	300			1170	350 J
Chrysene	1290			1170	286 J
Dibenzo(a,h)anthracene	1300			393 U	185 U
Fluoranthene	2230			1250	408
Fluorene	536			393 U	185 U
Indeno(1,2,3-cd)pyrene	100			658 J	185 U
Naphthalene	561			786 U	371 U
Phenanthrene	1170			482 J	422
Pyrene	1520			1290	679
Total PAHs (BaP TEQ)		162		851	200
Total Detected PAHs			15000	7871	2583
PCBs (ug/kg)					
Aroclor 1016	530			12 U	12 U
Aroclor 1221				12 U	12 U
Aroclor 1232				12 U	12 U
Aroclor 1242				122	34
Aroclor 1248	1500			12 U	12 U
Aroclor 1254	300			310	45
Aroclor 1260	200			82	27
Total Detected PCB Aroclors		17	150	514	105
Phthalates (ug/kg)					
Bis(2-ethylhexyl) phthalate	330		30000	44100	4980
Butylbenzyl phthalate				3930 U	1850 U
Diethyl phthalate	600			3930 U	1850 U
Dimethyl phthalate				3930 U	1850 U
Dibutyl phthalate				3930 U	1850 U
Di-n-octyl phthalate	60			7860 U	3710 U
Pesticides (ug/kg)					
2,4'-DDD	0.33	28		20 U	3.7 U
2,4'-DDE	0.33	31.3		20 U	3.7 U
2,4'-DDT	0.33	62.9		20 U	3.7 U
4,4'-DDD	0.33	28		43 U	3.7 U
4,4'-DDE	0.33	31.3		39 U	3.7 U
4,4'-DDT	0.33	62.9		39 U	3.7 U
Aldrin	40	0.84		20 U	3.7 U
alpha-Hexachlorocyclohexane				20 U	3.7 U
beta-Hexachlorocyclohexane				39 U	3.7 U
Chlordane Technical				585 U	112 U
cis-Chlordane	0.37	1.87		20 U	3.7 U

Table 3
Storm Water Solids Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 21

Chemical	Portland Harbor JSCS SLV[1]	Portland Harbor PRG SLV[2]	DEQ Appendix E "Typical PH Values"[3]	SWSP1	SWSP2
cis-Nonachlor				39 U	3.7 U
delta-Hexachlorocyclohexane	4.99	2.35		20 U	3.7 U
Dieldrin	0.0081	21.5		20 U	3.7 U
alpha-Endosulfan				20 U	3.7 U
beta-Endosulfan				20 U	3.7 U
Endosulfan sulfate				39 U	3.7 U
Endrin	207			20 U	3.7 U
Endrin aldehyde				20 U	3.7 U
Endrin ketone		8.5		39 U	3.7 U
gamma-Hexachlorocyclohexane		1.38		20 U	3.7 U
Heptachlor	10			20 U	3.7 U
Heptachlor epoxide	16			20 U	3.7 U
Hexachlorobenzene	19			49 U	9.3 U
Hexachlorobutadiene	600			20 U	3.7 U
Methoxychlor				59 U	11 U
Mirex				20 U	3.7 U
Oxychlordane				20 U	3.7 U
Toxaphene				585 U	112 U
trans-Chlordane	0.37			20 U	7.4 U
trans-Nonachlor				20 U	3.7 U
Dioxins (pg/g)					
1,2,3,4,6,7,8-HeptaCDD	690			1030	282
1,2,3,4,6,7,8-HeptaCDF	690			249	68
1,2,3,4,7,8,9-HeptaCDF	690			16 J	3.9 J
1,2,3,4,7,8-HexaCDD				24 J	5.9 J
1,2,3,4,7,8-HexaCDF	2.7			18 J	5.3 J
1,2,3,6,7,8-HexaCDD				47	12 J
1,2,3,6,7,8-HexaCDF	2.7			12 J	3.0 J
1,2,3,7,8,9-HexaCDD				64	18 J
1,2,3,7,8,9-HexaCDF	2.7			0.58 U	0.59 U
1,2,3,7,8-PentaCDD	2.6			13 J	2.7 J
1,2,3,7,8-PentaCDF	2.6			1.5 U	1.0 U
2,3,4,6,7,8-HexaCDF	2.7			12 J	2.6 U
2,3,4,7,8-PentaCDF	0.030	1.06		4.9 J	1.5 J
2,3,7,8-TetraCDD	0.0091			1.5 U	0.90 U
2,3,7,8-TetraCDF	0.77			12	2.4 U
OCDD	23000			6330	2450
OCDF	23000			1030	252
Total Hepta CDD				1900	596
Total Hepta CDF				741	214
Total Hexa CDD				402	125
Total Hexa CDF				243	69
Total Penta CDD				90	12 J
Total Penta CDF				92	16 J
Total Tetra CDD				12	0.90 U
Total Tetra CDF				77	2.4 U
Total TEQ (DL/2)	0.091			49	14
Total TEQ (DL=0)	0.091			48	12

Table 3
Storm Water Solids Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 21

Chemical	Portland Harbor JSCS SLV[1]	Portland Harbor PRG SLV[2]	DEQ Appendix E "Typical PH Values"[3]	SWSP1	SWSP2
Butyltins (ug/kg)					
Butyltin ion				180	110
Dibutyltin ion				89	190
Tributyltin ion	2.3			36 U	3.8 U
Metals (mg/kg)					
Aluminum				3990	7270
Antimony	64			1.5 J	1.7 J
Arsenic	7	17	10	17	8.2
Cadmium	1	3.51	2	1.2	1.4
Chromium	111	90	130	42	74
Copper	149	149	500	85	71
Lead	17	91.3	300	55	69
Manganese	1100			2790	1350
Mercury	0.07	0.041	0.35	0.085 U	0.075 U
Nickel	48.6	36	60	21	28
Silver	5	1.72	0.7	0.21 U	0.19 U
Zinc	459	315	1000	526	689
Total Petroluem Hydrcarbons (mg/kg)					
Gasoline				4710 U	204 U
Diesel				11800 U	510 U
Oil				83400	2680
Total Organic Carbon (mg/kg)				180000	39000

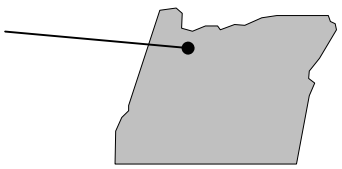
U - Not detected at noted detection limit
J - Estimated value

1 - Table 3-1 PH JSCS Guidance, 7/16/2007 revision
2 - April 21, 2010 EPA letter to Lower Willamette Group and attached tables dated March 24, 2010
3 - October 2010, DEQ Guidance for Evaluating Stormwater Pathway at Upland Sites, Appendix E, Tool For

Detected concentration > 10 x Highest SLV
Detected concentration > 100 x Highest SLV
Detected concentration > 1000 x Highest SLV

Figures

Portland, Oregon



N

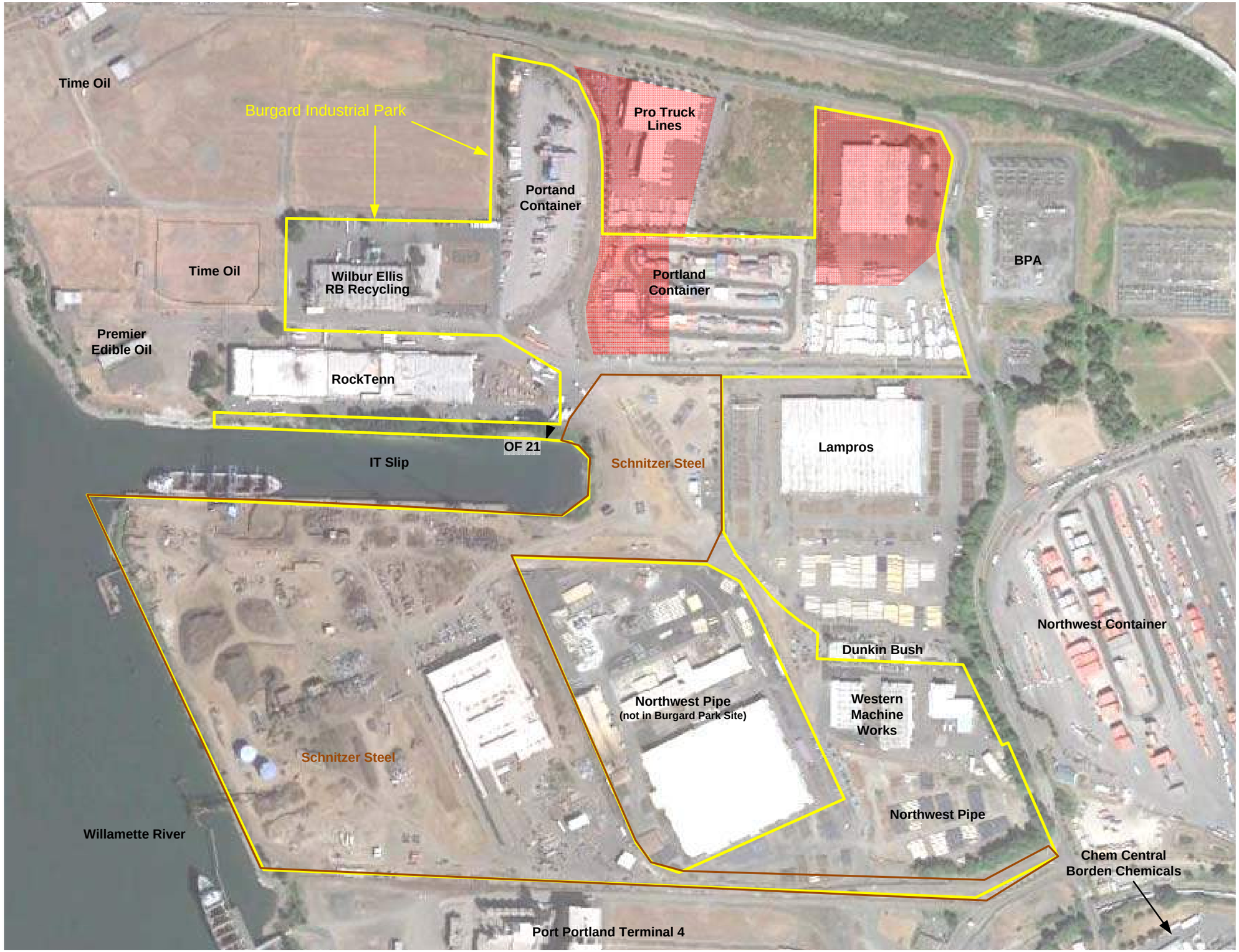
Approximate Scale

5000 feet

Figure 1
Site Location Map
Burgard Industrial Park

BRIDGEWATER GROUP, INC.

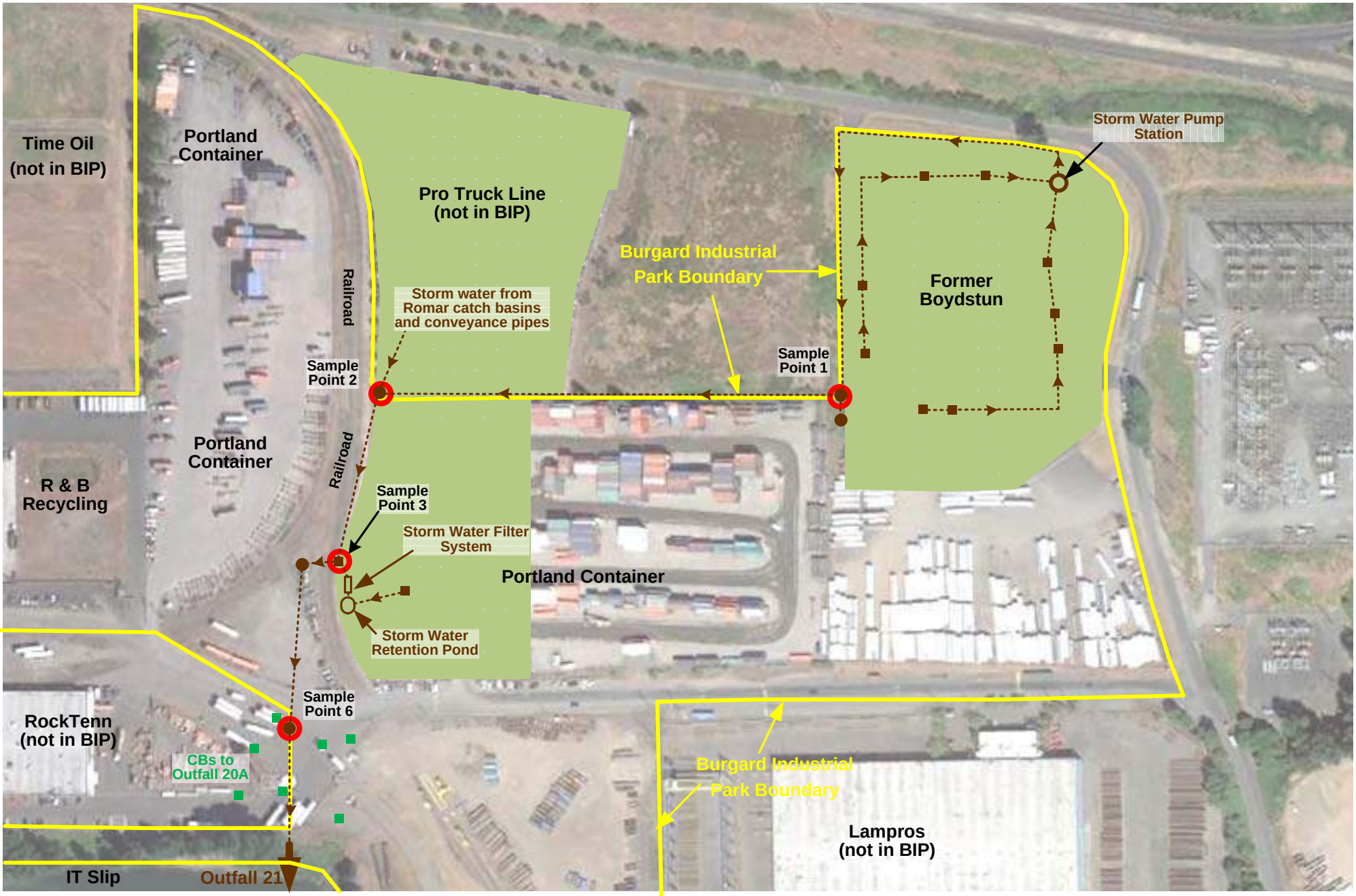
Base photograph August 2012



Base Photograph August 2012

Figure 2
Burgard Industrial Park Site Plan
Portland, Oregon

BRIDGEWATER GROUP, INC.



Base photograph August 2012

N

Approximate Scale

250 feet

- Catch Basin
- Manhole
- Storm Water Basin 21
- Storm Water Sample Location

Figure 3
Basin 21 Storm Water Sample Locations
Burgard Industrial Park

BRIDGEWATER GROUP, INC.

Appendix A – Analytical Laboratory Reports

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Wednesday, May 7, 2014

Ross Rieke
Bridgewater Group
4500 SW Kruse Way; Suite 110
Lake Oswego, OR 97035

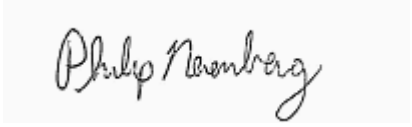
RE: Schnitzer-Burgard / 8001-20

Enclosed are the results of analyses for work order A4D0003, which was received by the laboratory on 3/28/2014 at 2:35:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories



Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B21-SWP1-20140328	A4D0003-01	Water	03/28/14 11:30	03/28/14 14:35
B21-SWP2-20140328	A4D0003-02	Water	03/28/14 07:15	03/28/14 14:35
B21-SWP3-20140328	A4D0003-03	Water	03/28/14 08:05	03/28/14 14:35
B21-SWP6-20140328	A4D0003-04	Water	03/28/14 10:15	03/28/14 14:35

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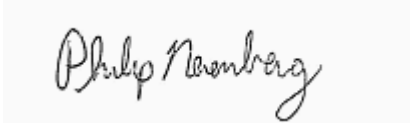

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

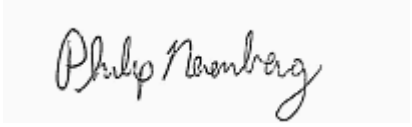
Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Diesel and Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP1-20140328 (A4D0003-01)			**Matrix: Water**		**Batch: 4040249**			
Diesel	ND	0.0952	0.190	mg/L	1	04/09/14 22:01	NWTPH-Dx	
Oil	**0.440**	0.190	0.381	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 98 %*	*Limits: 50-150 %*	"	"	"	
B21-SWP2-20140328 (A4D0003-02)			**Matrix: Water**		**Batch: 4040249**			
Diesel	ND	0.100	0.200	mg/L	1	04/09/14 22:25	NWTPH-Dx	
Oil	**0.851**	0.200	0.400	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 98 %*	*Limits: 50-150 %*	"	"	"	
B21-SWP3-20140328 (A4D0003-03RE1)			**Matrix: Water**		**Batch: 4040249**			
Diesel	ND	0.0952	0.190	mg/L	1	04/10/14 09:53	NWTPH-Dx	
Oil	**7.90**	0.190	0.381	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 315 %*	*Limits: 50-150 %*	"	"	"	*S-03*
B21-SWP6-20140328 (A4D0003-04)			**Matrix: Water**		**Batch: 4040249**			
Diesel	ND	0.472	0.943	mg/L	5	04/10/14 00:00	NWTPH-Dx	
Oil	**6.40**	0.943	1.89	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 116 %*	*Limits: 50-150 %*	"	"	"	

Apex Laboratories



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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP1-20140328 (A4D0003-01)			**Matrix: Water**		**Batch: 4040095**			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/03/14 17:25	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 122 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*113 %*	*Limits: 50-150 %*	"	"	"	
B21-SWP2-20140328 (A4D0003-02)			**Matrix: Water**		**Batch: 4040095**			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/03/14 18:17	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 117 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*111 %*	*Limits: 50-150 %*	"	"	"	
B21-SWP3-20140328 (A4D0003-03)			**Matrix: Water**		**Batch: 4040095**			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/03/14 18:43	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 121 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*114 %*	*Limits: 50-150 %*	"	"	"	
B21-SWP6-20140328 (A4D0003-04)			**Matrix: Water**		**Batch: 4040095**			
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	04/03/14 19:08	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 121 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*112 %*	*Limits: 50-150 %*	"	"	"	

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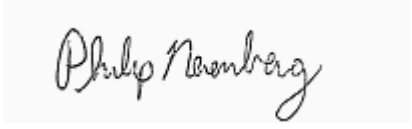

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP1-20140328 (A4D0003-01)			**Matrix: Water**		**Batch: 4040202**			**C-07**
Aroclor 1016	ND	0.00952	0.0190	ug/L	1	04/09/14 11:38	EPA 8082A	
Aroclor 1221	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1232	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1242	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1248	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1254	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1260	ND	0.00952	0.0190	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 63 %*	*Limits: 40-135 %*	"	"	"	
B21-SWP2-20140328 (A4D0003-02)			**Matrix: Water**		**Batch: 4040202**			**C-07**
Aroclor 1016	ND	0.00943	0.0189	ug/L	1	04/09/14 12:59	EPA 8082A	
Aroclor 1221	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1232	ND	0.0189	0.0189	"	"	"	"	
Aroclor 1242	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1248	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1254	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1260	ND	0.00943	0.0189	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 65 %*	*Limits: 40-135 %*	"	"	"	
B21-SWP3-20140328 (A4D0003-03RE1)			**Matrix: Water**		**Batch: 4040202**			**C-07**
Aroclor 1016	ND	0.0189	0.0377	ug/L	1	04/09/14 13:41	EPA 8082A	
Aroclor 1221	ND	0.0189	0.0377	"	"	"	"	
Aroclor 1232	ND	0.0189	0.0377	"	"	"	"	
Aroclor 1242	**0.0299**	0.0189	0.0377	"	"	"	"	J
Aroclor 1248	ND	0.0189	0.0377	"	"	"	"	
Aroclor 1254	**0.141**	0.0189	0.0377	"	"	"	"	P-10
Aroclor 1260	**0.120**	0.0189	0.0377	"	"	"	"	P-10
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 45 %*	*Limits: 40-135 %*	"	"	"	
B21-SWP6-20140328 (A4D0003-04RE1)			**Matrix: Water**		**Batch: 4040202**			**C-07**
Aroclor 1016	ND	0.0189	0.0377	ug/L	1	04/09/14 14:18	EPA 8082A	
Aroclor 1221	ND	0.0189	0.0377	"	"	"	"	
Aroclor 1232	ND	0.0189	0.0377	"	"	"	"	
Aroclor 1242	**0.0205**	0.0189	0.0377	"	"	"	"	J
Aroclor 1248	ND	0.0189	0.0377	"	"	"	"	
Aroclor 1254	**0.0922**	0.0189	0.0377	"	"	"	"	P-10
Aroclor 1260	**0.0767**	0.0189	0.0377	"	"	"	"	P-10

Apex Laboratories

Philip Nerenberg, Lab Director

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

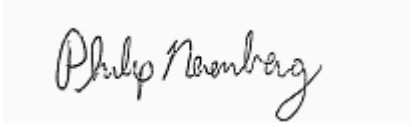
Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP6-20140328 (A4D0003-04RE1)			**Matrix: Water**		**Batch: 4040202**			**C-07**
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 52 %*	*Limits: 40-135 %*	1	"	EPA 8082A	

Apex Laboratories



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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP1-20140328 (A4D0003-01RE1)			**Matrix: Water**		**Batch: 4040212**			**C-05**
Aldrin	ND	0.00962	0.0192	ug/L	1	04/10/14 21:38	EPA 8081B	
alpha-BHC	ND	0.00962	0.0192	"	"	"	"	
beta-BHC	ND	0.00962	0.0192	"	"	"	"	
delta-BHC	ND	0.00962	0.0192	"	"	"	"	
gamma-BHC (Lindane)	ND	0.00962	0.0192	"	"	"	"	
cis-Chlordane	ND	0.00962	0.0192	"	"	"	"	
trans-Chlordane	ND	0.00962	0.0192	"	"	"	"	
4,4'-DDD	ND	0.00962	0.0192	"	"	"	"	
4,4'-DDE	ND	0.00962	0.0192	"	"	"	"	
4,4'-DDT	ND	0.00962	0.0192	"	"	"	"	
Dieldrin	ND	0.00962	0.0192	"	"	"	"	
Endosulfan I	ND	0.00962	0.0192	"	"	"	"	
Endosulfan II	ND	0.00962	0.0192	"	"	"	"	
Endosulfan sulfate	ND	0.00962	0.0192	"	"	"	"	
Endrin	ND	0.00962	0.0192	"	"	"	"	
Endrin Aldehyde	ND	0.00962	0.0192	"	"	"	"	
Endrin ketone	ND	0.00962	0.0192	"	"	"	"	
Heptachlor	ND	0.00962	0.0192	"	"	"	"	
Heptachlor epoxide	ND	0.00962	0.0192	"	"	"	"	
Methoxychlor	ND	0.0288	0.0577	"	"	"	"	
Chlordane (Technical)	ND	0.362	0.721	"	"	"	"	
Toxaphene (Total)	ND	0.362	0.721	"	"	"	"	
cis-Nonachlor	ND	0.00962	0.0192	"	"	"	"	
2,4'-DDD	ND	0.00962	0.0192	"	"	"	"	
2,4'-DDE	ND	0.00962	0.0192	"	"	"	"	
2,4'-DDT	ND	0.00962	0.0192	"	"	"	"	
Hexachlorobenzene	ND	0.0288	0.0577	"	"	"	"	
Hexachlorobutadiene	ND	0.00962	0.0192	"	"	"	"	
Mirex	ND	0.00962	0.0192	"	"	"	"	
Oxychlordane	ND	0.00962	0.0192	"	"	"	"	
trans-Nonachlor	ND	0.00962	0.0192	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 90 %*	*Limits: 25-140 %*	"	"	"	
Decachlorobiphenyl (Surr)			*113 %*	*Limits: 30-135 %*	"	"	"	

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Tigard, OR 97223
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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP2-20140328 (A4D0003-02RE1)			**Matrix: Water**		**Batch: 4040212**			**C-05**
Aldrin	ND	0.00952	0.0190	ug/L	1	04/10/14 21:56	EPA 8081B	
alpha-BHC	ND	0.00952	0.0190	"	"	"	"	
beta-BHC	ND	0.00952	0.0190	"	"	"	"	
delta-BHC	ND	0.00952	0.0190	"	"	"	"	
gamma-BHC (Lindane)	ND	0.00952	0.0190	"	"	"	"	
cis-Chlordane	ND	0.00952	0.0190	"	"	"	"	
trans-Chlordane	ND	0.00952	0.0190	"	"	"	"	
4,4'-DDD	ND	0.00952	0.0190	"	"	"	"	
4,4'-DDE	ND	0.00952	0.0190	"	"	"	"	
4,4'-DDT	ND	0.00952	0.0190	"	"	"	"	
Dieldrin	ND	0.00952	0.0190	"	"	"	"	
Endosulfan I	ND	0.181	0.181	"	"	"	"	R-02
Endosulfan II	ND	0.00952	0.0190	"	"	"	"	
Endosulfan sulfate	ND	0.00952	0.0190	"	"	"	"	
Endrin	ND	0.00952	0.0190	"	"	"	"	
Endrin Aldehyde	ND	0.00952	0.0190	"	"	"	"	
Endrin ketone	ND	0.00952	0.0190	"	"	"	"	
Heptachlor	ND	0.00952	0.0190	"	"	"	"	
Heptachlor epoxide	ND	0.00952	0.0190	"	"	"	"	
Methoxychlor	ND	0.0286	0.0571	"	"	"	"	
Chlordane (Technical)	ND	0.358	0.714	"	"	"	"	
Toxaphene (Total)	ND	0.358	0.714	"	"	"	"	
cis-Nonachlor	ND	0.00952	0.0190	"	"	"	"	
2,4'-DDD	ND	0.00952	0.0190	"	"	"	"	
2,4'-DDE	ND	0.00952	0.0190	"	"	"	"	
2,4'-DDT	ND	0.00952	0.0190	"	"	"	"	
Hexachlorobenzene	ND	0.0286	0.0571	"	"	"	"	
Hexachlorobutadiene	ND	0.00952	0.0190	"	"	"	"	
Mirex	ND	0.00952	0.0190	"	"	"	"	
Oxychlordane	ND	0.00952	0.0190	"	"	"	"	
trans-Nonachlor	ND	0.00952	0.0190	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 82 %*	*Limits: 25-140 %*	"	"	"	
Decachlorobiphenyl (Surr)			*111 %*	*Limits: 30-135 %*	"	"	"	

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Philip Nerenberg, Lab Director

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP3-20140328 (A4D0003-03RE1)			**Matrix: Water**		**Batch: 4040212**			**C-05**
Aldrin	ND	0.00990	0.0198	ug/L	1	04/10/14 22:14	EPA 8081B	
alpha-BHC	ND	0.00990	0.0198	"	"	"	"	
beta-BHC	ND	0.00990	0.0198	"	"	"	"	
delta-BHC	ND	0.00990	0.0198	"	"	"	"	
gamma-BHC (Lindane)	ND	0.00990	0.0198	"	"	"	"	
cis-Chlordane	ND	0.00990	0.0198	"	"	"	"	
trans-Chlordane	ND	0.00990	0.0198	"	"	"	"	
4,4'-DDD	ND	0.00990	0.0198	"	"	"	"	
4,4'-DDE	ND	0.00990	0.0198	"	"	"	"	
4,4'-DDT	ND	0.00990	0.0198	"	"	"	"	
Dieldrin	ND	0.00990	0.0198	"	"	"	"	
Endosulfan I	ND	0.149	0.149	"	"	"	"	R-02
Endosulfan II	ND	0.00990	0.0198	"	"	"	"	
Endosulfan sulfate	ND	0.00990	0.0198	"	"	"	"	
Endrin	ND	0.00990	0.0198	"	"	"	"	
Endrin Aldehyde	ND	0.00990	0.0198	"	"	"	"	
Endrin ketone	ND	0.00990	0.0198	"	"	"	"	
Heptachlor	ND	0.00990	0.0198	"	"	"	"	
Heptachlor epoxide	ND	0.00990	0.0198	"	"	"	"	
Methoxychlor	ND	0.0297	0.0594	"	"	"	"	
Chlordane (Technical)	ND	0.372	0.743	"	"	"	"	
Toxaphene (Total)	ND	0.372	0.743	"	"	"	"	
cis-Nonachlor	ND	0.00990	0.0198	"	"	"	"	
2,4'-DDD	ND	0.00990	0.0198	"	"	"	"	
2,4'-DDE	ND	0.00990	0.0198	"	"	"	"	
2,4'-DDT	ND	0.00990	0.0198	"	"	"	"	
Hexachlorobenzene	ND	0.0297	0.0594	"	"	"	"	
Hexachlorobutadiene	ND	0.00990	0.0198	"	"	"	"	
Mirex	ND	0.00990	0.0198	"	"	"	"	
Oxychlordane	ND	0.00990	0.0198	"	"	"	"	
trans-Nonachlor	ND	0.00990	0.0198	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 71 %*	*Limits: 25-140 %*	"	"	"	
Decachlorobiphenyl (Surr)			*98 %*	*Limits: 30-135 %*	"	"	"	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP6-20140328 (A4D0003-04RE1)			**Matrix: Water**		**Batch: 4040212**			**C-05**
Aldrin	ND	0.00971	0.0194	ug/L	1	04/10/14 22:31	EPA 8081B	
alpha-BHC	ND	0.00971	0.0194	"	"	"	"	
beta-BHC	ND	0.00971	0.0194	"	"	"	"	
delta-BHC	ND	0.00971	0.0194	"	"	"	"	
gamma-BHC (Lindane)	ND	0.00971	0.0194	"	"	"	"	
cis-Chlordane	ND	0.00971	0.0194	"	"	"	"	
trans-Chlordane	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDD	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDE	ND	0.00971	0.0194	"	"	"	"	
4,4'-DDT	ND	0.00971	0.0194	"	"	"	"	
Dieldrin	ND	0.00971	0.0194	"	"	"	"	
Endosulfan I	ND	0.0971	0.0971	"	"	"	"	R-02
Endosulfan II	ND	0.00971	0.0194	"	"	"	"	
Endosulfan sulfate	ND	0.00971	0.0194	"	"	"	"	
Endrin	ND	0.00971	0.0194	"	"	"	"	
Endrin Aldehyde	ND	0.00971	0.0194	"	"	"	"	
Endrin ketone	ND	0.00971	0.0194	"	"	"	"	
Heptachlor	ND	0.00971	0.0194	"	"	"	"	
Heptachlor epoxide	ND	0.00971	0.0194	"	"	"	"	
Methoxychlor	ND	0.0291	0.0583	"	"	"	"	
Chlordane (Technical)	ND	0.365	0.728	"	"	"	"	
Toxaphene (Total)	ND	0.365	0.728	"	"	"	"	
cis-Nonachlor	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDD	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDE	ND	0.00971	0.0194	"	"	"	"	
2,4'-DDT	ND	0.00971	0.0194	"	"	"	"	
Hexachlorobenzene	ND	0.0291	0.0583	"	"	"	"	
Hexachlorobutadiene	ND	0.00971	0.0194	"	"	"	"	
Mirex	ND	0.00971	0.0194	"	"	"	"	
Oxychlordane	ND	0.00971	0.0194	"	"	"	"	
trans-Nonachlor	ND	0.00971	0.0194	"	"	"	"	
Surrogate: 2,4,5,6-TCMX (Surr)			*Recovery: 66 %*	*Limits: 25-140 %*	"	"	"	
Decachlorobiphenyl (Surr)			*101 %*	*Limits: 30-135 %*	"	"	"	

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Philip Nerenberg, Lab Director

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP1-20140328 (A4D0003-01RE2)			**Matrix: Water**		**Batch: 4040120**			
Acenaphthene	ND	0.0194	0.0388	ug/L	2	04/29/14 15:01	EPA 8270D	
Acenaphthylene	ND	0.0194	0.0388	"	"	"	"	
Anthracene	ND	0.0194	0.0388	"	"	"	"	
Benz(a)anthracene	ND	0.0194	0.0388	"	"	"	"	
Benzo(a)pyrene	ND	0.0291	0.0583	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0583	0.0583	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0291	0.0583	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0388	0.0388	"	"	"	"	
Chrysene	ND	0.0194	0.0388	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0194	0.0388	"	"	"	"	
Fluoranthene	**0.0233**	0.0194	0.0388	"	"	"	"	J
Fluorene	ND	0.0194	0.0388	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0194	0.0388	"	"	"	"	
1-Methylnaphthalene	ND	0.0388	0.0777	"	"	"	"	
2-Methylnaphthalene	ND	0.0388	0.0777	"	"	"	"	
Naphthalene	ND	0.0388	0.0777	"	"	"	"	
Phenanthrene	**0.0237**	0.0194	0.0388	"	"	"	"	J
Pyrene	ND	0.0194	0.0388	"	"	"	"	
Carbazole	ND	0.0291	0.0583	"	"	"	"	
Dibenzofuran	ND	0.0194	0.0388	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**5.26**	0.485	0.971	"	"	"	"	
Butyl benzyl phthalate	ND	0.485	0.971	"	"	"	"	
Diethylphthalate	ND	0.485	0.971	"	"	"	"	
Dimethylphthalate	ND	0.485	0.971	"	"	"	"	
Di-n-butylphthalate	ND	0.485	0.971	"	"	"	"	
Di-n-octyl phthalate	ND	0.485	0.971	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 47 %*	*Limits: 35-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*53 %*	*Limits: 30-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*97 %*	*Limits: 50-125 %*	"	"	"	

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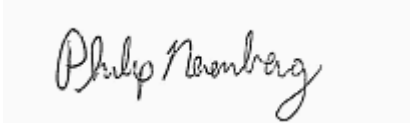

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP2-20140328 (A4D0003-02RE2)			**Matrix: Water**		**Batch: 4040120**			
Acenaphthene	ND	0.0196	0.0392	ug/L	2	04/29/14 15:38	EPA 8270D	
Acenaphthylene	ND	0.0196	0.0392	"	"	"	"	
Anthracene	ND	0.0196	0.0392	"	"	"	"	
Benz(a)anthracene	**0.0298**	0.0196	0.0392	"	"	"	"	J
Benzo(a)pyrene	**0.0484**	0.0294	0.0588	"	"	"	"	J
Benzo(b)fluoranthene	**0.0629**	0.0294	0.0588	"	"	"	"	
Benzo(k)fluoranthene	**0.0355**	0.0294	0.0588	"	"	"	"	J
Benzo(g,h,i)perylene	**0.0665**	0.0196	0.0392	"	"	"	"	
Chrysene	**0.0584**	0.0196	0.0392	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0196	0.0392	"	"	"	"	
Fluoranthene	**0.115**	0.0196	0.0392	"	"	"	"	
Fluorene	**0.0199**	0.0196	0.0392	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	**0.0199**	0.0196	0.0392	"	"	"	"	J
1-Methylnaphthalene	ND	0.0392	0.0784	"	"	"	"	
2-Methylnaphthalene	ND	0.0392	0.0784	"	"	"	"	
Naphthalene	ND	0.0392	0.0784	"	"	"	"	
Phenanthrene	**0.100**	0.0196	0.0392	"	"	"	"	
Pyrene	**0.129**	0.0196	0.0392	"	"	"	"	
Carbazole	**0.0543**	0.0294	0.0588	"	"	"	"	J
Dibenzofuran	ND	0.0196	0.0392	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**1.65**	0.490	0.980	"	"	"	"	
Butyl benzyl phthalate	ND	0.490	0.980	"	"	"	"	
Diethylphthalate	ND	0.490	0.980	"	"	"	"	
Dimethylphthalate	ND	0.490	0.980	"	"	"	"	
Di-n-butylphthalate	ND	0.490	0.980	"	"	"	"	
Di-n-octyl phthalate	ND	0.490	0.980	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 53 %*	*Limits: 35-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*63 %*	*Limits: 30-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*94 %*	*Limits: 50-125 %*	"	"	"	

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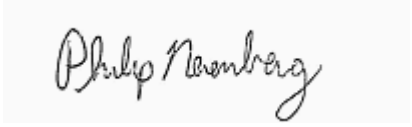

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP3-20140328 (A4D0003-03RE2)			**Matrix: Water**		**Batch: 4040120**			
Acenaphthene	ND	0.0388	0.0777	ug/L	4	04/29/14 16:14	EPA 8270D	
Acenaphthylene	ND	0.0388	0.0777	"	"	"	"	
Anthracene	ND	0.0388	0.0777	"	"	"	"	
Benz(a)anthracene	**0.0722**	0.0388	0.0777	"	"	"	"	J
Benzo(a)pyrene	**0.142**	0.0583	0.117	"	"	"	"	
Benzo(b)fluoranthene	**0.225**	0.0583	0.117	"	"	"	"	
Benzo(k)fluoranthene	**0.0944**	0.0583	0.117	"	"	"	"	J
Benzo(g,h,i)perylene	**0.184**	0.0388	0.0777	"	"	"	"	
Chrysene	**0.182**	0.0388	0.0777	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0388	0.0777	"	"	"	"	
Fluoranthene	**0.209**	0.0388	0.0777	"	"	"	"	
Fluorene	ND	0.0388	0.0777	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**0.102**	0.0388	0.0777	"	"	"	"	
1-Methylnaphthalene	ND	0.0777	0.155	"	"	"	"	
2-Methylnaphthalene	ND	0.0777	0.155	"	"	"	"	
Naphthalene	ND	0.0777	0.155	"	"	"	"	
Phenanthrene	**0.0863**	0.0388	0.0777	"	"	"	"	
Pyrene	**0.319**	0.0388	0.0777	"	"	"	"	
Carbazole	**0.0744**	0.0583	0.117	"	"	"	"	J
Dibenzofuran	ND	0.0388	0.0777	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**2.15**	0.971	1.94	"	"	"	"	
Butyl benzyl phthalate	ND	0.971	1.94	"	"	"	"	
Diethylphthalate	ND	0.971	1.94	"	"	"	"	
Dimethylphthalate	ND	0.971	1.94	"	"	"	"	
Di-n-butylphthalate	ND	0.971	1.94	"	"	"	"	
Di-n-octyl phthalate	ND	0.971	1.94	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery: 76 %*	*Limits: 35-120 %*		"	"	"	
2-Fluorobiphenyl (Surr)		*68 %*	*Limits: 30-120 %*		"	"	"	
p-Terphenyl-d14 (Surr)		*72 %*	*Limits: 50-125 %*		"	"	"	

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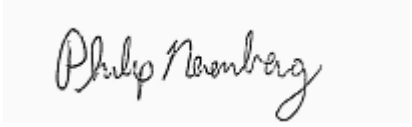

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP6-20140328 (A4D0003-04RE2)			**Matrix: Water**		**Batch: 4040120**			
Acenaphthene	ND	0.0481	0.0962	ug/L	5	04/29/14 16:51	EPA 8270D	
Acenaphthylene	ND	0.0481	0.0962	"	"	"	"	
Anthracene	ND	0.0481	0.0962	"	"	"	"	
Benz(a)anthracene	**0.103**	0.0481	0.0962	"	"	"	"	
Benzo(a)pyrene	**0.177**	0.0721	0.144	"	"	"	"	
Benzo(b)fluoranthene	**0.264**	0.0721	0.144	"	"	"	"	
Benzo(k)fluoranthene	**0.121**	0.0721	0.144	"	"	"	"	J
Benzo(g,h,i)perylene	**0.235**	0.0481	0.0962	"	"	"	"	
Chrysene	**0.196**	0.0481	0.0962	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0481	0.0962	"	"	"	"	
Fluoranthene	**0.221**	0.0481	0.0962	"	"	"	"	
Fluorene	ND	0.0481	0.0962	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**0.127**	0.0481	0.0962	"	"	"	"	
1-Methylnaphthalene	ND	0.0962	0.192	"	"	"	"	
2-Methylnaphthalene	ND	0.0962	0.192	"	"	"	"	
Naphthalene	ND	0.0962	0.192	"	"	"	"	
Phenanthrene	**0.0806**	0.0481	0.0962	"	"	"	"	J
Pyrene	**0.349**	0.0481	0.0962	"	"	"	"	
Carbazole	**0.0809**	0.0721	0.144	"	"	"	"	J
Dibenzofuran	ND	0.0481	0.0962	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**2.92**	1.20	2.40	"	"	"	"	
Butyl benzyl phthalate	ND	1.20	2.40	"	"	"	"	
Diethylphthalate	ND	1.20	2.40	"	"	"	"	
Dimethylphthalate	ND	1.20	2.40	"	"	"	"	
Di-n-butylphthalate	ND	1.20	2.40	"	"	"	"	
Di-n-octyl phthalate	ND	1.20	2.40	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery: 74 %*	*Limits: 35-120 %*	"	"	"		
2-Fluorobiphenyl (Surr)		*74 %*	*Limits: 30-120 %*	"	"	"		
p-Terphenyl-d14 (Surr)		*86 %*	*Limits: 50-125 %*	"	"	"		

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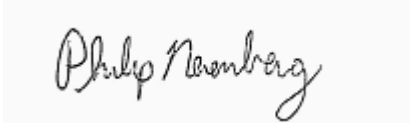

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP1-20140328 (A4D0003-01)			**Matrix: Water**					
Batch: 4040357								
Aluminum	**82.5**	25.0	50.0	ug/L	1	04/14/14 13:48	EPA 6020A	
Antimony	ND	1.00	2.00	"	"	"	"	
Arsenic	**0.522**	0.500	1.00	"	"	"	"	J
Cadmium	**0.0556**	0.0400	0.200	"	"	"	"	J
Chromium	**0.544**	0.500	1.00	"	"	"	"	J
Copper	**9.09**	0.500	1.00	"	"	"	"	
Lead	**0.967**	0.100	0.200	"	"	"	"	
Manganese	**72.4**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	ND	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**29.0**	2.00	4.00	"	"	"	"	
B21-SWP2-20140328 (A4D0003-02)			**Matrix: Water**					
Batch: 4040357								
Aluminum	**3000**	25.0	50.0	ug/L	1	04/14/14 13:51	EPA 6020A	
Antimony	ND	1.00	2.00	"	"	"	"	
Arsenic	**0.544**	0.500	1.00	"	"	"	"	J
Cadmium	**0.211**	0.0400	0.200	"	"	"	"	
Chromium	**5.38**	0.500	1.00	"	"	"	"	
Copper	**6.63**	0.500	1.00	"	"	"	"	
Lead	**4.68**	0.100	0.200	"	"	"	"	
Manganese	**155**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**1.97**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**77.1**	2.00	4.00	"	"	"	"	
B21-SWP3-20140328 (A4D0003-03)			**Matrix: Water**					
Batch: 4040357								
Aluminum	**34200**	56.3	112	ug/L	1	04/14/14 13:54	EPA 6020A	
Antimony	ND	2.25	4.50	"	"	"	"	R-03
Arsenic	**3.42**	1.12	2.25	"	"	"	"	
Cadmium	**1.80**	0.0900	0.450	"	"	"	"	
Chromium	**296**	1.12	2.25	"	"	"	"	
Copper	**128**	1.12	2.25	"	"	"	"	
Lead	**93.4**	0.225	0.450	"	"	"	"	

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP3-20140328 (A4D0003-03)			**Matrix: Water**					
Manganese	**3240**	1.12	2.25	ug/L	1	"	EPA 6020A	
Mercury	ND	0.0900	0.180	"	"	"	"	R-03
Nickel	**23.6**	1.12	2.25	"	"	"	"	
Silver	**0.225**	0.225	0.450	"	"	"	"	J, R-03
Zinc	**594**	4.50	9.00	"	"	"	"	
B21-SWP6-20140328 (A4D0003-04)			**Matrix: Water**					
Batch: 4040357								
Aluminum	**19200**	56.3	112	ug/L	1	04/14/14 13:57	EPA 6020A	
Antimony	ND	2.25	4.50	"	"	"	"	R-03
Arsenic	**2.02**	1.12	2.25	"	"	"	"	J, R-03
Cadmium	**0.900**	0.0900	0.450	"	"	"	"	
Chromium	**230**	1.12	2.25	"	"	"	"	
Copper	**67.0**	1.12	2.25	"	"	"	"	
Lead	**54.5**	0.225	0.450	"	"	"	"	
Manganese	**2470**	1.12	2.25	"	"	"	"	
Mercury	ND	0.0900	0.180	"	"	"	"	R-03
Nickel	**13.0**	1.12	2.25	"	"	"	"	
Silver	ND	0.225	0.450	"	"	"	"	R-03
Zinc	**367**	4.50	9.00	"	"	"	"	

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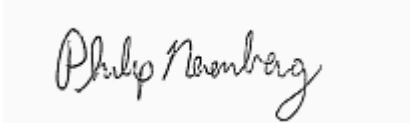

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP1-20140328 (A4D0003-01)			**Matrix: Water**					
Batch: 4040312								
Aluminum	ND	25.0	50.0	ug/L	1	04/11/14 14:38	EPA 6020A (Diss)	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	ND	0.0400	0.200	"	"	"	"	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**1.67**	0.500	1.00	"	"	"	"	
Lead	ND	0.100	0.200	"	"	"	"	
Manganese	**54.3**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**0.900**	0.500	1.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**22.5**	2.00	4.00	"	"	"	"	
B21-SWP2-20140328 (A4D0003-02)			**Matrix: Water**					
Batch: 4040312								
Aluminum	**72.7**	25.0	50.0	ug/L	1	04/11/14 14:41	EPA 6020A (Diss)	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.0444**	0.0400	0.200	"	"	"	"	J
Chromium	**0.700**	0.500	1.00	"	"	"	"	J
Copper	**1.42**	0.500	1.00	"	"	"	"	
Lead	**0.222**	0.100	0.200	"	"	"	"	
Manganese	**72.4**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**1.61**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**23.4**	2.00	4.00	"	"	"	"	
B21-SWP3-20140328 (A4D0003-03)			**Matrix: Water**					
Batch: 4040312								
Aluminum	**45.7**	25.0	50.0	ug/L	1	04/11/14 14:50	EPA 6020A (Diss)	J
Antimony	**0.967**	0.500	1.00	"	"	"	"	J
Arsenic	**0.633**	0.500	1.00	"	"	"	"	J
Cadmium	**0.289**	0.0400	0.200	"	"	"	"	
Chromium	**1.79**	0.500	1.00	"	"	"	"	
Copper	**6.61**	0.500	1.00	"	"	"	"	

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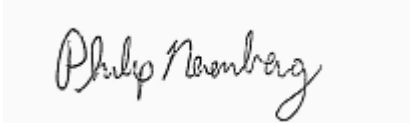

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP3-20140328 (A4D0003-03)			**Matrix: Water**					
Lead	**0.544**	0.100	0.200	ug/L	1	"	EPA 6020A (Diss)	
Manganese	**26.6**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**1.01**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**16.4**	2.00	4.00	"	"	"	"	
B21-SWP6-20140328 (A4D0003-04)			**Matrix: Water**					
Batch: 4040312								
Aluminum	**58.6**	25.0	50.0	ug/L	1	04/11/14 14:53	EPA 6020A (Diss)	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.0444**	0.0400	0.200	"	"	"	"	J
Chromium	**1.04**	0.500	1.00	"	"	"	"	
Copper	**1.97**	0.500	1.00	"	"	"	"	
Lead	**0.200**	0.100	0.200	"	"	"	"	
Manganese	**24.3**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	ND	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**4.52**	2.00	4.00	"	"	"	"	

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B21-SWP1-20140328 (A4D0003-01)			**Matrix: Water**					
Batch: 4040129								
Total Suspended Solids	ND	5.00	5.00	mg/L	1	04/07/14 10:55	SM 2540 D	
Batch: 4040130								
Total Organic Carbon	ND	1.00	1.00	"	"	04/04/14 15:34	SM 5310 B	
B21-SWP2-20140328 (A4D0003-02)			**Matrix: Water**					
Batch: 4040129								
Total Suspended Solids	**88.0**	5.00	5.00	mg/L	1	04/07/14 10:55	SM 2540 D	
Batch: 4040130								
Total Organic Carbon	**2.76**	1.00	1.00	"	"	04/04/14 15:57	SM 5310 B	
B21-SWP3-20140328 (A4D0003-03)			**Matrix: Water**					
Batch: 4040129								
Total Suspended Solids	**1000**	10.0	10.0	mg/L	1	04/07/14 10:55	SM 2540 D	
Batch: 4040130								
Total Organic Carbon	**7.06**	1.00	1.00	"	"	04/04/14 16:22	SM 5310 B	
B21-SWP6-20140328 (A4D0003-04)			**Matrix: Water**					
Batch: 4040129								
Total Suspended Solids	**802**	10.0	10.0	mg/L	1	04/07/14 10:55	SM 2540 D	
Batch: 4040130								
Total Organic Carbon	**3.84**	1.00	1.00	"	"	04/04/14 16:45	SM 5310 B	

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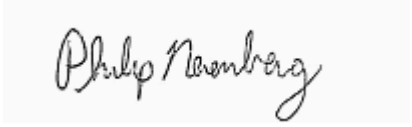

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4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040249 - EPA 3510C (Fuels/Acid Ext.)									**Water**			
Blank (4040249-BLK1)					Prepared: 04/09/14 09:48 Analyzed: 04/09/14 20:03							
NWTPH-Dx												
Diesel	ND	0.0909	0.182	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 94 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS (4040249-BS1)					Prepared: 04/09/14 09:48 Analyzed: 04/09/14 20:26							
NWTPH-Dx												
Diesel	1.02	0.100	0.200	mg/L	1	1.25	---	82	58-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 98 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS Dup (4040249-BSD1)					Prepared: 04/09/14 09:48 Analyzed: 04/09/14 20:50							**Q-19**
NWTPH-Dx												
Diesel	1.05	0.100	0.200	mg/L	1	1.25	---	84	58-115%	3	20%	
Surr: o-Terphenyl (Surr)			*Recovery: 100 %*	*Limits: 50-150 %*		*Dilution: 1x*						
Batch 4040288 - EPA 3510C (Fuels/Acid Ext.)									**Water**			
Blank (4040288-BLK1)					Prepared: 04/10/14 09:02 Analyzed: 04/10/14 20:59							
NWTPH-Dx												
Diesel	ND	0.0909	0.182	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 97 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS (4040288-BS1)					Prepared: 04/10/14 09:02 Analyzed: 04/10/14 21:17							
NWTPH-Dx												
Diesel	1.07	0.100	0.200	mg/L	1	1.25	---	86	58-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 107 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS Dup (4040288-BSD1)					Prepared: 04/10/14 09:02 Analyzed: 04/10/14 21:36							**Q-19**
NWTPH-Dx												
Diesel	1.07	0.100	0.200	mg/L	1	1.25	---	86	58-115%	0.3	20%	
Surr: o-Terphenyl (Surr)			*Recovery: 103 %*	*Limits: 50-150 %*		*Dilution: 1x*						

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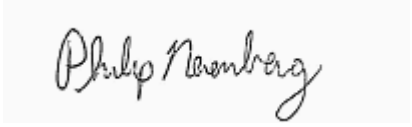

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4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040095 - EPA 5030B									**Water**			
Blank (4040095-BLK1)					Prepared: 04/03/14 12:00 Analyzed: 04/03/14 15:16							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 114 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*108 %*	*50-150 %*			*"*					
LCS (4040095-BS2)					Prepared: 04/03/14 12:00 Analyzed: 04/03/14 14:24							
NWTPH-Gx (MS)												
Gasoline Range Organics	0.522	0.0500	0.100	mg/L	1	0.500	---	104	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 112 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*108 %*	*50-150 %*			*"*					
Duplicate (4040095-DUP1)					Prepared: 04/03/14 17:00 Analyzed: 04/03/14 17:51							
QC Source Sample: B21-SWP1-20140328 (A4D0003-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	ND	---	---	---	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 121 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*114 %*	*50-150 %*			*"*					

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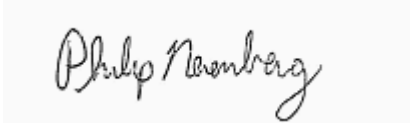

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4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040202 - EPA 3510C (Neutral pH)							**Water**					
Blank (4040202-BLK1)					Prepared: 04/08/14 06:57 Analyzed: 04/09/14 09:11							**C-07**
EPA 8082A												
Aroclor 1016	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1221	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 91 %*	*Limits: 40-135 %*		*Dilution: 1x*						
LCS (4040202-BS1)					Prepared: 04/08/14 06:57 Analyzed: 04/09/14 09:30							**C-07**
EPA 8082A												
Aroclor 1016	0.816	0.0100	0.0200	ug/L	1	1.25	---	65	40-140%	---	---	
Aroclor 1260	0.930	0.0100	0.0200	"	"	"	---	74	"	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 78 %*	*Limits: 40-135 %*		*Dilution: 1x*						
LCS Dup (4040202-BSD1)					Prepared: 04/08/14 06:57 Analyzed: 04/09/14 09:48							**C-07, Q-19**
EPA 8082A												
Aroclor 1016	0.863	0.0100	0.0200	ug/L	1	1.25	---	69	40-140%	6	30%	
Aroclor 1260	0.963	0.0100	0.0200	"	"	"	---	77	"	3	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 75 %*	*Limits: 40-135 %*		*Dilution: 1x*						

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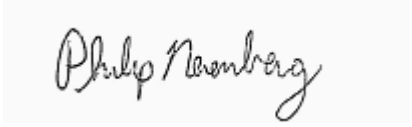

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4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040212 - EPA 3510C (Neutral pH)/3640A (GPC)							**Water**					
Blank (4040212-BLK1)					Prepared: 04/04/14 07:12 Analyzed: 04/10/14 19:33							**C-05**
EPA 8081B												
Aldrin	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
alpha-BHC	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
beta-BHC	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
delta-BHC	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
gamma-BHC (Lindane)	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
cis-Chlordane	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
trans-Chlordane	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
4,4'-DDD	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
4,4'-DDE	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
4,4'-DDT	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Dieldrin	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endosulfan I	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endosulfan II	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endosulfan sulfate	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endrin	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endrin Aldehyde	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Endrin ketone	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Heptachlor	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Heptachlor epoxide	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Methoxychlor	ND	0.0273	0.0545	"	"	---	---	---	---	---	---	
Chlordane (Technical)	ND	0.342	0.682	"	"	---	---	---	---	---	---	
Toxaphene (Total)	ND	0.342	0.682	"	"	---	---	---	---	---	---	
cis-Nonachlor	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
2,4'-DDD	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
2,4'-DDE	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
2,4'-DDT	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	0.0273	0.0545	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Mirex	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Oxychlordane	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	

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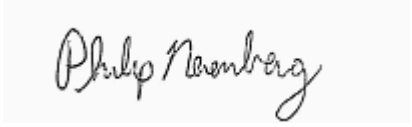

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040212 - EPA 3510C (Neutral pH)/3640A (GPC)								**Water**				
Blank (4040212-BLK1)					Prepared: 04/04/14 07:12	Analyzed: 04/10/14 19:33						**C-05**
trans-Nonachlor	ND	0.00909	0.0182	ug/L	"	---	---	---	---	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 57 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*96 %*	*30-135 %*			*"*					
LCS (4040212-BS1)					Prepared: 04/04/14 07:12	Analyzed: 04/10/14 19:51						**C-05**
EPA 8081B												
Aldrin	0.344	0.0100	0.0200	ug/L	1	0.500	---	69	25-140%	---	---	
alpha-BHC	0.425	0.0100	0.0200	"	"	"	---	85	60-130%	---	---	
beta-BHC	0.437	0.0100	0.0200	"	"	"	---	87	65-125%	---	---	
delta-BHC	0.482	0.0100	0.0200	"	"	"	---	96	45-135%	---	---	
gamma-BHC (Lindane)	0.418	0.0100	0.0200	"	"	"	---	84	25-135%	---	---	
cis-Chlordane	0.443	0.0100	0.0200	"	"	"	---	89	65-125%	---	---	
trans-Chlordane	0.441	0.0100	0.0200	"	"	"	---	88	60-125%	---	---	
4,4'-DDD	0.507	0.0100	0.0200	"	"	"	---	101	25-150%	---	---	
4,4'-DDE	0.473	0.0100	0.0200	"	"	"	---	95	35-140%	---	---	
4,4'-DDT	0.537	0.0100	0.0200	"	"	"	---	107	45-140%	---	---	Q-41
Dieldrin	0.460	0.0100	0.0200	"	"	"	---	92	60-130%	---	---	
Endosulfan I	0.450	0.0100	0.0200	"	"	"	---	90	50-110%	---	---	
Endosulfan II	0.468	0.0100	0.0200	"	"	"	---	94	30-130%	---	---	
Endosulfan sulfate	0.492	0.0100	0.0200	"	"	"	---	98	55-135%	---	---	
Endrin	0.498	0.0100	0.0200	"	"	"	---	100	"	---	---	
Endrin Aldehyde	0.451	0.0100	0.0200	"	"	"	---	90	"	---	---	
Endrin ketone	0.490	0.0100	0.0200	"	"	"	---	98	75-125%	---	---	
Heptachlor	0.381	0.0100	0.0200	"	"	"	---	76	40-130%	---	---	
Heptachlor epoxide	0.436	0.0100	0.0200	"	"	"	---	87	60-130%	---	---	
Methoxychlor	0.542	0.0300	0.0600	"	"	"	---	108	55-150%	---	---	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 61 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*94 %*	*30-135 %*			*"*					
LCS (4040212-BS2)					Prepared: 04/04/14 07:12	Analyzed: 04/10/14 20:27						**C-05**
EPA 8081B												
cis-Nonachlor	0.483	0.0100	0.0200	ug/L	1	0.500	---	97	25-120%	---	---	

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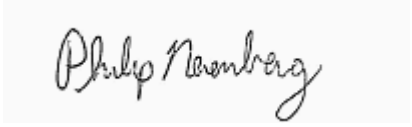

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040212 - EPA 3510C (Neutral pH)/3640A (GPC)							**Water**					
LCS (4040212-BS2)					Prepared: 04/04/14 07:12		Analyzed: 04/10/14 20:27					**C-05**
2,4'-DDD	0.478	0.0100	0.0200	ug/L	"	"	---	96	30-135%	---	---	
2,4'-DDE	0.463	0.0100	0.0200	"	"	"	---	93	50-140%	---	---	
2,4'-DDT	0.527	0.0100	0.0200	"	"	"	---	105	45-140%	---	---	
Hexachlorobenzene	0.374	0.0300	0.0600	"	"	"	---	75	25-120%	---	---	
Hexachlorobutadiene	0.172	0.0100	0.0200	"	"	"	---	34	"	---	---	
Mirex	0.507	0.0100	0.0200	"	"	"	---	101	"	---	---	
Oxychlordane	0.431	0.0100	0.0200	"	"	"	---	86	"	---	---	
trans-Nonachlor	0.452	0.0100	0.0200	"	"	"	---	90	"	---	---	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 59 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*103 %*	*30-135 %*			*"*					
LCS Dup (4040212-BSD1)					Prepared: 04/04/14 07:12		Analyzed: 04/10/14 20:09					**C-05, Q-19**
EPA 8081B												
Aldrin	0.319	0.0100	0.0200	ug/L	1	0.500	---	64	25-140%	7	30%	
alpha-BHC	0.438	0.0100	0.0200	"	"	"	---	88	60-130%	3	30%	
beta-BHC	0.467	0.0100	0.0200	"	"	"	---	93	65-125%	7	30%	
delta-BHC	0.524	0.0100	0.0200	"	"	"	---	105	45-135%	8	30%	
gamma-BHC (Lindane)	0.441	0.0100	0.0200	"	"	"	---	88	25-135%	5	30%	
cis-Chlordane	0.471	0.0100	0.0200	"	"	"	---	94	65-125%	6	30%	
trans-Chlordane	0.475	0.0100	0.0200	"	"	"	---	95	60-125%	7	30%	
4,4'-DDD	0.552	0.0100	0.0200	"	"	"	---	110	25-150%	9	30%	
4,4'-DDE	0.517	0.0100	0.0200	"	"	"	---	103	35-140%	9	30%	
4,4'-DDT	0.608	0.0100	0.0200	"	"	"	---	122	45-140%	13	30%	Q-41
Dieldrin	0.502	0.0100	0.0200	"	"	"	---	100	60-130%	9	30%	
Endosulfan I	0.481	0.0100	0.0200	"	"	"	---	96	50-110%	7	30%	
Endosulfan II	0.523	0.0100	0.0200	"	"	"	---	105	30-130%	11	30%	
Endosulfan sulfate	0.557	0.0100	0.0200	"	"	"	---	111	55-135%	13	30%	
Endrin	0.565	0.0100	0.0200	"	"	"	---	113	"	13	30%	
Endrin Aldehyde	0.510	0.0100	0.0200	"	"	"	---	102	"	12	30%	
Endrin ketone	0.560	0.0100	0.0200	"	"	"	---	112	75-125%	13	30%	
Heptachlor	0.345	0.0100	0.0200	"	"	"	---	69	40-130%	10	30%	
Heptachlor epoxide	0.466	0.0100	0.0200	"	"	"	---	93	60-130%	7	30%	

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Organochlorine Pesticides by EPA 8081B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040212 - EPA 3510C (Neutral pH)/3640A (GPC)							**Water**					
LCS Dup (4040212-BSD1)					Prepared: 04/04/14 07:12		Analyzed: 04/10/14 20:09					**C-05, Q-19**
Methoxychlor	0.627	0.0300	0.0600	"	"	"	---	125	55-150%	15	30%	Q-41
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 51 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*101 %*	*30-135 %*			*"*					
LCS Dup (4040212-BSD2)					Prepared: 04/04/14 07:12		Analyzed: 04/10/14 20:44					**C-05, Q-19**
EPA 8081B												
cis-Nonachlor	0.475	0.0100	0.0200	ug/L	1	0.500	---	95	25-120%	2	30%	
2,4'-DDD	0.455	0.0100	0.0200	"	"	"	---	91	30-135%	5	30%	
2,4'-DDE	0.458	0.0100	0.0200	"	"	"	---	92	50-140%	1	30%	
2,4'-DDT	0.504	0.0100	0.0200	"	"	"	---	101	45-140%	4	30%	
Hexachlorobenzene	0.391	0.0300	0.0600	"	"	"	---	78	25-120%	4	30%	
Hexachlorobutadiene	0.288	0.0100	0.0200	"	"	"	---	58	"	50	30%	Q-24
Mirex	0.479	0.0100	0.0200	"	"	"	---	96	"	6	30%	
Oxychlordane	0.418	0.0100	0.0200	"	"	"	---	84	"	3	30%	
trans-Nonachlor	0.439	0.0100	0.0200	"	"	"	---	88	"	3	30%	
Surr: 2,4,5,6-TCMX (Surr)			*Recovery: 78 %*	*Limits: 25-140 %*			*Dilution: 1x*					
Decachlorobiphenyl (Surr)			*96 %*	*30-135 %*			*"*					

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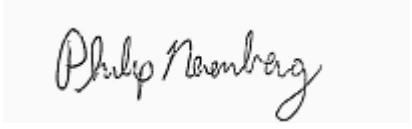

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040120 - EPA 3510C (Acid Extraction)							**Water**					
Blank (4040120-BLK1)					Prepared: 04/04/14 07:09 Analyzed: 04/04/14 13:45							
EPA 8270D												
Acenaphthene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(b+k)fluoranthene(s)	ND	0.0273	0.0545	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Chrysene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluoranthene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluorene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Naphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Phenanthrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Carbazole	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	0.227	0.455	"	"	---	---	---	---	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 64 %*	*Limits: 35-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*58 %*	*30-120 %*	*"*
p-Terphenyl-d14 (Surr)	*69 %*	*50-125 %*	*"*

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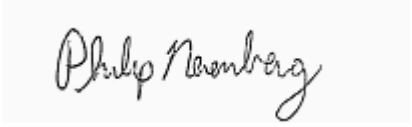

Philip Nerenberg, Lab Director

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040120 - EPA 3510C (Acid Extraction)								**Water**				
LCS (4040120-BS1)					Prepared: 04/04/14 07:09 Analyzed: 04/04/14 14:29							
EPA 8270D												
Acenaphthene	2.63	0.0100	0.0200	ug/L	1	4.00	---	66	45-125%	---	---	
Acenaphthylene	2.62	0.0100	0.0200	"	"	"	---	66	50-125%	---	---	
Anthracene	2.92	0.0100	0.0200	"	"	"	---	73	55-125%	---	---	
Benz(a)anthracene	3.22	0.0100	0.0200	"	"	"	---	80	"	---	---	
Benzo(a)pyrene	3.64	0.0150	0.0300	"	"	"	---	91	"	---	---	
Benzo(b)fluoranthene	3.73	0.0150	0.0300	"	"	"	---	93	45-125%	---	---	
Benzo(k)fluoranthene	3.14	0.0150	0.0300	"	"	"	---	79	"	---	---	
Benzo(b+k)fluoranthene(s)	7.01	0.0300	0.0600	"	"	8.00	---	88	"	---	---	
Benzo(g,h,i)perylene	3.46	0.0100	0.0200	"	"	4.00	---	87	40-125%	---	---	
Chrysene	3.34	0.0100	0.0200	"	"	"	---	84	55-125%	---	---	
Dibenz(a,h)anthracene	3.39	0.0100	0.0200	"	"	"	---	85	40-125%	---	---	
Fluoranthene	3.11	0.0100	0.0200	"	"	"	---	78	55-125%	---	---	
Fluorene	2.81	0.0100	0.0200	"	"	"	---	70	50-125%	---	---	
Indeno(1,2,3-cd)pyrene	3.39	0.0100	0.0200	"	"	"	---	85	45-125%	---	---	
1-Methylnaphthalene	2.30	0.0200	0.0400	"	"	"	---	57	45-120%	---	---	
2-Methylnaphthalene	2.26	0.0200	0.0400	"	"	"	---	56	"	---	---	
Naphthalene	2.07	0.0200	0.0400	"	"	"	---	52	40-125%	---	---	
Phenanthrene	2.86	0.0100	0.0200	"	"	"	---	71	50-125%	---	---	
Pyrene	3.07	0.0100	0.0200	"	"	"	---	77	"	---	---	
Carbazole	3.12	0.0150	0.0300	"	"	"	---	78	"	---	---	
Dibenzofuran	2.69	0.0100	0.0200	"	"	"	---	67	55-125%	---	---	
Bis(2-ethylhexyl)phthalate	3.49	0.250	0.500	"	"	"	---	87	40-125%	---	---	
Butyl benzyl phthalate	3.37	0.250	0.500	"	"	"	---	84	45-125%	---	---	
Diethylphthalate	3.22	0.250	0.500	"	"	"	---	80	40-125%	---	---	
Dimethylphthalate	3.30	0.250	0.500	"	"	"	---	83	25-125%	---	---	
Di-n-butylphthalate	3.25	0.250	0.500	"	"	"	---	81	55-125%	---	---	
Di-n-octyl phthalate	3.45	0.250	0.500	"	"	"	---	86	35-125%	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 65 %*	*Limits: 35-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*62 %*	*30-120 %*	*"*
p-Terphenyl-d14 (Surr)	*74 %*	*50-125 %*	*"*

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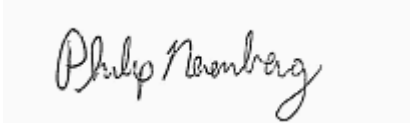

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Tigard, OR 97223
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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040120 - EPA 3510C (Acid Extraction)							**Water**					
LCS Dup (4040120-BSD1)					Prepared: 04/04/14 07:09		Analyzed: 04/04/14 15:13					**Q-19**
EPA 8270D												
Acenaphthene	2.62	0.0100	0.0200	ug/L	1	4.00	---	66	45-125%	0.4	30%	
Acenaphthylene	2.55	0.0100	0.0200	"	"	"	---	64	50-125%	3	30%	
Anthracene	2.91	0.0100	0.0200	"	"	"	---	73	55-125%	0.6	30%	
Benz(a)anthracene	3.32	0.0100	0.0200	"	"	"	---	83	"	3	30%	
Benzo(a)pyrene	3.80	0.0150	0.0300	"	"	"	---	95	"	4	30%	
Benzo(b)fluoranthene	3.71	0.0150	0.0300	"	"	"	---	93	45-125%	0.6	30%	
Benzo(k)fluoranthene	3.59	0.0150	0.0300	"	"	"	---	90	"	13	30%	
Benzo(b+k)fluoranthene(s)	7.28	0.0300	0.0600	"	"	8.00	---	91	"	4	30%	
Benzo(g,h,i)perylene	3.59	0.0100	0.0200	"	"	4.00	---	90	40-125%	3	30%	
Chrysene	3.42	0.0100	0.0200	"	"	"	---	86	55-125%	2	30%	
Dibenz(a,h)anthracene	3.49	0.0100	0.0200	"	"	"	---	87	40-125%	3	30%	
Fluoranthene	3.15	0.0100	0.0200	"	"	"	---	79	55-125%	1	30%	
Fluorene	2.73	0.0100	0.0200	"	"	"	---	68	50-125%	3	30%	
Indeno(1,2,3-cd)pyrene	3.46	0.0100	0.0200	"	"	"	---	87	45-125%	2	30%	
1-Methylnaphthalene	2.36	0.0200	0.0400	"	"	"	---	59	45-120%	3	30%	
2-Methylnaphthalene	2.31	0.0200	0.0400	"	"	"	---	58	"	3	30%	
Naphthalene	2.11	0.0200	0.0400	"	"	"	---	53	40-125%	2	30%	
Phenanthrene	2.89	0.0100	0.0200	"	"	"	---	72	50-125%	1	30%	
Pyrene	3.10	0.0100	0.0200	"	"	"	---	77	"	0.9	30%	
Carbazole	3.16	0.0150	0.0300	"	"	"	---	79	"	1	30%	
Dibenzofuran	2.63	0.0100	0.0200	"	"	"	---	66	55-125%	2	30%	
Bis(2-ethylhexyl)phthalate	3.67	0.250	0.500	"	"	"	---	92	40-125%	5	30%	
Butyl benzyl phthalate	3.50	0.250	0.500	"	"	"	---	87	45-125%	4	30%	
Diethylphthalate	3.10	0.250	0.500	"	"	"	---	77	40-125%	4	30%	
Dimethylphthalate	3.10	0.250	0.500	"	"	"	---	77	25-125%	6	30%	
Di-n-butylphthalate	3.28	0.250	0.500	"	"	"	---	82	55-125%	0.8	30%	
Di-n-octyl phthalate	3.66	0.250	0.500	"	"	"	---	92	35-125%	6	30%	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 61 %*	*Limits: 35-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*60 %*	*30-120 %*	*"*
p-Terphenyl-d14 (Surr)	*77 %*	*50-125 %*	*"*

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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040357 - EPA 3015A								**Water**				
Blank (4040357-BLK1)					Prepared: 04/14/14 08:21 Analyzed: 04/14/14 13:12							
EPA 6020A												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Antimony	ND	1.00	2.00	"	"	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	0.0400	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (4040357-BS1)					Prepared: 04/14/14 08:21 Analyzed: 04/14/14 13:15							
EPA 6020A												
Aluminum	5530	25.0	50.0	ug/L	1	5560	---	100	80-120%	---	---	
Antimony	27.8	1.00	2.00	"	"	27.8	---	100	"	---	---	
Arsenic	54.6	0.500	1.00	"	"	55.6	---	98	"	---	---	
Cadmium	54.0	0.0400	0.200	"	"	"	---	97	"	---	---	
Chromium	56.4	0.500	1.00	"	"	"	---	102	"	---	---	
Copper	53.7	0.500	1.00	"	"	"	---	97	"	---	---	
Lead	54.3	0.100	0.200	"	"	"	---	98	"	---	---	
Manganese	55.8	0.500	1.00	"	"	"	---	100	"	---	---	
Mercury	1.11	0.0400	0.0800	"	"	1.11	---	100	"	---	---	
Nickel	56.2	0.500	1.00	"	"	55.6	---	101	"	---	---	
Silver	27.9	0.100	0.200	"	"	27.8	---	100	"	---	---	
Zinc	52.4	2.00	4.00	"	"	55.6	---	94	"	---	---	
Post Spike (4040357-PS1)					Prepared: 04/15/14 16:25 Analyzed: 04/15/14 16:34							
Zinc	355			ug/L	1	39.8	339	40	80-120%		---	PS-02

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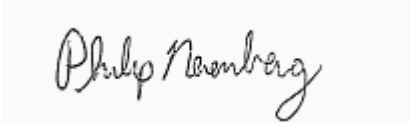

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503-718-0333 Fax

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4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040312 - EPA 3015A - Dissolved								**Water**				
Blank (4040312-BLK1)					Prepared: 04/11/14 08:35 Analyzed: 04/11/14 14:20							
EPA 6020A (Diss)												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Antimony	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	0.0400	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (4040312-BS1)					Prepared: 04/11/14 08:35 Analyzed: 04/11/14 14:23							
EPA 6020A (Diss)												
Aluminum	5220	25.0	50.0	ug/L	1	5560	---	94	80-120%	---	---	
Antimony	26.2	0.500	1.00	"	"	27.8	---	94	"	---	---	
Arsenic	52.4	0.500	1.00	"	"	55.6	---	94	"	---	---	
Cadmium	53.7	0.0400	0.200	"	"	"	---	97	"	---	---	
Chromium	51.9	0.500	1.00	"	"	"	---	93	"	---	---	
Copper	53.0	0.500	1.00	"	"	"	---	95	"	---	---	
Lead	57.2	0.100	0.200	"	"	"	---	103	"	---	---	
Manganese	55.5	0.500	1.00	"	"	"	---	100	"	---	---	
Mercury	1.08	0.0400	0.0800	"	"	1.11	---	98	"	---	---	
Nickel	52.1	0.500	1.00	"	"	55.6	---	94	"	---	---	
Silver	27.1	0.100	0.200	"	"	27.8	---	98	"	---	---	
Zinc	51.6	2.00	4.00	"	"	55.6	---	93	"	---	---	
Duplicate (4040312-DUP1)					Prepared: 04/11/14 08:35 Analyzed: 04/11/14 14:44							
QC Source Sample: B21-SWP2-20140328 (A4D0003-02)												
EPA 6020A (Diss)												

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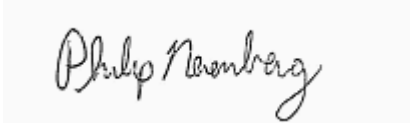

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503-718-2323 Phone
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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040312 - EPA 3015A - Dissolved							**Water**					
Duplicate (4040312-DUP1)					Prepared: 04/11/14 08:35 Analyzed: 04/11/14 14:44							
QC Source Sample: B21-SWP2-20140328 (A4D0003-02)												
Aluminum	**70.8**	25.0	50.0	ug/L	1	---	72.7	---	---	3	20%	
Antimony	ND	0.500	1.00	"	"	---	ND	---	---	---	20%	
Arsenic	ND	0.500	1.00	"	"	---	ND	---	---	---	20%	
Cadmium	**0.0444**	0.0400	0.200	"	"	---	0.0444	---	---	0	20%	J
Chromium	**0.689**	0.500	1.00	"	"	---	0.700	---	---	2	20%	J
Copper	**1.42**	0.500	1.00	"	"	---	1.42	---	---	0	20%	
Lead	**0.211**	0.100	0.200	"	"	---	0.222	---	---	5	20%	
Manganese	**73.4**	0.500	1.00	"	"	---	72.4	---	---	1	20%	
Mercury	ND	0.0400	0.0800	"	"	---	ND	---	---	---	20%	
Nickel	**1.60**	0.500	1.00	"	"	---	1.61	---	---	0.7	20%	
Silver	ND	0.100	0.200	"	"	---	ND	---	---	---	20%	
Zinc	**23.9**	2.00	4.00	"	"	---	23.4	---	---	2	20%	
Matrix Spike (4040312-MS1)					Prepared: 04/11/14 08:35 Analyzed: 04/11/14 14:47							
QC Source Sample: B21-SWP2-20140328 (A4D0003-02)												
EPA 6020A (Diss)												
Aluminum	5400	25.0	50.0	ug/L	1	5560	72.7	96	75-125%	---	---	
Antimony	26.7	0.500	1.00	"	"	27.8	ND	96	"	---	---	
Arsenic	53.4	0.500	1.00	"	"	55.6	ND	96	"	---	---	
Cadmium	55.6	0.0400	0.200	"	"	"	0.0444	100	"	---	---	
Chromium	53.4	0.500	1.00	"	"	"	0.700	95	"	---	---	
Copper	55.9	0.500	1.00	"	"	"	1.42	98	"	---	---	
Lead	58.0	0.100	0.200	"	"	"	0.222	104	"	---	---	
Manganese	132	0.500	1.00	"	"	"	72.4	107	"	---	---	
Mercury	1.11	0.0400	0.0800	"	"	1.11	ND	100	"	---	---	
Nickel	54.8	0.500	1.00	"	"	55.6	1.61	96	"	---	---	
Silver	27.7	0.100	0.200	"	"	27.8	ND	100	"	---	---	
Zinc	77.2	2.00	4.00	"	"	55.6	23.4	97	"	---	---	

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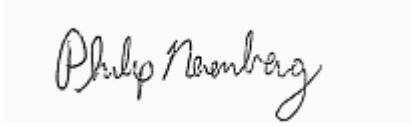

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4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040129 - Total Suspended Solids									Water			
Blank (4040129-BLK1)					Prepared: 04/04/14 10:32		Analyzed: 04/07/14 10:55					
SM 2540 D												
Total Suspended Solids	ND	2.00	2.00	mg/L	1	---	---	---	---	---	---	
Reference (4040129-SRM1)					Prepared: 04/04/14 10:32		Analyzed: 04/07/14 10:55					
SM 2540 D												
Total Suspended Solids	96.0			mg/L	1	100		96	90-110%	---	---	

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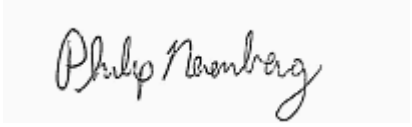

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Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 4040130 - Method Prep: Aq									Water			
Blank (4040130-BLK1)					Prepared: 04/04/14 09:33		Analyzed: 04/04/14 11:54					
SM 5310 B												
Total Organic Carbon	ND	1.00	1.00	mg/L	1	---	---	---	---	---	---	
LCS (4040130-BS1)					Prepared: 04/04/14 09:33		Analyzed: 04/04/14 12:17					
SM 5310 B												
Total Organic Carbon	8.82	1.00	1.00	mg/L	1	10.0	---	88	85-115%	---	---	

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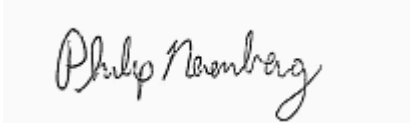

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Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

SAMPLE PREPARATION INFORMATION

Diesel and Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040249							
A4D0003-01	Water	NWTPH-Dx	03/28/14 11:30	04/09/14 09:48	1050mL/5mL	1000mL/5mL	0.95
A4D0003-02	Water	NWTPH-Dx	03/28/14 07:15	04/09/14 09:48	1000mL/5mL	1000mL/5mL	1.00
A4D0003-03RE1	Water	NWTPH-Dx	03/28/14 08:05	04/09/14 09:48	1050mL/5mL	1000mL/5mL	0.95
A4D0003-04	Water	NWTPH-Dx	03/28/14 10:15	04/09/14 09:48	1060mL/5mL	1000mL/5mL	0.94

Gasoline Range Hydrocarbons (Benzene to Naphthalene) by NWTPH-Gx

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040095							
A4D0003-01	Water	NWTPH-Gx (MS)	03/28/14 11:30	04/03/14 17:00	5mL/5mL	5mL/5mL	1.00
A4D0003-02	Water	NWTPH-Gx (MS)	03/28/14 07:15	04/03/14 17:00	5mL/5mL	5mL/5mL	1.00
A4D0003-03	Water	NWTPH-Gx (MS)	03/28/14 08:05	04/03/14 17:00	5mL/5mL	5mL/5mL	1.00
A4D0003-04	Water	NWTPH-Gx (MS)	03/28/14 10:15	04/03/14 17:00	5mL/5mL	5mL/5mL	1.00

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3510C (Neutral pH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040202							
A4D0003-01	Water	EPA 8082A	03/28/14 11:30	04/08/14 06:57	1050mL/1mL	1000mL/1mL	0.95
A4D0003-02	Water	EPA 8082A	03/28/14 07:15	04/08/14 06:57	1060mL/1mL	1000mL/1mL	0.94
A4D0003-03RE1	Water	EPA 8082A	03/28/14 08:05	04/08/14 06:57	1060mL/2mL	1000mL/1mL	1.89
A4D0003-04RE1	Water	EPA 8082A	03/28/14 10:15	04/08/14 06:57	1060mL/2mL	1000mL/1mL	1.89

Organochlorine Pesticides by EPA 8081B

Prep: EPA 3510C (Neutral pH)/3640A (GPC)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040212							
A4D0003-01RE1	Water	EPA 8081B	03/28/14 11:30	04/04/14 09:12	1040mL/10mL	1000mL/5mL	1.92
A4D0003-02RE1	Water	EPA 8081B	03/28/14 07:15	04/04/14 09:12	1050mL/10mL	1000mL/5mL	1.90
A4D0003-03RE1	Water	EPA 8081B	03/28/14 08:05	04/04/14 09:12	1010mL/10mL	1000mL/5mL	1.98
A4D0003-04RE1	Water	EPA 8081B	03/28/14 10:15	04/04/14 09:12	1030mL/10mL	1000mL/5mL	1.94

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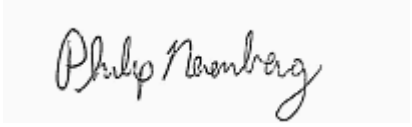

Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

SAMPLE PREPARATION INFORMATION

Semivolatile Organic Compounds by EPA 8270D - Selected Analytes

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040120							
A4D0003-01RE2	Water	EPA 8270D	03/28/14 11:30	04/04/14 09:11	1030mL/1mL	1000mL/1mL	0.97
A4D0003-02RE2	Water	EPA 8270D	03/28/14 07:15	04/04/14 09:11	1020mL/1mL	1000mL/1mL	0.98
A4D0003-03RE2	Water	EPA 8270D	03/28/14 08:05	04/04/14 09:11	1030mL/1mL	1000mL/1mL	0.97
A4D0003-04RE2	Water	EPA 8270D	03/28/14 10:15	04/04/14 09:11	1040mL/1mL	1000mL/1mL	0.96

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040357							
A4D0003-01	Water	EPA 6020A	03/28/14 11:30	04/14/14 08:21	45mL/50mL	45mL/50mL	1.00
A4D0003-02	Water	EPA 6020A	03/28/14 07:15	04/14/14 08:21	45mL/50mL	45mL/50mL	1.00
A4D0003-03	Water	EPA 6020A	03/28/14 08:05	04/14/14 08:21	20mL/50mL	45mL/50mL	2.25
A4D0003-04	Water	EPA 6020A	03/28/14 10:15	04/14/14 08:21	20mL/50mL	45mL/50mL	2.25

Dissolved Metals by EPA 6020 (ICPMS)

Prep: EPA 3015A - Dissolved

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040312							
A4D0003-01	Water	EPA 6020A (Diss)	03/28/14 11:30	04/11/14 08:35	45mL/50mL	45mL/50mL	1.00
A4D0003-02	Water	EPA 6020A (Diss)	03/28/14 07:15	04/11/14 08:35	45mL/50mL	45mL/50mL	1.00
A4D0003-03	Water	EPA 6020A (Diss)	03/28/14 08:05	04/11/14 08:35	45mL/50mL	45mL/50mL	1.00
A4D0003-04	Water	EPA 6020A (Diss)	03/28/14 10:15	04/11/14 08:35	45mL/50mL	45mL/50mL	1.00

Conventional Chemistry Parameters

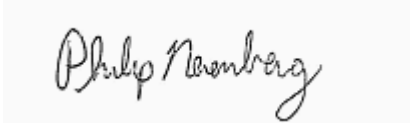
Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 4040130							
A4D0003-01	Water	SM 5310 B	03/28/14 11:30	04/04/14 09:33	40mL/40mL	1mL/1mL	1.00
A4D0003-02	Water	SM 5310 B	03/28/14 07:15	04/04/14 09:33	40mL/40mL	1mL/1mL	1.00
A4D0003-03	Water	SM 5310 B	03/28/14 08:05	04/04/14 09:33	40mL/40mL	1mL/1mL	1.00
A4D0003-04	Water	SM 5310 B	03/28/14 10:15	04/04/14 09:33	40mL/40mL	1mL/1mL	1.00

Prep: Total Suspended Solids

	Sample	Default RL Prep

Apex Laboratories



Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

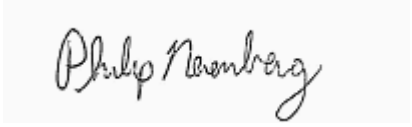
Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

SAMPLE PREPARATION INFORMATION

Conventional Chemistry Parameters

Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 4040129							
A4D0003-01	Water	SM 2540 D	03/28/14 11:30	04/04/14 10:32	1N/A/1N/A	1N/A/1N/A	NA
A4D0003-02	Water	SM 2540 D	03/28/14 07:15	04/04/14 10:32	1N/A/1N/A	1N/A/1N/A	NA
A4D0003-03	Water	SM 2540 D	03/28/14 08:05	04/04/14 10:32	1N/A/1N/A	1N/A/1N/A	NA
A4D0003-04	Water	SM 2540 D	03/28/14 10:15	04/04/14 10:32	1N/A/1N/A	1N/A/1N/A	NA

Apex Laboratories



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Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

Notes and Definitions

Qualifiers:

C-05	Extract has undergone a GPC (Gel-Permeation Chromotography) cleanup per EPA 3640A. Reporting levels may be raised due to dilution necessary for cleanup. Sample Final Volume includes the GPC dilution factor, see the Prep page for details.
C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
J	Estimated Result . Result detected below the lowest point of the calibration curve, but above the specified MDL.
P-10	Result estimated due to the presence of multiple aroclors and/or matrix interference.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-24	RPD for spike and spike duplicate is above established control limit. Recoveries for both spike and spike duplicate are within control limits.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
R-03	Elevated Reporting Limits due to limited sample volume.
S-03	Reextraction and analysis, or analysis of laboratory duplicate, confirms surrogate failure due to sample matrix effect.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.

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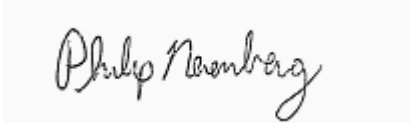

Philip Nerenberg, Lab Director

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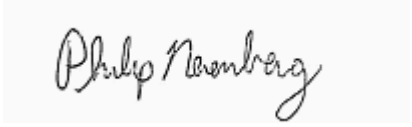
Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09

Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

*** Used to indicate a possible discrepency with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

Apex Laboratories



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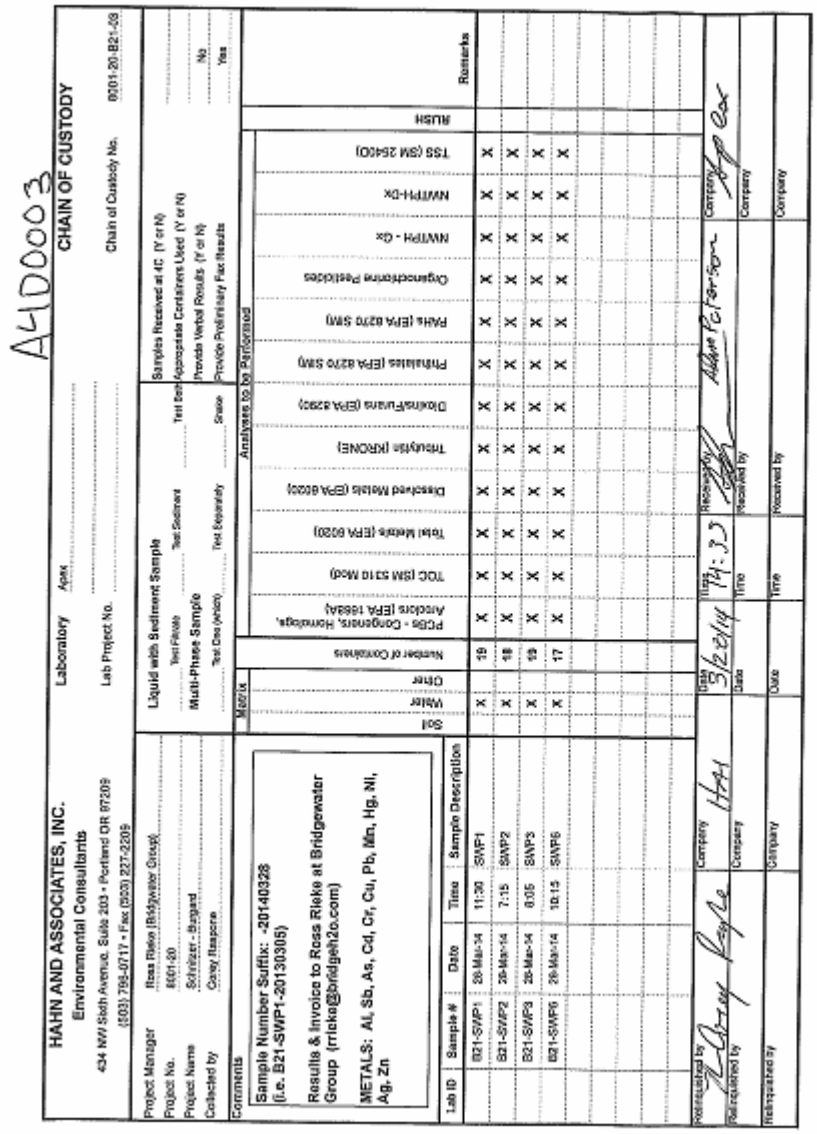
Bridgewater Group	Project: **Schnitzer-Burgard**	
4500 SW Kruse Way; Suite 110	Project Number: 8001-20	**Reported:**
Lake Oswego, OR 97035	Project Manager: Ross Rieke	05/07/14 11:09



A4D0003

HAHN AND ASSOCIATES, INC.
Environmental Consultants
434 NW Sixth Avenue, Suite 203 • Portland OR 97209
(503) 796-0717 • Fax (503) 227-2209

CHAIN OF CUSTODY

Laboratory: Apex
Lab Project No.:
Chain of Custody No.: 8001-20-B21-03

Project Manager: Ross Rieke (Bridgewater Group)
Project No.: 8001-20
Project Name: Schnitzer - Burgard
Collected by: Casey Raspone

Liquid with Sediment Sample — Test Filtrate / Test Sediment / Test Both
Multi-Phase Sample — Test Dissolved / Test Separately / Sheen
Test Dew (which)

Samples Received at 4C (Y or N)
Appropriate Containers Used (Y or N)
Provide Verbal Results (Y or N) — No
Provide Preliminary Fax Results — Yes

Comments

Sample Number Suffix: -20140328 (i.e. B21-SWP1-20130305)

Results & Invoice to Ross Rieke at Bridgewater Group (rrieke@bridgeh2o.com)

METALS: Al, Sb, As, Cd, Cr, Cu, Pb, Mn, Hg, Ni, Ag, Zn

Matrix: Soil / Water / Other

Analyses to be Performed

Lab ID	Sample #	Date	Time	Sample Description	Soil	Water	Other	Number of Containers	PCBs - Congeners, Homologs, Aroclors (EPA 1668A)	TOC (SM 5310 Mod)	Total Metals (EPA 6020)	Dissolved Metals (EPA 6020)	Tributyltin (KRONE)	Dioxins/Furans (EPA 8290)	Phthalates (EPA 8270 SIM)	PAHs (EPA 8270 SIM)	Organochlorine Pesticides	NWTPH - Gx	NWTPH-Dx	TSS (SM 2540D)	RUSH	Remarks
	B21-SWP1	28-Mar-14	11:30	SWP1		X		19	X	X	X	X	X	X	X	X	X	X	X	X		
	B21-SWP2	28-Mar-14	7:15	SWP2		X		18	X	X	X	X	X	X	X	X	X	X	X	X		
	B21-SWP3	28-Mar-14	8:05	SWP3		X		19	X	X	X	X	X	X	X	X	X	X	X	X		
	B21-SWP6	28-Mar-14	10:15	SWP6		X		17	X	X	X	X	X	X	X	X	X	X	X	X		

Relinquished by: Casey Raspone	Company: HAH	Date: 3/28/14	Time: 14:33	Received by: Addie Peterson	Company: Apex		
Relinquished by:	Company:	Date:	Time:	Received by:	Company:		
Relinquished by:	Company:	Date:	Time:	Received by:	Company:		

Apex Laboratories

Philip Nerenberg

Philip Nerenberg, Lab Director

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Your Project #: A4D0003
Your C.O.C. #: na

Attention:Philip Nerenberg

Apex Laboratories
12232 SW Garden Place
Tigard, OR
USA 97223

Report Date: 2014/05/09
Report #: R3024756
Version: 2R

CERTIFICATE OF ANALYSIS – REVISED REPORT

MAXXAM JOB #: B455755
Received: 2014/04/08, 12:00

Sample Matrix: Water
Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Dioxins/Furans in Water (8290A) (1)	4	2014/04/10	2014/04/13	BRL SOP-00406	EPA 8290A mod.
PCB Congeners in Water (1668A)	4	2014/04/17	2014/04/23	BRL SOP-00408	EPA 1668A mod.

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Confirmatory runs for 2,3,7,8-TCDF are performed only if the primary result is greater than the RDL.

Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.
Ivana Vukovic, Env Project Manager
Email: IVukovic@maxxam.ca
Phone# (905) 817-5700

==========

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		VL8864							
Sampling Date		2014/03/28 11:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	1.2 U	1.2	22	4.0	1.00	1.20		3572103
1,2,3,7,8-Penta CDD *	pg/L	1.8 U	1.8	56	4.0	1.00	1.80		3572103
1,2,3,4,7,8-Hexa CDD *	pg/L	1.2 U	1.2	56	4.0	0.100	0.120		3572103
1,2,3,6,7,8-Hexa CDD *	pg/L	1.2 U	1.2	56	4.0	0.100	0.120		3572103
1,2,3,7,8,9-Hexa CDD *	pg/L	1.1 U	1.1	56	4.0	0.100	0.110		3572103
1,2,3,4,6,7,8-Hepta CDD *	pg/L	9.0 J	1.2	56	4.0	0.0100	0.0900		3572103
Octa CDD *	pg/L	58.3 J	2.2	110	8.0	0.000300	0.0175		3572103
Total Tetra CDD *	pg/L	6.9 U (1)	6.9	22	4.0		0		3572103
Total Penta CDD *	pg/L	1.8 U	1.8	56	4.0		0		3572103
Total Hexa CDD *	pg/L	17 U (1)	17	56	4.0		0		3572103
Total Hepta CDD *	pg/L	16.9 J	1.2	56	4.0		0		3572103
2,3,7,8-Tetra CDF **	pg/L	1.2 U	1.2	22	4.0	0.100	0.120		3572103
1,2,3,7,8-Penta CDF **	pg/L	1.2 U	1.2	56	4.0	0.0300	0.0360		3572103
2,3,4,7,8-Penta CDF **	pg/L	1.2 U	1.2	56	4.0	0.300	0.360		3572103
1,2,3,4,7,8-Hexa CDF **	pg/L	1.2 U	1.2	56	4.0	0.100	0.120		3572103
1,2,3,6,7,8-Hexa CDF **	pg/L	1.1 U	1.1	56	4.0	0.100	0.110		3572103
2,3,4,6,7,8-Hexa CDF **	pg/L	1.2 U	1.2	56	4.0	0.100	0.120		3572103
1,2,3,7,8,9-Hexa CDF **	pg/L	1.3 U	1.3	56	4.0	0.100	0.130		3572103
1,2,3,4,6,7,8-Hepta CDF **	pg/L	4.1 U (1)	4.1	56	4.0	0.0100	0.0410		3572103
1,2,3,4,7,8,9-Hepta CDF **	pg/L	1.3 U	1.3	56	4.0	0.0100	0.0130		3572103
Octa CDF **	pg/L	7.2 J	2.2	110	8.0	0.000300	0.00216		3572103
Total Tetra CDF **	pg/L	1.2 U	1.2	22	4.0		0		3572103
Total Penta CDF **	pg/L	3.4 U (1)	3.4	56	4.0		0		3572103
Total Hexa CDF **	pg/L	1.2 U (1)	1.2	56	4.0		0		3572103
Total Hepta CDF **	pg/L	3.4 J	1.2	56	4.0		0		3572103
TOTAL TOXIC EQUIVALENCY	pg/L						4.51		
Surrogate Recovery (%)									
C13-1234678 HeptaCDD *	%	96							3572103

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		VL8864							
Sampling Date		2014/03/28 11:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	98							3572103
C13-123478 HexaCDF **	%	86							3572103
C13-123678 HexaCDD *	%	85							3572103
C13-12378 PentaCDD *	%	74							3572103
C13-12378 PentaCDF **	%	73							3572103
C13-2378 TetraCDD *	%	77							3572103
C13-2378 TetraCDF **	%	77							3572103
C13-OCDD *	%	110							3572103

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

** CDF = Chloro Dibenzo-p-Furan

* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		VL8865							
Sampling Date		2014/03/28 07:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP2-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	1.4 U	1.4	24	4.0	1.00	1.40		3572103
1,2,3,7,8-Penta CDD *	pg/L	1.8 U	1.8	61	4.0	1.00	1.80		3572103
1,2,3,4,7,8-Hexa CDD *	pg/L	1.4 U	1.4	61	4.0	0.100	0.140		3572103
1,2,3,6,7,8-Hexa CDD *	pg/L	1.9 J	1.3	61	4.0	0.100	0.190		3572103
1,2,3,7,8,9-Hexa CDD *	pg/L	1.3 U	1.3	61	4.0	0.100	0.130		3572103
1,2,3,4,6,7,8-Hepta CDD *	pg/L	29.7 J	1.3	61	4.0	0.0100	0.297		3572103
Octa CDD *	pg/L	208	2.5	120	8.0	0.000300	0.0624		3572103
Total Tetra CDD *	pg/L	1.4 U	1.4	24	4.0		0		3572103
Total Penta CDD *	pg/L	2.2 U (1)	2.2	61	4.0		0		3572103
Total Hexa CDD *	pg/L	7.7 J	1.3	61	4.0		0		3572103
Total Hepta CDD *	pg/L	53.7 J	1.3	61	4.0		0		3572103
2,3,7,8-Tetra CDF **	pg/L	1.3 U	1.3	24	4.0	0.100	0.130		3572103
1,2,3,7,8-Penta CDF **	pg/L	1.5 U	1.5	61	4.0	0.0300	0.0450		3572103
2,3,4,7,8-Penta CDF **	pg/L	1.6 U	1.6	61	4.0	0.300	0.480		3572103
1,2,3,4,7,8-Hexa CDF **	pg/L	1.3 U	1.3	61	4.0	0.100	0.130		3572103
1,2,3,6,7,8-Hexa CDF **	pg/L	1.2 U	1.2	61	4.0	0.100	0.120		3572103
2,3,4,6,7,8-Hexa CDF **	pg/L	1.3 U	1.3	61	4.0	0.100	0.130		3572103
1,2,3,7,8,9-Hexa CDF **	pg/L	1.5 U	1.5	61	4.0	0.100	0.150		3572103
1,2,3,4,6,7,8-Hepta CDF **	pg/L	7.1 U (1)	7.1	61	4.0	0.0100	0.0710		3572103
1,2,3,4,7,8,9-Hepta CDF **	pg/L	1.4 U	1.4	61	4.0	0.0100	0.0140		3572103
Octa CDF **	pg/L	16.3 J	2.3	120	8.0	0.000300	0.00489		3572103
Total Tetra CDF **	pg/L	1.3 U	1.3	24	4.0		0		3572103
Total Penta CDF **	pg/L	2.4 U (1)	2.4	61	4.0		0		3572103
Total Hexa CDF **	pg/L	4.9 J	1.3	61	4.0		0		3572103
Total Hepta CDF **	pg/L	8.7 J	1.3	61	4.0		0		3572103
TOTAL TOXIC EQUIVALENCY	pg/L						5.29		
Surrogate Recovery (%)									
C13-1234678 HeptaCDD *	%	88							3572103

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		VL8865							
Sampling Date		2014/03/28 07:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP2-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	96							3572103
C13-123478 HexaCDF **	%	86							3572103
C13-123678 HexaCDD *	%	77							3572103
C13-12378 PentaCDD *	%	75							3572103
C13-12378 PentaCDF **	%	76							3572103
C13-2378 TetraCDD *	%	83							3572103
C13-2378 TetraCDF **	%	81							3572103
C13-OCDD *	%	105							3572103

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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QC Batch = Quality Control Batch

** CDF = Chloro Dibenzo-p-Furan

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DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		VL8866							
Sampling Date		2014/03/28 08:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP3-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	1.1 U	1.1	23	4.0	1.00	1.10		3572103
1,2,3,7,8-Penta CDD *	pg/L	2.7 U (1)	2.7	57	4.0	1.00	2.70		3572103
1,2,3,4,7,8-Hexa CDD *	pg/L	4.9 U (1)	4.9	57	4.0	0.100	0.490		3572103
1,2,3,6,7,8-Hexa CDD *	pg/L	27.1 J	1.1	57	4.0	0.100	2.71		3572103
1,2,3,7,8,9-Hexa CDD *	pg/L	22.9 J	1.1	57	4.0	0.100	2.29		3572103
1,2,3,4,6,7,8-Hepta CDD *	pg/L	723	1.2	57	4.0	0.0100	7.23		3572103
Octa CDD *	pg/L	6560	2.3	110	8.0	0.000300	1.97		3572103
Total Tetra CDD *	pg/L	3.6 U (1)	3.6	23	4.0		0		3572103
Total Penta CDD *	pg/L	11.8 J	2.2	57	4.0		0		3572103
Total Hexa CDD *	pg/L	218	1.2	57	4.0		0		3572103
Total Hepta CDD *	pg/L	1580	1.2	57	4.0		0		3572103
2,3,7,8-Tetra CDF **	pg/L	9.7 J	1.6	23	4.0	0.100	0.970		3572103
1,2,3,7,8-Penta CDF **	pg/L	1.1 U	1.1	57	4.0	0.0300	0.0330		3572103
2,3,4,7,8-Penta CDF **	pg/L	5.0 U (1)	5.0	57	4.0	0.300	1.50		3572103
1,2,3,4,7,8-Hexa CDF **	pg/L	11.1 J	1.1	57	4.0	0.100	1.11		3572103
1,2,3,6,7,8-Hexa CDF **	pg/L	5.3 J	1.1	57	4.0	0.100	0.530		3572103
2,3,4,6,7,8-Hexa CDF **	pg/L	4.9 J	1.2	57	4.0	0.100	0.490		3572103
1,2,3,7,8,9-Hexa CDF **	pg/L	1.3 U	1.3	57	4.0	0.100	0.130		3572103
1,2,3,4,6,7,8-Hepta CDF **	pg/L	91 U (1)	91	57	4.0	0.0100	0.910		3572103
1,2,3,4,7,8,9-Hepta CDF **	pg/L	8.9 J	1.3	57	4.0	0.0100	0.0890		3572103
Octa CDF **	pg/L	339	2.0	110	8.0	0.000300	0.102		3572103
Total Tetra CDF **	pg/L	54.3	1.6	23	4.0		0		3572103
Total Penta CDF **	pg/L	59.2	1.2	57	4.0		0		3572103
Total Hexa CDF **	pg/L	150	1.2	57	4.0		0		3572103
Total Hepta CDF **	pg/L	192	1.1	57	4.0		0		3572103
TOTAL TOXIC EQUIVALENCY	pg/L						24.4		
Surrogate Recovery (%)									
C13-1234678 HeptaCDD *	%	79							3572103

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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* CDD = Chloro Dibenzo-p-Dioxin

** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		VL8866							
Sampling Date		2014/03/28 08:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP3-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	87							3572103
C13-123478 HexaCDF **	%	77							3572103
C13-123678 HexaCDD *	%	73							3572103
C13-12378 PentaCDD *	%	79							3572103
C13-12378 PentaCDF **	%	78							3572103
C13-2378 TetraCDD *	%	76							3572103
C13-2378 TetraCDF **	%	75							3572103
C13-OCDD *	%	93							3572103

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

** CDF = Chloro Dibenzo-p-Furan

* CDD = Chloro Dibenzo-p-Dioxin

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DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		VL8867							
Sampling Date		2014/03/28 10:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP6-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2,3,7,8-Tetra CDD *	pg/L	1.2 U	1.2	23	4.0	1.00	1.20		3572103
1,2,3,7,8-Penta CDD *	pg/L	1.8 U (1)	1.8	57	4.0	1.00	1.80		3572103
1,2,3,4,7,8-Hexa CDD *	pg/L	2.9 J	1.2	57	4.0	0.100	0.290		3572103
1,2,3,6,7,8-Hexa CDD *	pg/L	12.8 J	1.1	57	4.0	0.100	1.28		3572103
1,2,3,7,8,9-Hexa CDD *	pg/L	13.0 J	1.1	57	4.0	0.100	1.30		3572103
1,2,3,4,6,7,8-Hepta CDD *	pg/L	330	1.1	57	4.0	0.0100	3.30		3572103
Octa CDD *	pg/L	3280	2.2	110	8.0	0.000300	0.984		3572103
Total Tetra CDD *	pg/L	1.7 U (1)	1.7	23	4.0		0		3572103
Total Penta CDD *	pg/L	2.9 J	1.1	57	4.0		0		3572103
Total Hexa CDD *	pg/L	104	1.2	57	4.0		0		3572103
Total Hepta CDD *	pg/L	724	1.1	57	4.0		0		3572103
2,3,7,8-Tetra CDF **	pg/L	3.9 U (1)	3.9	23	4.0	0.100	0.390		3572103
1,2,3,7,8-Penta CDF **	pg/L	1.2 U	1.2	57	4.0	0.0300	0.0360		3572103
2,3,4,7,8-Penta CDF **	pg/L	2.3 U (1)	2.3	57	4.0	0.300	0.690		3572103
1,2,3,4,7,8-Hexa CDF **	pg/L	5.6 J	1.2	57	4.0	0.100	0.560		3572103
1,2,3,6,7,8-Hexa CDF **	pg/L	2.9 J	1.1	57	4.0	0.100	0.290		3572103
2,3,4,6,7,8-Hexa CDF **	pg/L	2.0 U (1)	2.0	57	4.0	0.100	0.200		3572103
1,2,3,7,8,9-Hexa CDF **	pg/L	1.4 U	1.4	57	4.0	0.100	0.140		3572103
1,2,3,4,6,7,8-Hepta CDF **	pg/L	44 U (1)	44	57	4.0	0.0100	0.440		3572103
1,2,3,4,7,8,9-Hepta CDF **	pg/L	3.2 U (1)	3.2	57	4.0	0.0100	0.0320		3572103
Octa CDF **	pg/L	129	1.9	110	8.0	0.000300	0.0387		3572103
Total Tetra CDF **	pg/L	11.1 J	1.2	23	4.0		0		3572103
Total Penta CDF **	pg/L	40.9 J	1.2	57	4.0		0		3572103
Total Hexa CDF **	pg/L	71.8	1.2	57	4.0		0		3572103
Total Hepta CDF **	pg/L	78.4	1.1	57	4.0		0		3572103
TOTAL TOXIC EQUIVALENCY	pg/L						13.0		
Surrogate Recovery (%)									
C13-1234678 HeptaCDD *	%	68							3572103

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

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** CDF = Chloro Dibenzo-p-Furan

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

DIOXINS AND FURANS BY HRMS (WATER)

Maxxam ID		VL8867							
Sampling Date		2014/03/28 10:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP6-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-1234678 HeptaCDF **	%	70							3572103
C13-123478 HexaCDF **	%	60							3572103
C13-123678 HexaCDD *	%	65							3572103
C13-12378 PentaCDD *	%	84							3572103
C13-12378 PentaCDF **	%	83							3572103
C13-2378 TetraCDD *	%	79							3572103
C13-2378 TetraCDF **	%	79							3572103
C13-OCDD *	%	77							3572103

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

** CDF = Chloro Dibenzo-p-Furan

* CDD = Chloro Dibenzo-p-Dioxin

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8864							
Sampling Date		2014/03/28 11:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.0047 U (1)	0.0047	0.095	N/A		0		3578544
3-MonoCB-(2)	ng/L	0.0033 U	0.0033	0.095	N/A		0		3578544
4-MonoCB-(3)	ng/L	0.0032 U	0.0032	0.095	N/A		0		3578544
22'-DiCB-(4)	ng/L	0.0355 J	0.0089	0.095	N/A		0		3578544
2,3-DiCB-(5)	ng/L	0.022 U	0.022	0.095	N/A		0		3578544
2,3'-DiCB-(6)	ng/L	0.021 U	0.021	0.095	N/A		0		3578544
2,4-DiCB-(7)	ng/L	0.023 U	0.023	0.095	N/A		0		3578544
2,4'-DiCB-(8)	ng/L	0.049 J	0.022	0.095	N/A		0		3578544
2,5-DiCB-(9)	ng/L	0.021 U	0.021	0.095	N/A		0		3578544
2,6-DiCB-(10)	ng/L	0.0078 U	0.0078	0.095	N/A		0		3578544
3,3'-DiCB-(11)	ng/L	0.057 J	0.023	0.095	N/A		0		3578544
DiCB-(12)+(13)	ng/L	0.023 U	0.023	0.19	N/A		0		3578544
3,5-DiCB-(14)	ng/L	0.022 U	0.022	0.095	N/A		0		3578544
4,4'-DiCB-(15)	ng/L	0.039 U (1)	0.039	0.095	N/A		0		3578544
22'3-TriCB-(16)	ng/L	0.0378 J	0.0037	0.095	N/A		0		3578544
22'4-TriCB-(17)	ng/L	0.028 U (1)	0.028	0.095	N/A		0		3578544
TriCB-(18)+(30)	ng/L	0.0686 J	0.0029	0.19	N/A		0		3578544
22'6-TriCB-(19)	ng/L	0.0120 J	0.0039	0.095	N/A		0		3578544
TriCB-(20) + (28)	ng/L	0.120 J	0.0028	0.19	N/A		0		3578544
TriCB-(21)+(33)	ng/L	0.0737 J	0.0028	0.19	N/A		0		3578544
234'-TriCB-(22)	ng/L	0.0552 J	0.0030	0.095	N/A		0		3578544
235-TriCB-(23)	ng/L	0.0029 U	0.0029	0.095	N/A		0		3578544
236-TriCB-(24)	ng/L	0.0030 U	0.0030	0.095	N/A		0		3578544
23'4-TriCB-(25)	ng/L	0.0077 J	0.0026	0.095	N/A		0		3578544
TriCB-(26)+(29)	ng/L	0.0191 J	0.0028	0.19	N/A		0		3578544
23'6-TriCB-(27)	ng/L	0.0041 U (1)	0.0041	0.095	N/A		0		3578544
24'5-TriCB-(31)	ng/L	0.0985	0.0026	0.095	N/A		0		3578544
24'6-TriCB-(32)	ng/L	0.0230 J	0.0023	0.095	N/A		0		3578544
23'5'-TriCB-(34)	ng/L	0.0029 U	0.0029	0.095	N/A		0		3578544
33'4-TriCB-(35)	ng/L	0.0026 U	0.0026	0.095	N/A		0		3578544

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
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QC Batch = Quality Control Batch

N/A = Not Applicable

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8864							
Sampling Date		2014/03/28 11:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'5-TriCB-(36)	ng/L	0.0026 U	0.0026	0.095	N/A		0		3578544
344'-TriCB-(37)	ng/L	0.0472 J	0.0041	0.095	N/A		0		3578544
345-TriCB-(38)	ng/L	0.0028 U	0.0028	0.095	N/A		0		3578544
34'5-TriCB-(39)	ng/L	0.0029 U	0.0029	0.095	N/A		0		3578544
TetraCB-(40)+(41)+(71)	ng/L	0.0598 J	0.0012	0.29	N/A		0		3578544
22'34'-TetraCB-(42)	ng/L	0.0319 J	0.0015	0.095	N/A		0		3578544
22'35-TetraCB-(43)	ng/L	0.0023 U (1)	0.0023	0.095	N/A		0		3578544
TetraCB-(44)+(47)+(65)	ng/L	0.0991 J	0.0011	0.29	N/A		0		3578544
TetraCB-(45)+(51)	ng/L	0.0163 J	0.0011	0.19	N/A		0		3578544
22'36'-TetraCB-(46)	ng/L	0.0055 J	0.0013	0.095	N/A		0		3578544
22'45-TetraCB-(48)	ng/L	0.0196 J	0.0012	0.095	N/A		0		3578544
TetraCB-(49)+TetraCB-(69)	ng/L	0.0486 J	0.00099	0.19	N/A		0		3578544
TetraCB-(50)+(53)	ng/L	0.0117 J	0.0011	0.19	N/A		0		3578544
22'55'-TetraCB-(52)	ng/L	0.0915 J	0.0010	0.095	N/A		0		3578544
22'66'-TetraCB-(54)	ng/L	0.00081 U	0.00081	0.095	N/A		0		3578544
233'4-TetraCB-(55)	ng/L	0.0021 U	0.0021	0.095	N/A		0		3578544
233'4'-Tetra CB(56)	ng/L	0.0335 J	0.0020	0.095	N/A		0		3578544
233'5-TetraCB-(57)	ng/L	0.0035 U (1)	0.0035	0.095	N/A		0		3578544
233'5'-TetraCB-(58)	ng/L	0.0019 U	0.0019	0.095	N/A		0		3578544
TetraCB-(59)+(62)+(75)	ng/L	0.00897 J	0.00082	0.29	N/A		0		3578544
2344'-TetraCB -(60)	ng/L	0.018 U (1)	0.018	0.095	N/A		0		3578544
TetraCB-(61)+(70)+(74)+(76)	ng/L	0.141 J	0.0019	0.38	N/A		0		3578544
234'5-TetraCB-(63)	ng/L	0.0025 J	0.0018	0.095	N/A		0		3578544
234'6-TetraCB-(64)	ng/L	0.0471 J	0.00089	0.095	N/A		0		3578544
23'44'-TetraCB-(66)	ng/L	0.0581 J	0.0017	0.095	N/A		0		3578544
23'45-TetraCB-(67)	ng/L	0.0024 J	0.0017	0.095	N/A		0		3578544
23'45'-TetraCB-(68)	ng/L	0.0018 U	0.0018	0.095	N/A		0		3578544
23'55'-TetraCB-(72)	ng/L	0.0018 U	0.0018	0.095	N/A		0		3578544
23'5'6-TetraCB-(73)	ng/L	0.00094 U	0.00094	0.095	N/A		0		3578544
33'44'-TetraCB-(77)	ng/L	0.0091 J	0.0022	0.095	N/A	0.000100	0.000000910		3578544

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8864							
Sampling Date		2014/03/28 11:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'45-TetraCB-(78)	ng/L	0.0019 U	0.0019	0.095	N/A		0		3578544
33'45'-TetraCB(79)	ng/L	0.0018 J	0.0016	0.095	N/A		0		3578544
33'55'-TetraCB-(80)	ng/L	0.0017 U	0.0017	0.095	N/A		0		3578544
344'5-TetraCB-(81)	ng/L	0.0023 U	0.0023	0.095	N/A	0.000300	0.000000690		3578544
22'33'4-PentaCB-(82)	ng/L	0.0169 J	0.0030	0.095	N/A		0		3578544
PentaCB-(83)+(99)	ng/L	0.0579 J	0.0027	0.19	N/A		0		3578544
22'33'6-PentaCB-(84)	ng/L	0.0318 J	0.0030	0.095	N/A		0		3578544
PentaCB-(85)+(116)+(117)	ng/L	0.0157 J	0.0021	0.29	N/A		0		3578544
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	0.0921 J	0.0023	0.57	N/A		0		3578544
PentaCB-(88)+(91)	ng/L	0.0152 J	0.0027	0.19	N/A		0		3578544
22'346'-PentaCB-(89)	ng/L	0.0028 U	0.0028	0.095	N/A		0		3578544
PentaCB-(90)+(101)+(113)	ng/L	0.106 J	0.0023	0.29	N/A		0		3578544
22'355'-PentaCB-(92)	ng/L	0.0189 J	0.0027	0.095	N/A		0		3578544
PentaCB-(93)+(98)+(100)+(102)	ng/L	0.0044 J	0.0027	0.38	N/A		0		3578544
22'356'-PentaCB-(94)	ng/L	0.0030 U	0.0030	0.095	N/A		0		3578544
22'35'6-PentaCB-(95)	ng/L	0.0736 J	0.0025	0.095	N/A		0		3578544
22'366'-PentaCB-(96)	ng/L	0.0019 U	0.0019	0.095	N/A		0		3578544
22'45'6-PentaCB-(103)	ng/L	0.0022 U	0.0022	0.095	N/A		0		3578544
22'466'-PentaCB-(104)	ng/L	0.0020 U	0.0020	0.095	N/A		0		3578544
233'44'-PentaCB-(105)	ng/L	0.0548 J	0.0025	0.095	N/A	0.0000300	0.00000164		3578544
233'45-PentaCB-(106)	ng/L	0.0023 U	0.0023	0.095	N/A		0		3578544
233'4'5-PentaCB-(107)	ng/L	0.0076 J	0.0020	0.095	N/A		0		3578544
PentaCB-(108)+(124)	ng/L	0.0051 J	0.0023	0.19	N/A		0		3578544
PentaCB-(110)+(115)	ng/L	0.176 J	0.0023	0.19	N/A		0		3578544
233'55'-PentaCB-(111)	ng/L	0.0020 U	0.0020	0.095	N/A		0		3578544
233'56-PentaCB-(112)	ng/L	0.0020 U	0.0020	0.095	N/A		0		3578544
2344'5-PentaCB-(114)	ng/L	0.0025 U	0.0025	0.095	N/A	0.0000300	0.0000000750		3578544
23'44'5-PentaCB-(118)	ng/L	0.124	0.0025	0.095	N/A	0.0000300	0.00000372		3578544
23'455'-PentaCB-(120)	ng/L	0.0019 U	0.0019	0.095	N/A		0		3578544
23'45'6-PentaCB-(121)	ng/L	0.0020 U	0.0020	0.095	N/A		0		3578544
233'4'5'-PentaCB-(122)	ng/L	0.0025 U	0.0025	0.095	N/A		0		3578544

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8864							
Sampling Date		2014/03/28 11:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'44'5'-PentaCB-(123)	ng/L	0.0027 U	0.0027	0.095	N/A	0.0000300	0.0000000810		3578544
33'44'5-PentaCB-(126)	ng/L	0.0025 U	0.0025	0.095	N/A	0.100	0.000250		3578544
33'455'-PentaCB-(127)	ng/L	0.0022 U	0.0022	0.095	N/A		0		3578544
HexaCB-(128)+(166)	ng/L	0.0277 J	0.0056	0.19	N/A		0		3578544
HexaCB-(129)+(138)+(163)	ng/L	0.180 J	0.0059	0.29	N/A		0		3578544
22'33'45'-HexaCB-(130)	ng/L	0.0112 J	0.0070	0.095	N/A		0		3578544
22'33'46-HexaCB-(131)	ng/L	0.0077 U	0.0077	0.095	N/A		0		3578544
22'33'46'-HexaCB-(132)	ng/L	0.0580 J	0.0071	0.095	N/A		0		3578544
22'33'55'-HexaCB-(133)	ng/L	0.0063 U	0.0063	0.095	N/A		0		3578544
HexaCB-(134)+(143)	ng/L	0.0070 U	0.0070	0.19	N/A		0		3578544
HexaCB-(135)+(151)	ng/L	0.0306 J	0.0024	0.19	N/A		0		3578544
22'33'66'-HexaCB-(136)	ng/L	0.0128 J	0.0017	0.095	N/A		0		3578544
22'344'5-HexaCB-(137)	ng/L	0.0071 U	0.0071	0.095	N/A		0		3578544
HexaCB-(139)+(140)	ng/L	0.0058 U	0.0058	0.19	N/A		0		3578544
22'3455'-HexaCB-(141)	ng/L	0.0253 J	0.0060	0.095	N/A		0		3578544
22'3456-HexaCB-(142)	ng/L	0.0067 U	0.0067	0.095	N/A		0		3578544
22'345'6-HexaCB-(144)	ng/L	0.0042 U (1)	0.0042	0.095	N/A		0		3578544
22'3466'-HexaCB-(145)	ng/L	0.0019 U	0.0019	0.095	N/A		0		3578544
22'34'55'-HexaCB-(146)	ng/L	0.0178 J	0.0054	0.095	N/A		0		3578544
HexaCB-(147)+(149)	ng/L	0.0832 J	0.0059	0.19	N/A		0		3578544
22'34'56'-HexaCB-(148)	ng/L	0.0023 U	0.0023	0.095	N/A		0		3578544
22'34'66'-HexaCB-(150)	ng/L	0.0018 U	0.0018	0.095	N/A		0		3578544
22'3566'-HexaCB-(152)	ng/L	0.0016 U	0.0016	0.095	N/A		0		3578544
HexaCB-(153)+(168)	ng/L	0.105 J	0.0049	0.19	N/A		0		3578544
22'44'56'-HexaCB-(154)	ng/L	0.0020 U	0.0020	0.095	N/A		0		3578544
22'44'66'-HexaCB-(155)	ng/L	0.0020 U	0.0020	0.095	N/A		0		3578544
HexaCB-(156)+(157)	ng/L	0.0194 J	0.0041	0.19	N/A	0.0000300	0.000000582		3578544
233'44'6-HexaCB-(158)	ng/L	0.0159 J	0.0042	0.095	N/A		0		3578544
233'455'-HexaCB-(159)	ng/L	0.0040 U	0.0040	0.095	N/A		0		3578544
233'456-HexaCB-(160)	ng/L	0.0055 U	0.0055	0.095	N/A		0		3578544

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8864							
Sampling Date		2014/03/28 11:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'45'6-HexaCB-(161)	ng/L	0.0046 U	0.0046	0.095	N/A		0		3578544
233'4'55'-HexaCB-(162)	ng/L	0.0041 U	0.0041	0.095	N/A		0		3578544
233'4'5'6-HexaCB-(164)	ng/L	0.0124 J	0.0044	0.095	N/A		0		3578544
233'55'6-HexaCB-(165)	ng/L	0.0052 U	0.0052	0.095	N/A		0		3578544
23'44'55'-HexaCB-(167)	ng/L	0.0070 J	0.0044	0.095	N/A	0.0000300	0.000000210		3578544
33'44'55'-HexaCB-(169)	ng/L	0.0045 U	0.0045	0.095	N/A	0.0300	0.000135		3578544
22'33'44'5-HeptaCB-(170)	ng/L	0.021 U (1)	0.021	0.095	N/A		0		3578544
HeptaCB-(171)+(173)	ng/L	0.0079 J	0.0031	0.19	N/A		0		3578544
22'33'455'-HeptaCB-(172)	ng/L	0.0042 U (1)	0.0042	0.095	N/A		0		3578544
22'33'456'-HeptaCB-(174)	ng/L	0.0198 J	0.0027	0.095	N/A		0		3578544
22'33'45'6-HeptaCB-(175)	ng/L	0.0020 U	0.0020	0.095	N/A		0		3578544
22'33'466'-HeptaCB-(176)	ng/L	0.0026 J	0.0015	0.095	N/A		0		3578544
22'33'45'6'-HeptaCB-(177)	ng/L	0.0126 J	0.0030	0.095	N/A		0		3578544
22'33'55'6-HeptaCB-(178)	ng/L	0.0046 U (1)	0.0046	0.095	N/A		0		3578544
22'33'566'-HeptaCB-(179)	ng/L	0.0065 J	0.0014	0.095	N/A		0		3578544
HeptaCB-(180)+(193)	ng/L	0.0467 J	0.0022	0.19	N/A		0		3578544
22'344'56-HeptaCB-(181)	ng/L	0.0030 U	0.0030	0.095	N/A		0		3578544
22'344'56'-HeptaCB-(182)	ng/L	0.0020 U	0.0020	0.095	N/A		0		3578544
22'344'5'6-HeptaCB-(183)	ng/L	0.0118 J	0.0023	0.095	N/A		0		3578544
22'344'66'-HeptaCB-(184)	ng/L	0.0015 U	0.0015	0.095	N/A		0		3578544
22'3455'6-HeptaCB-(185)	ng/L	0.0036 U	0.0036	0.095	N/A		0		3578544
22'34566'-HeptaCB-(186)	ng/L	0.0016 U	0.0016	0.095	N/A		0		3578544
22'34'55'6-HeptaCB-(187)	ng/L	0.024 U (1)	0.024	0.095	N/A		0		3578544
22'34'566'-HeptaCB-(188)	ng/L	0.0020 U	0.0020	0.095	N/A		0		3578544
233'44'55'-HeptaCB-(189)	ng/L	0.0024 U	0.0024	0.095	N/A	0.0000300	0.0000000720		3578544
233'44'56-HeptaCB-(190)	ng/L	0.0040 J	0.0023	0.095	N/A		0		3578544
233'44'5'6-HeptaCB-(191)	ng/L	0.0022 U	0.0022	0.095	N/A		0		3578544
233'455'6-HeptaCB-(192)	ng/L	0.0026 U	0.0026	0.095	N/A		0		3578544
22'33'44'55'-OctaCB-(194)	ng/L	0.014 U (1)	0.014	0.095	N/A		0		3578544
22'33'44'56-OctaCB-(195)	ng/L	0.0052 U	0.0052	0.095	N/A		0		3578544

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8864							
Sampling Date		2014/03/28 11:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'33'44'56'-OctaCB-(196)	ng/L	0.0072 J	0.0030	0.095	N/A		0		3578544
22'33'44'66'OctaCB-(197)	ng/L	0.0022 U	0.0022	0.095	N/A		0		3578544
OctaCB-(198)+(199)	ng/L	0.019 U (1)	0.019	0.19	N/A		0		3578544
22'33'4566'-OctaCB-(200)	ng/L	0.0020 U	0.0020	0.095	N/A		0		3578544
22'33'45'66'-OctaCB-(201)	ng/L	0.0020 U	0.0020	0.095	N/A		0		3578544
22'33'55'66'-OctaCB-(202)	ng/L	0.0037 U (1)	0.0037	0.095	N/A		0		3578544
22'344'55'6-OctaCB-(203)	ng/L	0.012 U (1)	0.012	0.095	N/A		0		3578544
22'344'566'-OctaCB-(204)	ng/L	0.0021 U	0.0021	0.095	N/A		0		3578544
233'44'55'6-OctaCB-(205)	ng/L	0.0038 U	0.0038	0.095	N/A		0		3578544
22'33'44'55'6-NonaCB-(206)	ng/L	0.0115 J	0.0054	0.095	N/A		0		3578544
22'33'44'566'-NonaCB-(207)	ng/L	0.0041 U	0.0041	0.095	N/A		0		3578544
22'33'455'66'-NonaCB-(208)	ng/L	0.0050 U	0.0050	0.095	N/A		0		3578544
DecaCB-(209)	ng/L	0.0054 U	0.0054	0.095	N/A		0		3578544
Monochlorobiphenyl	ng/L	0.0033 U	0.0033	N/A	N/A		0		3578544
Dichlorobiphenyl	ng/L	0.141	0.030	N/A	N/A		0		3578544
Trichlorobiphenyl	ng/L	0.562	0.0041	N/A	N/A		0		3578544
Tetrachlorobiphenyl	ng/L	0.689	0.0023	N/A	N/A		0		3578544
Pentachlorobiphenyl	ng/L	0.800	0.0030	N/A	N/A		0		3578544
Hexachlorobiphenyl	ng/L	0.606	0.0077	N/A	N/A		0		3578544
Heptachlorobiphenyl	ng/L	0.112	0.0036	N/A	N/A		0		3578544
Octachlorobiphenyl	ng/L	0.0072	0.0052	N/A	N/A		0		3578544
Nonachlorobiphenyl	ng/L	0.0115	0.0054	N/A	N/A		0		3578544
Decachlorobiphenyl	ng/L	0.0054 U	0.0054	N/A	N/A		0		3578544
Total PCB	ng/L	2.93		N/A	N/A	N/A	0		3578544
TOTAL TOXIC EQUIVALENCY	ng/L						0.000393		
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	72							3578544
C13-22'33'44'55'6-NonaCB-(206)	%	104							3578544
C13-22'33'44'5-HeptaCB-(170)	%	92							3578544
C13-22'33'455'66'-NonaCB-(208)	%	92							3578544

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Report Date: 2014/05/09

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8864							
Sampling Date		2014/03/28 11:30							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP1-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-22'33'55'66'-OctaCB-(202)	%	85							3578544
C13-22'33'55'6-HeptaCB-(178)	%	97							3578544
C13-22'344'55'-HeptaCB-(180)	%	90							3578544
C13-22'34'566'-HeptaCB-(188)	%	93							3578544
C13-22'44'66'-HexaCB-(155)	%	87							3578544
C13-22'466'-PentaCB-(104)	%	75							3578544
C13-22'66'-TetraCB-(54)	%	57							3578544
C13-22'6-TriCB-(19)	%	45							3578544
C13-22'-DiCB-(4)	%	34							3578544
C13-233'44'55'6-OctaCB-(205)	%	101							3578544
C13-233'44'55'-HeptaCB-(189)	%	104							3578544
C13-233'44'-PentaCB-(105)	%	109							3578544
C13-233'55'-PentaCB-(111)	%	93							3578544
C13-23'44'55'-HexaCB-(167)	%	112							3578544
C13-2344'5-PentaCB-(114)	%	107							3578544
C13-23'44'5-PentaCB-(118)	%	106							3578544
C13-2'344'5-PentaCB-(123)	%	107							3578544
C13-2-MonoCB-(1)	%	22							3578544
C13-33'44'55'-HexaCB-(169)	%	44							3578544
C13-33'44'5-PentaCB-(126)	%	105							3578544
C13-33'44'-TetraCB-(77)	%	103							3578544
C13-344'5-TetraCB-(81)	%	101							3578544
C13-344'-TriCB-(37)	%	72							3578544
C13-44'-DiCB-(15)	%	64							3578544
C13-4-MonoCB-(3)	%	30							3578544
C13-DecaCB-(209)	%	104							3578544
C13-HexaCB-(156)+(157)	%	114							3578544

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8865							
Sampling Date		2014/03/28 07:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP2-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.015 U (1)	0.015	0.095	N/A		0		3578544
3-MonoCB-(2)	ng/L	0.0034 U	0.0034	0.095	N/A		0		3578544
4-MonoCB-(3)	ng/L	0.0071 U (1)	0.0071	0.095	N/A		0		3578544
22'-DiCB-(4)	ng/L	0.171	0.0076	0.095	N/A		0		3578544
2,3-DiCB-(5)	ng/L	0.015 U	0.015	0.095	N/A		0		3578544
2,3'-DiCB-(6)	ng/L	0.035 U (1)	0.035	0.095	N/A		0		3578544
2,4-DiCB-(7)	ng/L	0.016 U	0.016	0.095	N/A		0		3578544
2,4'-DiCB-(8)	ng/L	0.210	0.014	0.095	N/A		0		3578544
2,5-DiCB-(9)	ng/L	0.014 U	0.014	0.095	N/A		0		3578544
2,6-DiCB-(10)	ng/L	0.0066 U	0.0066	0.095	N/A		0		3578544
3,3'-DiCB-(11)	ng/L	0.429	0.015	0.095	N/A		0		3578544
DiCB-(12)+(13)	ng/L	0.028 J	0.016	0.19	N/A		0		3578544
3,5-DiCB-(14)	ng/L	0.015 U	0.015	0.095	N/A		0		3578544
4,4'-DiCB-(15)	ng/L	0.140	0.020	0.095	N/A		0		3578544
22'3-TriCB-(16)	ng/L	0.145	0.0059	0.095	N/A		0		3578544
22'4-TriCB-(17)	ng/L	0.129	0.0056	0.095	N/A		0		3578544
TriCB-(18)+(30)	ng/L	0.269	0.0047	0.19	N/A		0		3578544
22'6-TriCB-(19)	ng/L	0.0489 J	0.0063	0.095	N/A		0		3578544
TriCB-(20) + (28)	ng/L	0.455	0.0018	0.19	N/A		0		3578544
TriCB-(21)+(33)	ng/L	0.302	0.0018	0.19	N/A		0		3578544
234'-TriCB-(22)	ng/L	0.201	0.0020	0.095	N/A		0		3578544
235-TriCB-(23)	ng/L	0.0019 U	0.0019	0.095	N/A		0		3578544
236-TriCB-(24)	ng/L	0.0048 U	0.0048	0.095	N/A		0		3578544
23'4-TriCB-(25)	ng/L	0.0324 J	0.0017	0.095	N/A		0		3578544
TriCB-(26)+(29)	ng/L	0.0734 J	0.0018	0.19	N/A		0		3578544
23'6-TriCB-(27)	ng/L	0.020 U (1)	0.020	0.095	N/A		0		3578544
24'5-TriCB-(31)	ng/L	0.381	0.0017	0.095	N/A		0		3578544
24'6-TriCB-(32)	ng/L	0.0873 J	0.0037	0.095	N/A		0		3578544
23'5'-TriCB-(34)	ng/L	0.0019 U	0.0019	0.095	N/A		0		3578544
33'4-TriCB-(35)	ng/L	0.0117 J	0.0017	0.095	N/A		0		3578544

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8865							
Sampling Date		2014/03/28 07:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP2-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'5-TriCB-(36)	ng/L	0.0017 U	0.0017	0.095	N/A		0		3578544
344'-TriCB-(37)	ng/L	0.151	0.0027	0.095	N/A		0		3578544
345-TriCB-(38)	ng/L	0.0018 U	0.0018	0.095	N/A		0		3578544
34'5-TriCB-(39)	ng/L	0.0019 U	0.0019	0.095	N/A		0		3578544
TetraCB-(40)+(41)+(71)	ng/L	0.186 J	0.0014	0.29	N/A		0		3578544
22'34'-TetraCB-(42)	ng/L	0.0995	0.0017	0.095	N/A		0		3578544
22'35-TetraCB-(43)	ng/L	0.0096 J	0.0016	0.095	N/A		0		3578544
TetraCB-(44)+(47)+(65)	ng/L	0.280 J	0.0013	0.29	N/A		0		3578544
TetraCB-(45)+(51)	ng/L	0.0568 J	0.0014	0.19	N/A		0		3578544
22'36'-TetraCB-(46)	ng/L	0.0205 J	0.0016	0.095	N/A		0		3578544
22'45-TetraCB-(48)	ng/L	0.0697 J	0.0014	0.095	N/A		0		3578544
TetraCB-(49)+TetraCB-(69)	ng/L	0.141 J	0.0012	0.19	N/A		0		3578544
TetraCB-(50)+(53)	ng/L	0.0395 J	0.0013	0.19	N/A		0		3578544
22'55'-TetraCB-(52)	ng/L	0.243	0.0012	0.095	N/A		0		3578544
22'66'-TetraCB-(54)	ng/L	0.0042 U	0.0042	0.095	N/A		0		3578544
233'4-TetraCB-(55)	ng/L	0.0038 U	0.0038	0.095	N/A		0		3578544
233'4'-Tetra CB(56)	ng/L	0.0843 J	0.0036	0.095	N/A		0		3578544
233'5-TetraCB-(57)	ng/L	0.0070 J	0.0033	0.095	N/A		0		3578544
233'5'-TetraCB-(58)	ng/L	0.0034 U	0.0034	0.095	N/A		0		3578544
TetraCB-(59)+(62)+(75)	ng/L	0.0265 J	0.00097	0.29	N/A		0		3578544
2344'-TetraCB -(60)	ng/L	0.0519 J	0.0037	0.095	N/A		0		3578544
TetraCB-(61)+(70)+(74)+(76)	ng/L	0.331 J	0.0034	0.38	N/A		0		3578544
234'5-TetraCB-(63)	ng/L	0.0052 U (1)	0.0052	0.095	N/A		0		3578544
234'6-TetraCB-(64)	ng/L	0.134	0.0011	0.095	N/A		0		3578544
23'44'-TetraCB-(66)	ng/L	0.156	0.0030	0.095	N/A		0		3578544
23'45-TetraCB-(67)	ng/L	0.0066 J	0.0030	0.095	N/A		0		3578544
23'45'-TetraCB-(68)	ng/L	0.0034 U (1)	0.0034	0.095	N/A		0		3578544
23'55'-TetraCB-(72)	ng/L	0.0032 U	0.0032	0.095	N/A		0		3578544
23'5'6-TetraCB-(73)	ng/L	0.0011 U	0.0011	0.095	N/A		0		3578544
33'44'-TetraCB-(77)	ng/L	0.0234 J	0.0039	0.095	N/A	0.000100	0.00000234		3578544

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8865							
Sampling Date		2014/03/28 07:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP2-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'45-TetraCB-(78)	ng/L	0.0034 U	0.0034	0.095	N/A		0		3578544
33'45'-TetraCB(79)	ng/L	0.0029 U	0.0029	0.095	N/A		0		3578544
33'55'-TetraCB-(80)	ng/L	0.0030 U	0.0030	0.095	N/A		0		3578544
344'5-TetraCB-(81)	ng/L	0.0040 U	0.0040	0.095	N/A	0.000300	0.00000120		3578544
22'33'4-PentaCB-(82)	ng/L	0.0298 J	0.0035	0.095	N/A		0		3578544
PentaCB-(83)+(99)	ng/L	0.0913 J	0.0031	0.19	N/A		0		3578544
22'33'6-PentaCB-(84)	ng/L	0.0517 J	0.0034	0.095	N/A		0		3578544
PentaCB-(85)+(116)+(117)	ng/L	0.0261 J	0.0024	0.29	N/A		0		3578544
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	0.143 J	0.0026	0.57	N/A		0		3578544
PentaCB-(88)+(91)	ng/L	0.0254 J	0.0031	0.19	N/A		0		3578544
22'346'-PentaCB-(89)	ng/L	0.0032 U	0.0032	0.095	N/A		0		3578544
PentaCB-(90)+(101)+(113)	ng/L	0.164 J	0.0026	0.29	N/A		0		3578544
22'355'-PentaCB-(92)	ng/L	0.0303 J	0.0030	0.095	N/A		0		3578544
PentaCB-(93)+(98)+(100)+(102)	ng/L	0.0101 J	0.0031	0.38	N/A		0		3578544
22'356'-PentaCB-(94)	ng/L	0.0034 U	0.0034	0.095	N/A		0		3578544
22'35'6-PentaCB-(95)	ng/L	0.135	0.0028	0.095	N/A		0		3578544
22'366'-PentaCB-(96)	ng/L	0.0016 U	0.0016	0.095	N/A		0		3578544
22'45'6-PentaCB-(103)	ng/L	0.0026 U	0.0026	0.095	N/A		0		3578544
22'466'-PentaCB-(104)	ng/L	0.0018 U	0.0018	0.095	N/A		0		3578544
233'44'-PentaCB-(105)	ng/L	0.0964	0.0036	0.095	N/A	0.0000300	0.00000289		3578544
233'45-PentaCB-(106)	ng/L	0.0032 U	0.0032	0.095	N/A		0		3578544
233'4'5-PentaCB-(107)	ng/L	0.0110 J	0.0028	0.095	N/A		0		3578544
PentaCB-(108)+(124)	ng/L	0.0087 J	0.0032	0.19	N/A		0		3578544
PentaCB-(110)+(115)	ng/L	0.287	0.0026	0.19	N/A		0		3578544
233'55'-PentaCB-(111)	ng/L	0.0023 U	0.0023	0.095	N/A		0		3578544
233'56-PentaCB-(112)	ng/L	0.0022 U	0.0022	0.095	N/A		0		3578544
2344'5-PentaCB-(114)	ng/L	0.0034 U	0.0034	0.095	N/A	0.0000300	0.000000102		3578544
23'44'5-PentaCB-(118)	ng/L	0.203	0.0035	0.095	N/A	0.0000300	0.00000609		3578544
23'455'-PentaCB-(120)	ng/L	0.0021 U	0.0021	0.095	N/A		0		3578544
23'45'6-PentaCB-(121)	ng/L	0.0023 U	0.0023	0.095	N/A		0		3578544
233'4'5'-PentaCB-(122)	ng/L	0.0035 U	0.0035	0.095	N/A		0		3578544

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8865							
Sampling Date		2014/03/28 07:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP2-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'44'5'-PentaCB-(123)	ng/L	0.0038 U	0.0038	0.095	N/A	0.0000300	0.000000114		3578544
33'44'5-PentaCB-(126)	ng/L	0.0035 U	0.0035	0.095	N/A	0.100	0.000350		3578544
33'455'-PentaCB-(127)	ng/L	0.0031 U	0.0031	0.095	N/A		0		3578544
HexaCB-(128)+(166)	ng/L	0.0542 J	0.0073	0.19	N/A		0		3578544
HexaCB-(129)+(138)+(163)	ng/L	0.329	0.0077	0.29	N/A		0		3578544
22'33'45'-HexaCB-(130)	ng/L	0.0177 J	0.0091	0.095	N/A		0		3578544
22'33'46-HexaCB-(131)	ng/L	0.010 U	0.010	0.095	N/A		0		3578544
22'33'46'-HexaCB-(132)	ng/L	0.106	0.0092	0.095	N/A		0		3578544
22'33'55'-HexaCB-(133)	ng/L	0.0082 U	0.0082	0.095	N/A		0		3578544
HexaCB-(134)+(143)	ng/L	0.0091 U	0.0091	0.19	N/A		0		3578544
HexaCB-(135)+(151)	ng/L	0.0644 J	0.0018	0.19	N/A		0		3578544
22'33'66'-HexaCB-(136)	ng/L	0.0229 J	0.0012	0.095	N/A		0		3578544
22'344'5-HexaCB-(137)	ng/L	0.0148 J	0.0092	0.095	N/A		0		3578544
HexaCB-(139)+(140)	ng/L	0.0076 U	0.0076	0.19	N/A		0		3578544
22'3455'-HexaCB-(141)	ng/L	0.0504 J	0.0077	0.095	N/A		0		3578544
22'3456-HexaCB-(142)	ng/L	0.0087 U	0.0087	0.095	N/A		0		3578544
22'345'6-HexaCB-(144)	ng/L	0.0095 J	0.0017	0.095	N/A		0		3578544
22'3466'-HexaCB-(145)	ng/L	0.0013 U	0.0013	0.095	N/A		0		3578544
22'34'55'-HexaCB-(146)	ng/L	0.0330 J	0.0070	0.095	N/A		0		3578544
HexaCB-(147)+(149)	ng/L	0.169 J	0.0076	0.19	N/A		0		3578544
22'34'56'-HexaCB-(148)	ng/L	0.0017 U	0.0017	0.095	N/A		0		3578544
22'34'66'-HexaCB-(150)	ng/L	0.0013 U	0.0013	0.095	N/A		0		3578544
22'3566'-HexaCB-(152)	ng/L	0.0012 U	0.0012	0.095	N/A		0		3578544
HexaCB-(153)+(168)	ng/L	0.198	0.0064	0.19	N/A		0		3578544
22'44'56'-HexaCB-(154)	ng/L	0.0015 U	0.0015	0.095	N/A		0		3578544
22'44'66'-HexaCB-(155)	ng/L	0.0015 U	0.0015	0.095	N/A		0		3578544
HexaCB-(156)+(157)	ng/L	0.0364 J	0.0054	0.19	N/A	0.0000300	0.00000109		3578544
233'44'6-HexaCB-(158)	ng/L	0.0327 J	0.0055	0.095	N/A		0		3578544
233'455'-HexaCB-(159)	ng/L	0.0053 U	0.0053	0.095	N/A		0		3578544
233'456-HexaCB-(160)	ng/L	0.0071 U	0.0071	0.095	N/A		0		3578544
233'45'6-HexaCB-(161)	ng/L	0.0060 U	0.0060	0.095	N/A		0		3578544

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Maxxam ID		VL8865							
Sampling Date		2014/03/28 07:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP2-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'4'55'-HexaCB-(162)	ng/L	0.0054 U	0.0054	0.095	N/A		0		3578544
233'4'5'6-HexaCB-(164)	ng/L	0.0201 J	0.0056	0.095	N/A		0		3578544
233'55'6-HexaCB-(165)	ng/L	0.0067 U	0.0067	0.095	N/A		0		3578544
23'44'55'-HexaCB-(167)	ng/L	0.0122 J	0.0058	0.095	N/A	0.0000300	0.000000366		3578544
33'44'55'-HexaCB-(169)	ng/L	0.0060 U	0.0060	0.095	N/A	0.0300	0.000180		3578544
22'33'44'5-HeptaCB-(170)	ng/L	0.0463 J	0.0024	0.095	N/A		0		3578544
HeptaCB-(171)+(173)	ng/L	0.0131 J	0.0028	0.19	N/A		0		3578544
22'33'455'-HeptaCB-(172)	ng/L	0.0091 J	0.0029	0.095	N/A		0		3578544
22'33'456'-HeptaCB-(174)	ng/L	0.0439 J	0.0025	0.095	N/A		0		3578544
22'33'45'6-HeptaCB-(175)	ng/L	0.0032 U	0.0032	0.095	N/A		0		3578544
22'33'466'-HeptaCB-(176)	ng/L	0.0048 J	0.0024	0.095	N/A		0		3578544
22'33'45'6'-HeptaCB-(177)	ng/L	0.0250 J	0.0028	0.095	N/A		0		3578544
22'33'55'6-HeptaCB-(178)	ng/L	0.0072 J	0.0034	0.095	N/A		0		3578544
22'33'566'-HeptaCB-(179)	ng/L	0.0145 J	0.0023	0.095	N/A		0		3578544
HeptaCB-(180)+(193)	ng/L	0.104 J	0.0021	0.19	N/A		0		3578544
22'344'56-HeptaCB-(181)	ng/L	0.0028 U	0.0028	0.095	N/A		0		3578544
22'344'56'-HeptaCB-(182)	ng/L	0.0032 U	0.0032	0.095	N/A		0		3578544
22'344'5'6-HeptaCB-(183)	ng/L	0.0254 J	0.0022	0.095	N/A		0		3578544
22'344'66'-HeptaCB-(184)	ng/L	0.0024 U	0.0024	0.095	N/A		0		3578544
22'3455'6-HeptaCB-(185)	ng/L	0.0034 U	0.0034	0.095	N/A		0		3578544
22'34566'-HeptaCB-(186)	ng/L	0.0026 U	0.0026	0.095	N/A		0		3578544
22'34'55'6-HeptaCB-(187)	ng/L	0.0560 J	0.0032	0.095	N/A		0		3578544
22'34'566'-HeptaCB-(188)	ng/L	0.0032 U	0.0032	0.095	N/A		0		3578544
233'44'55'-HeptaCB-(189)	ng/L	0.0066 U	0.0066	0.095	N/A	0.0000300	0.000000198		3578544
233'44'56-HeptaCB-(190)	ng/L	0.0087 J	0.0022	0.095	N/A		0		3578544
233'44'5'6-HeptaCB-(191)	ng/L	0.0021 U	0.0021	0.095	N/A		0		3578544
233'455'6-HeptaCB-(192)	ng/L	0.0024 U	0.0024	0.095	N/A		0		3578544
22'33'44'55'-OctaCB-(194)	ng/L	0.0256 J	0.0061	0.095	N/A		0		3578544
22'33'44'56-OctaCB-(195)	ng/L	0.0074 U (1)	0.0074	0.095	N/A		0		3578544
22'33'44'56'-OctaCB-(196)	ng/L	0.0145 J	0.0065	0.095	N/A		0		3578544

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(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8865							
Sampling Date		2014/03/28 07:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP2-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'33'44'66'OctaCB-(197)	ng/L	0.0047 U	0.0047	0.095	N/A		0		3578544
OctaCB-(198)+(199)	ng/L	0.0357 J	0.0066	0.19	N/A		0		3578544
22'33'4566'-OctaCB-(200)	ng/L	0.0044 U	0.0044	0.095	N/A		0		3578544
22'33'45'66'-OctaCB-(201)	ng/L	0.0045 U	0.0045	0.095	N/A		0		3578544
22'33'55'66'-OctaCB-(202)	ng/L	0.0072 J	0.0056	0.095	N/A		0		3578544
22'344'55'6-OctaCB-(203)	ng/L	0.0246 J	0.0064	0.095	N/A		0		3578544
22'344'566'-OctaCB-(204)	ng/L	0.0045 U	0.0045	0.095	N/A		0		3578544
233'44'55'6-OctaCB-(205)	ng/L	0.0047 U	0.0047	0.095	N/A		0		3578544
22'33'44'55'6-NonaCB-(206)	ng/L	0.0236 J	0.0075	0.095	N/A		0		3578544
22'33'44'566'-NonaCB-(207)	ng/L	0.0057 U	0.0057	0.095	N/A		0		3578544
22'33'455'66'-NonaCB-(208)	ng/L	0.0070 U	0.0070	0.095	N/A		0		3578544
DecaCB-(209)	ng/L	0.0081 J	0.0051	0.095	N/A		0		3578544
Monochlorobiphenyl	ng/L	0.0034 U	0.0034	N/A	N/A		0		3578544
Dichlorobiphenyl	ng/L	0.978	0.020	N/A	N/A		0		3578544
Trichlorobiphenyl	ng/L	2.29	0.0063	N/A	N/A		0		3578544
Tetrachlorobiphenyl	ng/L	1.96	0.0042	N/A	N/A		0		3578544
Pentachlorobiphenyl	ng/L	1.31	0.0038	N/A	N/A		0		3578544
Hexachlorobiphenyl	ng/L	1.17	0.010	N/A	N/A		0		3578544
Heptachlorobiphenyl	ng/L	0.358	0.0066	N/A	N/A		0		3578544
Octachlorobiphenyl	ng/L	0.108	0.0066	N/A	N/A		0		3578544
Nonachlorobiphenyl	ng/L	0.0236	0.0076	N/A	N/A		0		3578544
Decachlorobiphenyl	ng/L	0.0081	0.0051	N/A	N/A		0		3578544
Total PCB	ng/L	8.21		N/A	N/A	N/A	0		3578544
TOTAL TOXIC EQUIVALENCY	ng/L						0.000544		
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	82							3578544
C13-22'33'44'55'6-NonaCB-(206)	%	110							3578544
C13-22'33'44'5-HeptaCB-(170)	%	102							3578544
C13-22'33'455'66'-NonaCB-(208)	%	99							3578544
C13-22'33'55'66'-OctaCB-(202)	%	97							3578544
C13-22'33'55'6-HeptaCB-(178)	%	97							3578544

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8865							
Sampling Date		2014/03/28 07:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP2-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-22'344'55'-HeptaCB-(180)	%	99							3578544
C13-22'34'566'-HeptaCB-(188)	%	97							3578544
C13-22'44'66'-HexaCB-(155)	%	94							3578544
C13-22'466'-PentaCB-(104)	%	91							3578544
C13-22'66'-TetraCB-(54)	%	74							3578544
C13-22'6-TriCB-(19)	%	53							3578544
C13-22'-DiCB-(4)	%	41							3578544
C13-233'44'55'6-OctaCB-(205)	%	107							3578544
C13-233'44'55'-HeptaCB-(189)	%	109							3578544
C13-233'44'-PentaCB-(105)	%	110							3578544
C13-233'55'-PentaCB-(111)	%	99							3578544
C13-23'44'55'-HexaCB-(167)	%	110							3578544
C13-2344'5-PentaCB-(114)	%	108							3578544
C13-23'44'5-PentaCB-(118)	%	110							3578544
C13-2'344'5-PentaCB-(123)	%	107							3578544
C13-2-MonoCB-(1)	%	26							3578544
C13-33'44'55'-HexaCB-(169)	%	24 (1)							3578544
C13-33'44'5-PentaCB-(126)	%	89							3578544
C13-33'44'-TetraCB-(77)	%	104							3578544
C13-344'5-TetraCB-(81)	%	104							3578544
C13-344'-TriCB-(37)	%	79							3578544
C13-44'-DiCB-(15)	%	77							3578544
C13-4-MonoCB-(3)	%	38							3578544
C13-DecaCB-(209)	%	113							3578544
C13-HexaCB-(156)+(157)	%	110							3578544

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(1) Internal recovery is below method limits. There is no native found in the sample.

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8866							
Sampling Date		2014/03/28 08:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP3-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.0530 J	0.0015	0.095	N/A		0		3578544
3-MonoCB-(2)	ng/L	0.0085 J	0.0015	0.095	N/A		0		3578544
4-MonoCB-(3)	ng/L	0.027 U (1)	0.027	0.095	N/A		0		3578544
22'-DiCB-(4)	ng/L	0.368	0.0077	0.095	N/A		0		3578544
2,3-DiCB-(5)	ng/L	0.012 U (1)	0.012	0.095	N/A		0		3578544
2,3'-DiCB-(6)	ng/L	0.167	0.0098	0.095	N/A		0		3578544
2,4-DiCB-(7)	ng/L	0.034 J	0.011	0.095	N/A		0		3578544
2,4'-DiCB-(8)	ng/L	0.722	0.010	0.095	N/A		0		3578544
2,5-DiCB-(9)	ng/L	0.045 J	0.010	0.095	N/A		0		3578544
2,6-DiCB-(10)	ng/L	0.0135 J	0.0068	0.095	N/A		0		3578544
3,3'-DiCB-(11)	ng/L	0.439	0.011	0.095	N/A		0		3578544
DiCB-(12)+(13)	ng/L	0.088 J	0.011	0.19	N/A		0		3578544
3,5-DiCB-(14)	ng/L	0.010 U	0.010	0.095	N/A		0		3578544
4,4'-DiCB-(15)	ng/L	1.00	0.014	0.095	N/A		0		3578544
22'3-TriCB-(16)	ng/L	0.674	0.0082	0.095	N/A		0		3578544
22'4-TriCB-(17)	ng/L	0.744	0.0078	0.095	N/A		0		3578544
TriCB-(18)+(30)	ng/L	1.60	0.0065	0.19	N/A		0		3578544
22'6-TriCB-(19)	ng/L	0.278	0.0087	0.095	N/A		0		3578544
TriCB-(20) + (28)	ng/L	3.75	0.0069	0.19	N/A		0		3578544
TriCB-(21)+(33)	ng/L	1.28	0.0069	0.19	N/A		0		3578544
234'-TriCB-(22)	ng/L	1.17	0.0074	0.095	N/A		0		3578544
235-TriCB-(23)	ng/L	0.0073 U	0.0073	0.095	N/A		0		3578544
236-TriCB-(24)	ng/L	0.0067 U	0.0067	0.095	N/A		0		3578544
23'4-TriCB-(25)	ng/L	0.221	0.0063	0.095	N/A		0		3578544
TriCB-(26)+(29)	ng/L	0.510	0.0069	0.19	N/A		0		3578544
23'6-TriCB-(27)	ng/L	0.207	0.0057	0.095	N/A		0		3578544
24'5-TriCB-(31)	ng/L	2.32	0.0064	0.095	N/A		0		3578544
24'6-TriCB-(32)	ng/L	0.801	0.0051	0.095	N/A		0		3578544
23'5'-TriCB-(34)	ng/L	0.0073 U	0.0073	0.095	N/A		0		3578544
33'4-TriCB-(35)	ng/L	0.0521 J	0.0065	0.095	N/A		0		3578544

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8866							
Sampling Date		2014/03/28 08:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP3-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'5-TriCB-(36)	ng/L	0.0065 U	0.0065	0.095	N/A		0		3578544
344'-TriCB-(37)	ng/L	1.56	0.010	0.095	N/A		0		3578544
345-TriCB-(38)	ng/L	0.0069 U	0.0069	0.095	N/A		0		3578544
34'5-TriCB-(39)	ng/L	0.0178 J	0.0071	0.095	N/A		0		3578544
TetraCB-(40)+(41)+(71)	ng/L	2.70	0.0046	0.29	N/A		0		3578544
22'34'-TetraCB-(42)	ng/L	1.71	0.0058	0.095	N/A		0		3578544
22'35-TetraCB-(43)	ng/L	0.183	0.0054	0.095	N/A		0		3578544
TetraCB-(44)+(47)+(65)	ng/L	5.59	0.0042	0.29	N/A		0		3578544
TetraCB-(45)+(51)	ng/L	0.943	0.0046	0.19	N/A		0		3578544
22'36'-TetraCB-(46)	ng/L	0.322	0.0053	0.095	N/A		0		3578544
22'45-TetraCB-(48)	ng/L	0.767	0.0048	0.095	N/A		0		3578544
TetraCB-(49)+TetraCB-(69)	ng/L	3.24	0.0040	0.19	N/A		0		3578544
TetraCB-(50)+(53)	ng/L	0.694	0.0044	0.19	N/A		0		3578544
22'55'-TetraCB-(52)	ng/L	7.22	0.0040	0.095	N/A		0		3578544
22'66'-TetraCB-(54)	ng/L	0.0081 U (1)	0.0081	0.095	N/A		0		3578544
233'4-TetraCB-(55)	ng/L	0.0047 U	0.0047	0.095	N/A		0		3578544
233'4'-Tetra CB(56)	ng/L	1.69	0.0045	0.095	N/A		0		3578544
233'5-TetraCB-(57)	ng/L	0.0042 U	0.0042	0.095	N/A		0		3578544
233'5'-TetraCB-(58)	ng/L	0.0043 U	0.0043	0.095	N/A		0		3578544
TetraCB-(59)+(62)+(75)	ng/L	0.465	0.0033	0.29	N/A		0		3578544
2344'-TetraCB -(60)	ng/L	0.670	0.0046	0.095	N/A		0		3578544
TetraCB-(61)+(70)+(74)+(76)	ng/L	6.94	0.0043	0.38	N/A		0		3578544
234'5-TetraCB-(63)	ng/L	0.0834 J	0.0040	0.095	N/A		0		3578544
234'6-TetraCB-(64)	ng/L	2.55	0.0036	0.095	N/A		0		3578544
23'44'-TetraCB-(66)	ng/L	3.73	0.0038	0.095	N/A		0		3578544
23'45-TetraCB-(67)	ng/L	0.101	0.0037	0.095	N/A		0		3578544
23'45'-TetraCB-(68)	ng/L	0.0340 J	0.0039	0.095	N/A		0		3578544
23'55'-TetraCB-(72)	ng/L	0.0492 J	0.0040	0.095	N/A		0		3578544
23'5'6-TetraCB-(73)	ng/L	0.0038 U	0.0038	0.095	N/A		0		3578544
33'44'-TetraCB-(77)	ng/L	0.488	0.0049	0.095	N/A	0.000100	0.0000488		3578544

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Maxxam Job #: B455755
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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8866							
Sampling Date		2014/03/28 08:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP3-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'45-TetraCB-(78)	ng/L	0.0043 U	0.0043	0.095	N/A		0		3578544
33'45'-TetraCB(79)	ng/L	0.0738 J	0.0036	0.095	N/A		0		3578544
33'55'-TetraCB-(80)	ng/L	0.0037 U	0.0037	0.095	N/A		0		3578544
344'5-TetraCB-(81)	ng/L	0.0051 U	0.0051	0.095	N/A	0.000300	0.00000153		3578544
22'33'4-PentaCB-(82)	ng/L	1.62	0.014	0.095	N/A		0		3578544
PentaCB-(83)+(99)	ng/L	7.48	0.013	0.19	N/A		0		3578544
22'33'6-PentaCB-(84)	ng/L	3.82	0.014	0.095	N/A		0		3578544
PentaCB-(85)+(116)+(117)	ng/L	1.81	0.0099	0.29	N/A		0		3578544
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	9.53	0.011	0.57	N/A		0		3578544
PentaCB-(88)+(91)	ng/L	1.93	0.012	0.19	N/A		0		3578544
22'346'-PentaCB-(89)	ng/L	0.121	0.013	0.095	N/A		0		3578544
PentaCB-(90)+(101)+(113)	ng/L	13.8	0.011	0.29	N/A		0		3578544
22'355'-PentaCB-(92)	ng/L	2.74	0.012	0.095	N/A		0		3578544
PentaCB-(93)+(98)+(100)+(102)	ng/L	0.455	0.013	0.38	N/A		0		3578544
22'356'-PentaCB-(94)	ng/L	0.059 J	0.014	0.095	N/A		0		3578544
22'35'6-PentaCB-(95)	ng/L	10.9	0.012	0.095	N/A		0		3578544
22'366'-PentaCB-(96)	ng/L	0.0799 J	0.0020	0.095	N/A		0		3578544
22'45'6-PentaCB-(103)	ng/L	0.069 J	0.010	0.095	N/A		0		3578544
22'466'-PentaCB-(104)	ng/L	0.0021 U	0.0021	0.095	N/A		0		3578544
233'44'-PentaCB-(105)	ng/L	4.99	0.0056	0.095	N/A	0.0000300	0.000150		3578544
233'45-PentaCB-(106)	ng/L	0.0050 U	0.0050	0.095	N/A		0		3578544
233'4'5-PentaCB-(107)	ng/L	0.779	0.0043	0.095	N/A		0		3578544
PentaCB-(108)+(124)	ng/L	0.457	0.0051	0.19	N/A		0		3578544
PentaCB-(110)+(115)	ng/L	23.8	0.011	0.19	N/A		0		3578544
233'55'-PentaCB-(111)	ng/L	0.0095 U	0.0095	0.095	N/A		0		3578544
233'56-PentaCB-(112)	ng/L	0.0092 U	0.0092	0.095	N/A		0		3578544
2344'5-PentaCB-(114)	ng/L	0.183	0.0054	0.095	N/A	0.0000300	0.00000549		3578544
23'44'5-PentaCB-(118)	ng/L	13.3	0.0055	0.095	N/A	0.0000300	0.000399		3578544
23'455'-PentaCB-(120)	ng/L	0.0348 J	0.0087	0.095	N/A		0		3578544
23'45'6-PentaCB-(121)	ng/L	0.0094 U	0.0094	0.095	N/A		0		3578544
233'4'5'-PentaCB-(122)	ng/L	0.167	0.0055	0.095	N/A		0		3578544

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8866							
Sampling Date		2014/03/28 08:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP3-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
23'44'5'-PentaCB-(123)	ng/L	0.131	0.0060	0.095	N/A	0.0000300	0.00000393		3578544
33'44'5-PentaCB-(126)	ng/L	0.0232 J	0.0054	0.095	N/A	0.100	0.00232		3578544
33'455'-PentaCB-(127)	ng/L	0.0293 J	0.0049	0.095	N/A		0		3578544
HexaCB-(128)+(166)	ng/L	3.72	0.0055	0.19	N/A		0		3578544
HexaCB-(129)+(138)+(163)	ng/L	24.2	0.0059	0.29	N/A		0		3578544
22'33'45'-HexaCB-(130)	ng/L	1.31	0.0069	0.095	N/A		0		3578544
22'33'46-HexaCB-(131)	ng/L	0.297	0.0076	0.095	N/A		0		3578544
22'33'46'-HexaCB-(132)	ng/L	8.16	0.0070	0.095	N/A		0		3578544
22'33'55'-HexaCB-(133)	ng/L	0.257	0.0062	0.095	N/A		0		3578544
HexaCB-(134)+(143)	ng/L	1.04	0.0069	0.19	N/A		0		3578544
HexaCB-(135)+(151)	ng/L	6.37	0.0024	0.19	N/A		0		3578544
22'33'66'-HexaCB-(136)	ng/L	2.42	0.0017	0.095	N/A		0		3578544
22'344'5-HexaCB-(137)	ng/L	1.24	0.0071	0.095	N/A		0		3578544
HexaCB-(139)+(140)	ng/L	0.341	0.0058	0.19	N/A		0		3578544
22'3455'-HexaCB-(141)	ng/L	3.48	0.0059	0.095	N/A		0		3578544
22'3456-HexaCB-(142)	ng/L	0.0067 U	0.0067	0.095	N/A		0		3578544
22'345'6-HexaCB-(144)	ng/L	0.771	0.0023	0.095	N/A		0		3578544
22'3466'-HexaCB-(145)	ng/L	0.0018 U	0.0018	0.095	N/A		0		3578544
22'34'55'-HexaCB-(146)	ng/L	2.57	0.0054	0.095	N/A		0		3578544
HexaCB-(147)+(149)	ng/L	15.7	0.0058	0.19	N/A		0		3578544
22'34'56'-HexaCB-(148)	ng/L	0.0023 U	0.0023	0.095	N/A		0		3578544
22'34'66'-HexaCB-(150)	ng/L	0.0192 J	0.0018	0.095	N/A		0		3578544
22'3566'-HexaCB-(152)	ng/L	0.012 U (1)	0.012	0.095	N/A		0		3578544
HexaCB-(153)+(168)	ng/L	16.1	0.0049	0.19	N/A		0		3578544
22'44'56'-HexaCB-(154)	ng/L	0.161	0.0020	0.095	N/A		0		3578544
22'44'66'-HexaCB-(155)	ng/L	0.0020 U	0.0020	0.095	N/A		0		3578544
HexaCB-(156)+(157)	ng/L	2.35	0.015	0.19	N/A	0.0000300	0.0000705		3578544
233'44'6-HexaCB-(158)	ng/L	2.04	0.0042	0.095	N/A		0		3578544
233'455'-HexaCB-(159)	ng/L	0.015 U	0.015	0.095	N/A		0		3578544
233'456-HexaCB-(160)	ng/L	0.0055 U	0.0055	0.095	N/A		0		3578544

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8866							
Sampling Date		2014/03/28 08:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP3-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'45'6-HexaCB-(161)	ng/L	0.0046 U	0.0046	0.095	N/A		0		3578544
233'4'55'-HexaCB-(162)	ng/L	0.16 U (1)	0.16	0.095	N/A		0		3578544
233'4'5'6-HexaCB-(164)	ng/L	1.26	0.0043	0.095	N/A		0		3578544
233'55'6-HexaCB-(165)	ng/L	0.0051 U	0.0051	0.095	N/A		0		3578544
23'44'55'-HexaCB-(167)	ng/L	0.825	0.016	0.095	N/A	0.0000300	0.0000248		3578544
33'44'55'-HexaCB-(169)	ng/L	0.017 U	0.017	0.095	N/A	0.0300	0.000510		3578544
22'33'44'5-HeptaCB-(170)	ng/L	4.57	0.0080	0.095	N/A		0		3578544
HeptaCB-(171)+(173)	ng/L	1.33	0.0095	0.19	N/A		0		3578544
22'33'455'-HeptaCB-(172)	ng/L	0.710	0.0097	0.095	N/A		0		3578544
22'33'456'-HeptaCB-(174)	ng/L	4.70	0.0084	0.095	N/A		0		3578544
22'33'45'6-HeptaCB-(175)	ng/L	0.223	0.0094	0.095	N/A		0		3578544
22'33'466'-HeptaCB-(176)	ng/L	0.588	0.0069	0.095	N/A		0		3578544
22'33'45'6'-HeptaCB-(177)	ng/L	2.53	0.0095	0.095	N/A		0		3578544
22'33'55'6-HeptaCB-(178)	ng/L	0.941	0.0097	0.095	N/A		0		3578544
22'33'566'-HeptaCB-(179)	ng/L	2.01	0.0067	0.095	N/A		0		3578544
HeptaCB-(180)+(193)	ng/L	10.6	0.0069	0.19	N/A		0		3578544
22'344'56-HeptaCB-(181)	ng/L	0.0546 J	0.0095	0.095	N/A		0		3578544
22'344'56'-HeptaCB-(182)	ng/L	0.0092 U	0.0092	0.095	N/A		0		3578544
22'344'5'6-HeptaCB-(183)	ng/L	2.80	0.0072	0.095	N/A		0		3578544
22'344'66'-HeptaCB-(184)	ng/L	0.0068 U	0.0068	0.095	N/A		0		3578544
22'3455'6-HeptaCB-(185)	ng/L	0.011 U	0.011	0.095	N/A		0		3578544
22'34566'-HeptaCB-(186)	ng/L	0.0074 U	0.0074	0.095	N/A		0		3578544
22'34'55'6-HeptaCB-(187)	ng/L	6.50	0.0094	0.095	N/A		0		3578544
22'34'566'-HeptaCB-(188)	ng/L	0.0091 U	0.0091	0.095	N/A		0		3578544
233'44'55'-HeptaCB-(189)	ng/L	0.188	0.013	0.095	N/A	0.0000300	0.00000564		3578544
233'44'56-HeptaCB-(190)	ng/L	0.764	0.0073	0.095	N/A		0		3578544
233'44'5'6-HeptaCB-(191)	ng/L	0.161	0.0070	0.095	N/A		0		3578544
233'455'6-HeptaCB-(192)	ng/L	0.0079 U	0.0079	0.095	N/A		0		3578544
22'33'44'55'-OctaCB-(194)	ng/L	3.02	0.011	0.095	N/A		0		3578544
22'33'44'56-OctaCB-(195)	ng/L	0.944	0.012	0.095	N/A		0		3578544

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

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Sampling Date		2014/03/28 08:05							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP3-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'33'44'56'-OctaCB-(196)	ng/L	1.65	0.0092	0.095	N/A		0		3578544
22'33'44'66'OctaCB-(197)	ng/L	0.10 U (1)	0.10	0.095	N/A		0		3578544
OctaCB-(198)+(199)	ng/L	4.03	0.0094	0.19	N/A		0		3578544
22'33'4566'-OctaCB-(200)	ng/L	0.385	0.0063	0.095	N/A		0		3578544
22'33'45'66'-OctaCB-(201)	ng/L	0.452	0.0063	0.095	N/A		0		3578544
22'33'55'66'-OctaCB-(202)	ng/L	0.731	0.0080	0.095	N/A		0		3578544
22'344'55'6-OctaCB-(203)	ng/L	2.37	0.0091	0.095	N/A		0		3578544
22'344'566'-OctaCB-(204)	ng/L	0.0064 U	0.0064	0.095	N/A		0		3578544
233'44'55'6-OctaCB-(205)	ng/L	0.151	0.0088	0.095	N/A		0		3578544
22'33'44'55'6-NonaCB-(206)	ng/L	2.00	0.014	0.095	N/A		0		3578544
22'33'44'566'-NonaCB-(207)	ng/L	0.225	0.011	0.095	N/A		0		3578544
22'33'455'66'-NonaCB-(208)	ng/L	0.455	0.013	0.095	N/A		0		3578544
DecaCB-(209)	ng/L	0.359	0.0079	0.095	N/A		0		3578544
Monochlorobiphenyl	ng/L	0.0615	0.0015	N/A	N/A		0		3578544
Dichlorobiphenyl	ng/L	2.88	0.015	N/A	N/A		0		3578544
Trichlorobiphenyl	ng/L	15.2	0.010	N/A	N/A		0		3578544
Tetrachlorobiphenyl	ng/L	40.3	0.0058	N/A	N/A		0		3578544
Pentachlorobiphenyl	ng/L	98.3	0.014	N/A	N/A		0		3578544
Hexachlorobiphenyl	ng/L	94.5	0.017	N/A	N/A		0		3578544
Heptachlorobiphenyl	ng/L	38.7	0.013	N/A	N/A		0		3578544
Octachlorobiphenyl	ng/L	13.7	0.012	N/A	N/A		0		3578544
Nonachlorobiphenyl	ng/L	2.68	0.014	N/A	N/A		0		3578544
Decachlorobiphenyl	ng/L	0.359	0.0079	N/A	N/A		0		3578544
Total PCB	ng/L	307		N/A	N/A	N/A	0		3578544
TOTAL TOXIC EQUIVALENCY	ng/L						0.00354		
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	98							3578544
C13-22'33'44'55'6-NonaCB-(206)	%	107							3578544
C13-22'33'44'5-HeptaCB-(170)	%	104							3578544
C13-22'33'455'66'-NonaCB-(208)	%	100							3578544

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Maxxam ID		VL8866							
Sampling Date		2014/03/28 08:05							
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	Units	B21-SWP3-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-22'33'55'66'-OctaCB-(202)	%	108							3578544
C13-22'33'55'6-HeptaCB-(178)	%	109							3578544
C13-22'344'55'-HeptaCB-(180)	%	103							3578544
C13-22'34'566'-HeptaCB-(188)	%	111							3578544
C13-22'44'66'-HexaCB-(155)	%	127							3578544
C13-22'466'-PentaCB-(104)	%	123							3578544
C13-22'66'-TetraCB-(54)	%	112							3578544
C13-22'6-TriCB-(19)	%	91							3578544
C13-22'-DiCB-(4)	%	91							3578544
C13-233'44'55'6-OctaCB-(205)	%	96							3578544
C13-233'44'55'-HeptaCB-(189)	%	97							3578544
C13-233'44'-PentaCB-(105)	%	96							3578544
C13-233'55'-PentaCB-(111)	%	97							3578544
C13-23'44'55'-HexaCB-(167)	%	105							3578544
C13-2344'5-PentaCB-(114)	%	98							3578544
C13-23'44'5-PentaCB-(118)	%	97							3578544
C13-2'344'5-PentaCB-(123)	%	95							3578544
C13-2-MonoCB-(1)	%	74							3578544
C13-33'44'55'-HexaCB-(169)	%	88							3578544
C13-33'44'5-PentaCB-(126)	%	90							3578544
C13-33'44'-TetraCB-(77)	%	90							3578544
C13-344'5-TetraCB-(81)	%	89							3578544
C13-344'-TriCB-(37)	%	89							3578544
C13-44'-DiCB-(15)	%	94							3578544
C13-4-MonoCB-(3)	%	74							3578544
C13-DecaCB-(209)	%	114							3578544
C13-HexaCB-(156)+(157)	%	104							3578544

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8867							
Sampling Date		2014/03/28 10:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP6-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
2-MonoCB-(1)	ng/L	0.014 U (1)	0.014	0.095	N/A		0		3578544
3-MonoCB-(2)	ng/L	0.0027 J	0.0015	0.095	N/A		0		3578544
4-MonoCB-(3)	ng/L	0.0077 U (1)	0.0077	0.095	N/A		0		3578544
22'-DiCB-(4)	ng/L	0.136	0.0043	0.095	N/A		0		3578544
2,3-DiCB-(5)	ng/L	0.0061 U	0.0061	0.095	N/A		0		3578544
2,3'-DiCB-(6)	ng/L	0.0495 J	0.0056	0.095	N/A		0		3578544
2,4-DiCB-(7)	ng/L	0.0101 J	0.0063	0.095	N/A		0		3578544
2,4'-DiCB-(8)	ng/L	0.231	0.0059	0.095	N/A		0		3578544
2,5-DiCB-(9)	ng/L	0.0140 J	0.0058	0.095	N/A		0		3578544
2,6-DiCB-(10)	ng/L	0.0054 J	0.0037	0.095	N/A		0		3578544
3,3'-DiCB-(11)	ng/L	0.195	0.0063	0.095	N/A		0		3578544
DiCB-(12)+(13)	ng/L	0.027 U (1)	0.027	0.19	N/A		0		3578544
3,5-DiCB-(14)	ng/L	0.0060 U	0.0060	0.095	N/A		0		3578544
4,4'-DiCB-(15)	ng/L	0.324	0.0083	0.095	N/A		0		3578544
22'3-TriCB-(16)	ng/L	0.239	0.0020	0.095	N/A		0		3578544
22'4-TriCB-(17)	ng/L	0.232	0.0019	0.095	N/A		0		3578544
TriCB-(18)+(30)	ng/L	0.520	0.0016	0.19	N/A		0		3578544
22'6-TriCB-(19)	ng/L	0.0921 J	0.0022	0.095	N/A		0		3578544
TriCB-(20) + (28)	ng/L	1.23	0.0029	0.19	N/A		0		3578544
TriCB-(21)+(33)	ng/L	0.445	0.0029	0.19	N/A		0		3578544
234'-TriCB-(22)	ng/L	0.392	0.0032	0.095	N/A		0		3578544
235-TriCB-(23)	ng/L	0.0031 U	0.0031	0.095	N/A		0		3578544
236-TriCB-(24)	ng/L	0.0017 U	0.0017	0.095	N/A		0		3578544
23'4-TriCB-(25)	ng/L	0.0724 J	0.0027	0.095	N/A		0		3578544
TriCB-(26)+(29)	ng/L	0.167 J	0.0029	0.19	N/A		0		3578544
23'6-TriCB-(27)	ng/L	0.0668 J	0.0014	0.095	N/A		0		3578544
24'5-TriCB-(31)	ng/L	0.770	0.0027	0.095	N/A		0		3578544
24'6-TriCB-(32)	ng/L	0.263	0.0013	0.095	N/A		0		3578544
23'5'-TriCB-(34)	ng/L	0.0031 U	0.0031	0.095	N/A		0		3578544
33'4-TriCB-(35)	ng/L	0.0178 J	0.0028	0.095	N/A		0		3578544

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8867							
Sampling Date		2014/03/28 10:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP6-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'5-TriCB-(36)	ng/L	0.0027 U	0.0027	0.095	N/A		0		3578544
344'-TriCB-(37)	ng/L	0.485	0.0043	0.095	N/A		0		3578544
345-TriCB-(38)	ng/L	0.0029 U	0.0029	0.095	N/A		0		3578544
34'5-TriCB-(39)	ng/L	0.0042 J	0.0030	0.095	N/A		0		3578544
TetraCB-(40)+(41)+(71)	ng/L	0.888	0.0016	0.29	N/A		0		3578544
22'34'-TetraCB-(42)	ng/L	0.523	0.0020	0.095	N/A		0		3578544
22'35-TetraCB-(43)	ng/L	0.0585 J	0.0018	0.095	N/A		0		3578544
TetraCB-(44)+(47)+(65)	ng/L	1.74	0.0014	0.29	N/A		0		3578544
TetraCB-(45)+(51)	ng/L	0.283	0.0016	0.19	N/A		0		3578544
22'36'-TetraCB-(46)	ng/L	0.105	0.0018	0.095	N/A		0		3578544
22'45-TetraCB-(48)	ng/L	0.248	0.0016	0.095	N/A		0		3578544
TetraCB-(49)+TetraCB-(69)	ng/L	0.988	0.0013	0.19	N/A		0		3578544
TetraCB-(50)+(53)	ng/L	0.221	0.0015	0.19	N/A		0		3578544
22'55'-TetraCB-(52)	ng/L	2.31	0.0014	0.095	N/A		0		3578544
22'66'-TetraCB-(54)	ng/L	0.0029 U (1)	0.0029	0.095	N/A		0		3578544
233'4-TetraCB-(55)	ng/L	0.0035 U	0.0035	0.095	N/A		0		3578544
233'4'-Tetra CB(56)	ng/L	0.551	0.0033	0.095	N/A		0		3578544
233'5-TetraCB-(57)	ng/L	0.134	0.0031	0.095	N/A		0		3578544
233'5'-TetraCB-(58)	ng/L	0.0032 U	0.0032	0.095	N/A		0		3578544
TetraCB-(59)+(62)+(75)	ng/L	0.143 J	0.0011	0.29	N/A		0		3578544
2344'-TetraCB -(60)	ng/L	0.221	0.0034	0.095	N/A		0		3578544
TetraCB-(61)+(70)+(74)+(76)	ng/L	2.29	0.0032	0.38	N/A		0		3578544
234'5-TetraCB-(63)	ng/L	0.0274 J	0.0029	0.095	N/A		0		3578544
234'6-TetraCB-(64)	ng/L	0.806	0.0012	0.095	N/A		0		3578544
23'44'-TetraCB-(66)	ng/L	1.22	0.0028	0.095	N/A		0		3578544
23'45-TetraCB-(67)	ng/L	0.0322 J	0.0027	0.095	N/A		0		3578544
23'45'-TetraCB-(68)	ng/L	0.0127 J	0.0029	0.095	N/A		0		3578544
23'55'-TetraCB-(72)	ng/L	0.0153 J	0.0029	0.095	N/A		0		3578544
23'5'6-TetraCB-(73)	ng/L	0.0013 U	0.0013	0.095	N/A		0		3578544
33'44'-TetraCB-(77)	ng/L	0.161	0.0036	0.095	N/A	0.000100	0.0000161		3578544

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8867							
Sampling Date		2014/03/28 10:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP6-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
33'45-TetraCB-(78)	ng/L	0.0032 U	0.0032	0.095	N/A		0		3578544
33'45'-TetraCB(79)	ng/L	0.0395 J	0.0027	0.095	N/A		0		3578544
33'55'-TetraCB-(80)	ng/L	0.0027 U	0.0027	0.095	N/A		0		3578544
344'5-TetraCB-(81)	ng/L	0.0037 U	0.0037	0.095	N/A	0.000300	0.00000111		3578544
22'33'4-PentaCB-(82)	ng/L	0.554	0.0019	0.095	N/A		0		3578544
PentaCB-(83)+(99)	ng/L	2.62	0.0017	0.19	N/A		0		3578544
22'33'6-PentaCB-(84)	ng/L	1.19	0.0019	0.095	N/A		0		3578544
PentaCB-(85)+(116)+(117)	ng/L	0.678	0.0013	0.29	N/A		0		3578544
PentaCB-(86)(87)(97)(109)(119)(125)	ng/L	3.33	0.0015	0.57	N/A		0		3578544
PentaCB-(88)+(91)	ng/L	0.646	0.0017	0.19	N/A		0		3578544
22'346'-PentaCB-(89)	ng/L	0.0353 J	0.0018	0.095	N/A		0		3578544
PentaCB-(90)+(101)+(113)	ng/L	4.82	0.0014	0.29	N/A		0		3578544
22'355'-PentaCB-(92)	ng/L	0.929	0.0017	0.095	N/A		0		3578544
PentaCB-(93)+(98)+(100)+(102)	ng/L	0.157 J	0.0017	0.38	N/A		0		3578544
22'356'-PentaCB-(94)	ng/L	0.0181 J	0.0019	0.095	N/A		0		3578544
22'35'6-PentaCB-(95)	ng/L	3.59	0.0016	0.095	N/A		0		3578544
22'366'-PentaCB-(96)	ng/L	0.0259 J	0.0015	0.095	N/A		0		3578544
22'45'6-PentaCB-(103)	ng/L	0.0225 J	0.0014	0.095	N/A		0		3578544
22'466'-PentaCB-(104)	ng/L	0.0017 U	0.0017	0.095	N/A		0		3578544
233'44'-PentaCB-(105)	ng/L	1.72	0.0024	0.095	N/A	0.0000300	0.0000516		3578544
233'45-PentaCB-(106)	ng/L	0.0022 U	0.0022	0.095	N/A		0		3578544
233'4'5-PentaCB-(107)	ng/L	0.284	0.0019	0.095	N/A		0		3578544
PentaCB-(108)+(124)	ng/L	0.168 J	0.0022	0.19	N/A		0		3578544
PentaCB-(110)+(115)	ng/L	8.23	0.0015	0.19	N/A		0		3578544
233'55'-PentaCB-(111)	ng/L	0.0013 U	0.0013	0.095	N/A		0		3578544
233'56-PentaCB-(112)	ng/L	0.0012 U	0.0012	0.095	N/A		0		3578544
2344'5-PentaCB-(114)	ng/L	0.0637 J	0.0024	0.095	N/A	0.0000300	0.00000191		3578544
23'44'5-PentaCB-(118)	ng/L	4.77	0.0024	0.095	N/A	0.0000300	0.000143		3578544
23'455'-PentaCB-(120)	ng/L	0.012 U (1)	0.012	0.095	N/A		0		3578544
23'45'6-PentaCB-(121)	ng/L	0.0013 U	0.0013	0.095	N/A		0		3578544

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8867							
Sampling Date		2014/03/28 10:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP6-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'4'5'-PentaCB-(122)	ng/L	0.0643 J	0.0024	0.095	N/A		0		3578544
23'44'5'-PentaCB-(123)	ng/L	0.0448 J	0.0026	0.095	N/A	0.0000300	0.00000134		3578544
33'44'5-PentaCB-(126)	ng/L	0.0144 J	0.0024	0.095	N/A	0.100	0.00144		3578544
33'455'-PentaCB-(127)	ng/L	0.0122 J	0.0022	0.095	N/A		0		3578544
HexaCB-(128)+(166)	ng/L	1.43	0.0041	0.19	N/A		0		3578544
HexaCB-(129)+(138)+(163)	ng/L	9.37	0.0044	0.29	N/A		0		3578544
22'33'45'-HexaCB-(130)	ng/L	0.499	0.0052	0.095	N/A		0		3578544
22'33'46-HexaCB-(131)	ng/L	0.113	0.0057	0.095	N/A		0		3578544
22'33'46'-HexaCB-(132)	ng/L	3.15	0.0052	0.095	N/A		0		3578544
22'33'55'-HexaCB-(133)	ng/L	0.0968	0.0047	0.095	N/A		0		3578544
HexaCB-(134)+(143)	ng/L	0.437	0.0052	0.19	N/A		0		3578544
HexaCB-(135)+(151)	ng/L	2.49	0.0028	0.19	N/A		0		3578544
22'33'66'-HexaCB-(136)	ng/L	0.930	0.0020	0.095	N/A		0		3578544
22'344'5-HexaCB-(137)	ng/L	0.398	0.0053	0.095	N/A		0		3578544
HexaCB-(139)+(140)	ng/L	0.140 J	0.0043	0.19	N/A		0		3578544
22'3455'-HexaCB-(141)	ng/L	1.37	0.0044	0.095	N/A		0		3578544
22'3456-HexaCB-(142)	ng/L	0.0050 U	0.0050	0.095	N/A		0		3578544
22'345'6-HexaCB-(144)	ng/L	0.320	0.0027	0.095	N/A		0		3578544
22'3466'-HexaCB-(145)	ng/L	0.0021 U	0.0021	0.095	N/A		0		3578544
22'34'55'-HexaCB-(146)	ng/L	1.01	0.0040	0.095	N/A		0		3578544
HexaCB-(147)+(149)	ng/L	6.26	0.0043	0.19	N/A		0		3578544
22'34'56'-HexaCB-(148)	ng/L	0.0080 U (1)	0.0080	0.095	N/A		0		3578544
22'34'66'-HexaCB-(150)	ng/L	0.0075 J	0.0021	0.095	N/A		0		3578544
22'3566'-HexaCB-(152)	ng/L	0.0044 J	0.0018	0.095	N/A		0		3578544
HexaCB-(153)+(168)	ng/L	6.42	0.0036	0.19	N/A		0		3578544
22'44'56'-HexaCB-(154)	ng/L	0.0661 J	0.0023	0.095	N/A		0		3578544
22'44'66'-HexaCB-(155)	ng/L	0.0023 U	0.0023	0.095	N/A		0		3578544
HexaCB-(156)+(157)	ng/L	0.822	0.0066	0.19	N/A	0.0000300	0.0000247		3578544
233'44'6-HexaCB-(158)	ng/L	0.777	0.0031	0.095	N/A		0		3578544
233'455'-HexaCB-(159)	ng/L	0.0842 J	0.0064	0.095	N/A		0		3578544

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8867							
Sampling Date		2014/03/28 10:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP6-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
233'456-HexaCB-(160)	ng/L	0.0041 U	0.0041	0.095	N/A		0		3578544
233'45'6-HexaCB-(161)	ng/L	0.0034 U	0.0034	0.095	N/A		0		3578544
233'4'55'-HexaCB-(162)	ng/L	0.068 U (1)	0.068	0.095	N/A		0		3578544
233'4'5'6-HexaCB-(164)	ng/L	0.522	0.0032	0.095	N/A		0		3578544
233'55'6-HexaCB-(165)	ng/L	0.0038 U	0.0038	0.095	N/A		0		3578544
23'44'55'-HexaCB-(167)	ng/L	0.305	0.0070	0.095	N/A	0.0000300	0.00000915		3578544
33'44'55'-HexaCB-(169)	ng/L	0.0073 U	0.0073	0.095	N/A	0.0300	0.000219		3578544
22'33'44'5-HeptaCB-(170)	ng/L	1.60	0.0069	0.095	N/A		0		3578544
HeptaCB-(171)+(173)	ng/L	0.474	0.0083	0.19	N/A		0		3578544
22'33'455'-HeptaCB-(172)	ng/L	0.264	0.0085	0.095	N/A		0		3578544
22'33'456'-HeptaCB-(174)	ng/L	1.71	0.0073	0.095	N/A		0		3578544
22'33'45'6-HeptaCB-(175)	ng/L	0.0760 J	0.0020	0.095	N/A		0		3578544
22'33'466'-HeptaCB-(176)	ng/L	0.208	0.0014	0.095	N/A		0		3578544
22'33'45'6'-HeptaCB-(177)	ng/L	0.932	0.0082	0.095	N/A		0		3578544
22'33'55'6-HeptaCB-(178)	ng/L	0.335	0.0020	0.095	N/A		0		3578544
22'33'566'-HeptaCB-(179)	ng/L	0.736	0.0014	0.095	N/A		0		3578544
HeptaCB-(180)+(193)	ng/L	3.88	0.0060	0.19	N/A		0		3578544
22'344'56-HeptaCB-(181)	ng/L	0.0082 U	0.0082	0.095	N/A		0		3578544
22'344'56'-HeptaCB-(182)	ng/L	0.0115 J	0.0019	0.095	N/A		0		3578544
22'344'5'6-HeptaCB-(183)	ng/L	1.03	0.0063	0.095	N/A		0		3578544
22'344'66'-HeptaCB-(184)	ng/L	0.0014 U	0.0014	0.095	N/A		0		3578544
22'3455'6-HeptaCB-(185)	ng/L	0.0097 U	0.0097	0.095	N/A		0		3578544
22'34566'-HeptaCB-(186)	ng/L	0.0016 U	0.0016	0.095	N/A		0		3578544
22'34'55'6-HeptaCB-(187)	ng/L	2.43	0.0020	0.095	N/A		0		3578544
22'34'566'-HeptaCB-(188)	ng/L	0.0050 J	0.0019	0.095	N/A		0		3578544
233'44'55'-HeptaCB-(189)	ng/L	0.0704 J	0.0083	0.095	N/A	0.0000300	0.00000211		3578544
233'44'56-HeptaCB-(190)	ng/L	0.273	0.0064	0.095	N/A		0		3578544
233'44'5'6-HeptaCB-(191)	ng/L	0.053 U (1)	0.053	0.095	N/A		0		3578544
233'455'6-HeptaCB-(192)	ng/L	0.0069 U	0.0069	0.095	N/A		0		3578544
22'33'44'55'-OctaCB-(194)	ng/L	1.05	0.010	0.095	N/A		0		3578544

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8867							
Sampling Date		2014/03/28 10:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP6-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
22'33'44'56-OctaCB-(195)	ng/L	0.327	0.011	0.095	N/A		0		3578544
22'33'44'56'-OctaCB-(196)	ng/L	0.557	0.0073	0.095	N/A		0		3578544
22'33'44'66'OctaCB-(197)	ng/L	0.036 U (1)	0.036	0.095	N/A		0		3578544
OctaCB-(198)+(199)	ng/L	1.39	0.0075	0.19	N/A		0		3578544
22'33'4566'-OctaCB-(200)	ng/L	0.137	0.0050	0.095	N/A		0		3578544
22'33'45'66'-OctaCB-(201)	ng/L	0.167	0.0050	0.095	N/A		0		3578544
22'33'55'66'-OctaCB-(202)	ng/L	0.262	0.0064	0.095	N/A		0		3578544
22'344'55'6-OctaCB-(203)	ng/L	0.821	0.0072	0.095	N/A		0		3578544
22'344'566'-OctaCB-(204)	ng/L	0.0051 U	0.0051	0.095	N/A		0		3578544
233'44'55'6-OctaCB-(205)	ng/L	0.0534 J	0.0080	0.095	N/A		0		3578544
22'33'44'55'6-NonaCB-(206)	ng/L	0.755	0.0069	0.095	N/A		0		3578544
22'33'44'566'-NonaCB-(207)	ng/L	0.0854 J	0.0052	0.095	N/A		0		3578544
22'33'455'66'-NonaCB-(208)	ng/L	0.167	0.0064	0.095	N/A		0		3578544
DecaCB-(209)	ng/L	0.141	0.0086	0.095	N/A		0		3578544
Monochlorobiphenyl	ng/L	0.0027	0.0015	N/A	N/A		0		3578544
Dichlorobiphenyl	ng/L	0.965	0.0083	N/A	N/A		0		3578544
Trichlorobiphenyl	ng/L	4.99	0.0043	N/A	N/A		0		3578544
Tetrachlorobiphenyl	ng/L	13.0	0.0037	N/A	N/A		0		3578544
Pentachlorobiphenyl	ng/L	34.0	0.0026	N/A	N/A		0		3578544
Hexachlorobiphenyl	ng/L	37.0	0.0073	N/A	N/A		0		3578544
Heptachlorobiphenyl	ng/L	14.0	0.0098	N/A	N/A		0		3578544
Octachlorobiphenyl	ng/L	4.76	0.011	N/A	N/A		0		3578544
Nonachlorobiphenyl	ng/L	1.01	0.0069	N/A	N/A		0		3578544
Decachlorobiphenyl	ng/L	0.141	0.0086	N/A	N/A		0		3578544
Total PCB	ng/L	110		N/A	N/A	N/A	0		3578544
TOTAL TOXIC EQUIVALENCY	ng/L						0.00191		
Surrogate Recovery (%)									
C13-2,44'-TriCB-(28)	%	92							3578544
C13-22'33'44'55'6-NonaCB-(206)	%	100							3578544
C13-22'33'44'5-HeptaCB-(170)	%	101							3578544

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SEMI-VOLATILE ORGANICS BY HRMS (WATER)

Maxxam ID		VL8867							
Sampling Date		2014/03/28 10:15							
COC Number		na				TOXIC EQUIVALENCY		# of	
	Units	B21-SWP6-20140328	EDL	RDL	MDL	TEF (2005 WHO)	TEQ(DL)	Isomers	QC Batch
C13-22'33'455'66'-NonaCB-(208)	%	96							3578544
C13-22'33'55'66'-OctaCB-(202)	%	108							3578544
C13-22'33'55'6-HeptaCB-(178)	%	100							3578544
C13-22'344'55'-HeptaCB-(180)	%	100							3578544
C13-22'34'566'-HeptaCB-(188)	%	109							3578544
C13-22'44'66'-HexaCB-(155)	%	120							3578544
C13-22'466'-PentaCB-(104)	%	108							3578544
C13-22'66'-TetraCB-(54)	%	107							3578544
C13-22'6-TriCB-(19)	%	86							3578544
C13-22'-DiCB-(4)	%	82							3578544
C13-233'44'55'6-OctaCB-(205)	%	96							3578544
C13-233'44'55'-HeptaCB-(189)	%	97							3578544
C13-233'44'-PentaCB-(105)	%	99							3578544
C13-233'55'-PentaCB-(111)	%	96							3578544
C13-23'44'55'-HexaCB-(167)	%	102							3578544
C13-2344'5-PentaCB-(114)	%	100							3578544
C13-23'44'5-PentaCB-(118)	%	100							3578544
C13-2'344'5-PentaCB-(123)	%	100							3578544
C13-2-MonoCB-(1)	%	61							3578544
C13-33'44'55'-HexaCB-(169)	%	52							3578544
C13-33'44'5-PentaCB-(126)	%	88							3578544
C13-33'44'-TetraCB-(77)	%	100							3578544
C13-344'5-TetraCB-(81)	%	100							3578544
C13-344'-TriCB-(37)	%	90							3578544
C13-44'-DiCB-(15)	%	96							3578544
C13-4-MonoCB-(3)	%	70							3578544
C13-DecaCB-(209)	%	113							3578544
C13-HexaCB-(156)+(157)	%	101							3578544

EDL = Estimated Detection Limit

RDL = Reportable Detection Limit

TEF = Toxic Equivalency Factor, TEQ = Toxic Equivalency Quotient,
The Total Toxic Equivalency (TEQ) value reported is the sum of Toxic Equivalent Quotients for the congeners tested.

WHO(2005): The 2005 World Health Organization, Human and Mammalian Toxic Equivalency Factors for Dioxins and Dioxin-like Compounds

QC Batch = Quality Control Batch

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

TEST SUMMARY

Maxxam ID: VL8864
Sample ID: B21-SWP1-20140328
Matrix: Water

Collected: 2014/03/28
Shipped:
Received: 2014/04/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Water (8290A)	HRMS/MS	3572103	2014/04/10	2014/04/13	Owen Cosby
PCB Congeners in Water (1668A)	HRMS/MS	3578544	2014/04/17	2014/04/23	Cathy Xu

Maxxam ID: VL8865
Sample ID: B21-SWP2-20140328
Matrix: Water

Collected: 2014/03/28
Shipped:
Received: 2014/04/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Water (8290A)	HRMS/MS	3572103	2014/04/10	2014/04/13	Owen Cosby
PCB Congeners in Water (1668A)	HRMS/MS	3578544	2014/04/17	2014/04/23	Cathy Xu

Maxxam ID: VL8866
Sample ID: B21-SWP3-20140328
Matrix: Water

Collected: 2014/03/28
Shipped:
Received: 2014/04/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Water (8290A)	HRMS/MS	3572103	2014/04/10	2014/04/13	Owen Cosby
PCB Congeners in Water (1668A)	HRMS/MS	3578544	2014/04/17	2014/04/23	Cathy Xu

Maxxam ID: VL8867
Sample ID: B21-SWP6-20140328
Matrix: Water

Collected: 2014/03/28
Shipped:
Received: 2014/04/08

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dioxins/Furans in Water (8290A)	HRMS/MS	3572103	2014/04/10	2014/04/13	Owen Cosby
PCB Congeners in Water (1668A)	HRMS/MS	3578544	2014/04/17	2014/04/23	Cathy Xu

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	5.8°C
Package 2	5.7°C
Package 3	5.5°C

Revised report (2014/05/09): Homologs included on the report.

Results relate only to the items tested.

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

QUALITY ASSURANCE REPORT

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
3572103	OBC	Spiked Blank	C13-1234678 HeptaCDD	2014/04/13		101	%	40 - 135
			C13-1234678 HeptaCDF	2014/04/13		102	%	40 - 135
			C13-123478 HexaCDF	2014/04/13		86	%	40 - 135
			C13-123678 HexaCDD	2014/04/13		82	%	40 - 135
			C13-12378 PentaCDD	2014/04/13		79	%	40 - 135
			C13-12378 PentaCDF	2014/04/13		79	%	40 - 135
			C13-2378 TetraCDD	2014/04/13		71	%	40 - 135
			C13-2378 TetraCDF	2014/04/13		74	%	40 - 135
			C13-OCDD	2014/04/13		121	%	40 - 135
			2,3,7,8-Tetra CDD	2014/04/13		117	%	80 - 140
			1,2,3,7,8-Penta CDD	2014/04/13		107	%	80 - 140
			1,2,3,4,7,8-Hexa CDD	2014/04/13		103	%	80 - 140
			1,2,3,6,7,8-Hexa CDD	2014/04/13		101	%	80 - 140
			1,2,3,7,8,9-Hexa CDD	2014/04/13		112	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDD	2014/04/13		100	%	80 - 140
			Octa CDD	2014/04/13		92	%	80 - 140
			2,3,7,8-Tetra CDF	2014/04/13		104	%	80 - 140
			1,2,3,7,8-Penta CDF	2014/04/13		97	%	80 - 140
			2,3,4,7,8-Penta CDF	2014/04/13		106	%	80 - 140
			1,2,3,4,7,8-Hexa CDF	2014/04/13		96	%	80 - 140
			1,2,3,6,7,8-Hexa CDF	2014/04/13		95	%	80 - 140
			2,3,4,6,7,8-Hexa CDF	2014/04/13		97	%	80 - 140
			1,2,3,7,8,9-Hexa CDF	2014/04/13		104	%	80 - 140
			1,2,3,4,6,7,8-Hepta CDF	2014/04/13		99	%	80 - 140
			1,2,3,4,7,8,9-Hepta CDF	2014/04/13		95	%	80 - 140
			Octa CDF	2014/04/13		90	%	80 - 140
3572103	OBC	Method Blank	C13-1234678 HeptaCDD	2014/04/13		100	%	40 - 135
			C13-1234678 HeptaCDF	2014/04/13		104	%	40 - 135
			C13-123478 HexaCDF	2014/04/13		87	%	40 - 135
			C13-123678 HexaCDD	2014/04/13		83	%	40 - 135
			C13-12378 PentaCDD	2014/04/13		81	%	40 - 135
			C13-12378 PentaCDF	2014/04/13		82	%	40 - 135
			C13-2378 TetraCDD	2014/04/13		67	%	40 - 135
			C13-2378 TetraCDF	2014/04/13		73	%	40 - 135
			C13-OCDD	2014/04/13		120	%	40 - 135
			2,3,7,8-Tetra CDD	2014/04/13	1.2 U, EDL=1.2		pg/L	
			1,2,3,7,8-Penta CDD	2014/04/13	1.2 U, EDL=1.2		pg/L	
			1,2,3,4,7,8-Hexa CDD	2014/04/13	1.2 U, EDL=1.2		pg/L	
			1,2,3,6,7,8-Hexa CDD	2014/04/13	1.1 U, EDL=1.1		pg/L	
			1,2,3,7,8,9-Hexa CDD	2014/04/13	1.1 U, EDL=1.1		pg/L	
			1,2,3,4,6,7,8-Hepta CDD	2014/04/13	4.6 J, EDL=1.1		pg/L	
			Octa CDD	2014/04/13	107 J, EDL=2.3		pg/L	
			Total Tetra CDD	2014/04/13	3.2 U, EDL=3.2 (1)		pg/L	
			Total Penta CDD	2014/04/13	1.2 U, EDL=1.2		pg/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Total Hexa CDD	2014/04/13	17 U, EDL=17 (1)		pg/L	
			Total Hepta CDD	2014/04/13	4.6 J, EDL=1.1		pg/L	
			2,3,7,8-Tetra CDF	2014/04/13	1.1 U, EDL=1.1		pg/L	
			1,2,3,7,8-Penta CDF	2014/04/13	1.2 U, EDL=1.2		pg/L	
			2,3,4,7,8-Penta CDF	2014/04/13	1.2 U, EDL=1.2		pg/L	
			1,2,3,4,7,8-Hexa CDF	2014/04/13	1.1 U, EDL=1.1		pg/L	
			1,2,3,6,7,8-Hexa CDF	2014/04/13	1.0 U, EDL=1.0		pg/L	
			2,3,4,6,7,8-Hexa CDF	2014/04/13	1.1 U, EDL=1.1		pg/L	
			1,2,3,7,8,9-Hexa CDF	2014/04/13	1.2 U, EDL=1.2		pg/L	
			1,2,3,4,6,7,8-Hepta CDF	2014/04/13	3.9 U, EDL=3.9 (1)		pg/L	
			1,2,3,4,7,8,9-Hepta CDF	2014/04/13	1.3 U, EDL=1.3		pg/L	
			Octa CDF	2014/04/13	14.1 J, EDL=2.2		pg/L	
			Total Tetra CDF	2014/04/13	1.1 U, EDL=1.1		pg/L	
			Total Penta CDF	2014/04/13	2.4 U, EDL=2.4 (1)		pg/L	
			Total Hexa CDF	2014/04/13	1.1 U, EDL=1.1		pg/L	
			Total Hepta CDF	2014/04/13	6.9 J, EDL=1.2		pg/L	
3578544	CXU	Matrix Spike	C13-2,44'-TriCB-(28)	2014/04/21		65	%	40 - 125
			C13-22'33'44'55'6-NonaCB-(206)	2014/04/21		101	%	30 - 140
			C13-22'33'44'5-HeptaCB-(170)	2014/04/21		92	%	30 - 140
			C13-22'33'455'66'-NonaCB-(208)	2014/04/21		83	%	30 - 140
			C13-22'33'55'66'-OctaCB-(202)	2014/04/21		82	%	30 - 140
			C13-22'33'55'6-HeptaCB-(178)	2014/04/21		77	%	40 - 125
			C13-22'344'55'-HeptaCB-(180)	2014/04/21		91	%	30 - 140
			C13-22'34'566'-HeptaCB-(188)	2014/04/21		79	%	30 - 140
			C13-22'44'66'-HexaCB-(155)	2014/04/21		66	%	30 - 140
			C13-22'466'-PentaCB-(104)	2014/04/21		66	%	30 - 140
			C13-22'66'-TetraCB-(54)	2014/04/21		47	%	30 - 140
			C13-22'6-TriCB-(19)	2014/04/21		36	%	30 - 140
			C13-22'-DiCB-(4)	2014/04/21		30	%	30 - 140
			C13-233'44'55'6-OctaCB-(205)	2014/04/21		104	%	30 - 140
			C13-233'44'55'-HeptaCB-(189)	2014/04/21		107	%	30 - 140
			C13-233'44'-PentaCB-(105)	2014/04/21		114	%	30 - 140
			C13-233'55'-PentaCB-(111)	2014/04/21		83	%	40 - 125
			C13-23'44'55'-HexaCB-(167)	2014/04/21		112	%	30 - 140
			C13-2344'5-PentaCB-(114)	2014/04/21		107	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2014/04/21		110	%	30 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			C13-2'344'5-PentaCB-(123)	2014/04/21		109	%	30 - 140
			C13-2-MonoCB-(1)	2014/04/21		30	%	15 - 140
			C13-33'44'55'-HexaCB-(169)	2014/04/21		90	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2014/04/21		118	%	30 - 140
			C13-33'44'-TetraCB-(77)	2014/04/21		99	%	30 - 140
			C13-344'5-TetraCB-(81)	2014/04/21		95	%	30 - 140
			C13-344'-TriCB-(37)	2014/04/21		75	%	30 - 140
			C13-44'-DiCB-(15)	2014/04/21		53	%	30 - 140
			C13-4-MonoCB-(3)	2014/04/21		30	%	15 - 140
			C13-DecaCB-(209)	2014/04/21		99	%	30 - 140
			C13-HexaCB-(156)+(157)	2014/04/21		119	%	30 - 140
			2-MonoCB-(1)	2014/04/21		100	%	50 - 150
			4-MonoCB-(3)	2014/04/21		100	%	50 - 150
			22'-DiCB-(4)	2014/04/21		100	%	50 - 150
			4,4'-DiCB-(15)	2014/04/21		86	%	50 - 150
			22'6-TriCB-(19)	2014/04/21		97	%	50 - 150
			235-TriCB-(23)	2014/04/21		92	%	50 - 150
			23'5'-TriCB-(34)	2014/04/21		76	%	50 - 150
			344'-TriCB-(37)	2014/04/21		103	%	50 - 150
			22'66'-TetraCB-(54)	2014/04/21		94	%	50 - 150
			33'44'-TetraCB-(77)	2014/04/21		93	%	50 - 150
			344'5-TetraCB-(81)	2014/04/21		93	%	50 - 150
			22'466'-PentaCB-(104)	2014/04/21		100	%	50 - 150
			233'44'-PentaCB-(105)	2014/04/21		91	%	50 - 150
			2344'5-PentaCB-(114)	2014/04/21		94	%	50 - 150
			23'44'5-PentaCB-(118)	2014/04/21		93	%	50 - 150
			23'44'5'-PentaCB-(123)	2014/04/21		92	%	50 - 150
			33'44'5-PentaCB-(126)	2014/04/21		91	%	50 - 150
			22'44'66'-HexaCB-(155)	2014/04/21		96	%	50 - 150
			HexaCB-(156)+(157)	2014/04/21		93	%	50 - 150
			23'44'55'-HexaCB-(167)	2014/04/21		96	%	50 - 150
			33'44'55'-HexaCB-(169)	2014/04/21		95	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2014/04/21		97	%	50 - 150
			HeptaCB-(180)+(193)	2014/04/21		72	%	50 - 150
			22'344'56'-HeptaCB-(182)	2014/04/21		82	%	50 - 150
			22'34'55'6-HeptaCB-(187)	2014/04/21		86	%	50 - 150
			22'34'566'-HeptaCB-(188)	2014/04/21		92	%	50 - 150
			233'44'55'-HeptaCB-(189)	2014/04/21		89	%	50 - 150
			22'33'55'66'-OctaCB-(202)	2014/04/21		95	%	50 - 150
			233'44'55'6-OctaCB-(205)	2014/04/21		95	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2014/04/21		96	%	50 - 150
			22'33'455'66'-NonaCB-(208)	2014/04/21		99	%	50 - 150
			DecaCB-(209)	2014/04/21		94	%	50 - 150
3578544	CXU	RPD	2-MonoCB-(1)	2014/04/21	1.0		%	30
			4-MonoCB-(3)	2014/04/21	4.1		%	30
			22'-DiCB-(4)	2014/04/21	3.0		%	30
			4,4'-DiCB-(15)	2014/04/21	3.4		%	30
			22'6-TriCB-(19)	2014/04/21	1.0		%	30
			235-TriCB-(23)	2014/04/21	9.3		%	30
			23'5'-TriCB-(34)	2014/04/21	7.6		%	30
			344'-TriCB-(37)	2014/04/21	1		%	30
			22'66'-TetraCB-(54)	2014/04/21	1.1		%	30
			33'44'-TetraCB-(77)	2014/04/21	3.2		%	30
			344'5-TetraCB-(81)	2014/04/21	4.2		%	30

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			22'466'-PentaCB-(104)	2014/04/21	2.0		%	30
			233'44'-PentaCB-(105)	2014/04/21	3.2		%	30
			2344'5-PentaCB-(114)	2014/04/21	1.1		%	30
			23'44'5-PentaCB-(118)	2014/04/21	5.2		%	30
			23'44'5'-PentaCB-(123)	2014/04/21	1.1		%	30
			33'44'5-PentaCB-(126)	2014/04/21	2.2		%	30
			22'44'66'-HexaCB-(155)	2014/04/21	5.3		%	30
			HexaCB-(156)+(157)	2014/04/21	5.2		%	30
			23'44'55'-HexaCB-(167)	2014/04/21	3.1		%	30
			33'44'55'-HexaCB-(169)	2014/04/21	1.0		%	30
			22'33'44'5-HeptaCB-(170)	2014/04/21	2.0		%	30
			HeptaCB-(180)+(193)	2014/04/21	5.4		%	30
			22'344'56'-HeptaCB-(182)	2014/04/21	3.7		%	30
			22'34'55'6-HeptaCB-(187)	2014/04/21	3.6		%	30
			22'34'566'-HeptaCB-(188)	2014/04/21	2.2		%	30
			233'44'55'-HeptaCB-(189)	2014/04/21	4.4		%	30
			22'33'55'66'-OctaCB-(202)	2014/04/21	1.0		%	30
			233'44'55'6-OctaCB-(205)	2014/04/21	1.0		%	30
			22'33'44'55'6-NonaCB-(206)	2014/04/21	1.0		%	30
			22'33'455'66'-NonaCB-(208)	2014/04/21	0		%	30
			DecaCB-(209)	2014/04/21	3.1		%	30
3578544	CXU	Spiked Blank	C13-2,44'-TriCB-(28)	2014/04/21		70	%	40 - 125
			C13-22'33'44'55'6-NonaCB-(206)	2014/04/21		100	%	30 - 140
			C13-22'33'44'5-HeptaCB-(170)	2014/04/21		94	%	30 - 140
			C13-22'33'455'66'-NonaCB-(208)	2014/04/21		86	%	30 - 140
			C13-22'33'55'66'-OctaCB-(202)	2014/04/21		76	%	30 - 140
			C13-22'33'55'6-HeptaCB-(178)	2014/04/21		81	%	40 - 125
			C13-22'344'55'-HeptaCB-(180)	2014/04/21		91	%	30 - 140
			C13-22'34'566'-HeptaCB-(188)	2014/04/21		82	%	30 - 140
			C13-22'44'66'-HexaCB-(155)	2014/04/21		67	%	30 - 140
			C13-22'466'-PentaCB-(104)	2014/04/21		70	%	30 - 140
			C13-22'66'-TetraCB-(54)	2014/04/21		46	%	30 - 140
			C13-22'6-TriCB-(19)	2014/04/21		39	%	30 - 140
			C13-22'-DiCB-(4)	2014/04/21		33	%	30 - 140
			C13-233'44'55'6-OctaCB-(205)	2014/04/21		106	%	30 - 140
			C13-233'44'55'-HeptaCB-(189)	2014/04/21		109	%	30 - 140
			C13-233'44'-PentaCB-(105)	2014/04/21		127	%	30 - 140
			C13-233'55'-PentaCB-(111)	2014/04/21		94	%	40 - 125
			C13-23'44'55'-HexaCB-(167)	2014/04/21		124	%	30 - 140
			C13-2344'5-PentaCB-(114)	2014/04/21		122	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2014/04/21		124	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2014/04/21		122	%	30 - 140
			C13-2-MonoCB-(1)	2014/04/21		35	%	15 - 140
			C13-33'44'55'-HexaCB-(169)	2014/04/21		79	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2014/04/21		125	%	30 - 140
			C13-33'44'-TetraCB-(77)	2014/04/21		105	%	30 - 140
			C13-344'5-TetraCB-(81)	2014/04/21		101	%	30 - 140
			C13-344'-TriCB-(37)	2014/04/21		81	%	30 - 140
			C13-44'-DiCB-(15)	2014/04/21		60	%	30 - 140
			C13-4-MonoCB-(3)	2014/04/21		36	%	15 - 140
			C13-DecaCB-(209)	2014/04/21		97	%	30 - 140
			C13-HexaCB-(156)+(157)	2014/04/21		127	%	30 - 140
			2-MonoCB-(1)	2014/04/21		98	%	50 - 150
			4-MonoCB-(3)	2014/04/21		98	%	50 - 150

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			22'-DiCB-(4)	2014/04/21		99	%	50 - 150
			4,4'-DiCB-(15)	2014/04/21		92	%	50 - 150
			22'6-TriCB-(19)	2014/04/21		100	%	50 - 150
			235-TriCB-(23)	2014/04/21		93	%	50 - 150
			23'5'-TriCB-(34)	2014/04/21		78	%	50 - 150
			344'-TriCB-(37)	2014/04/21		103	%	50 - 150
			22'66'-TetraCB-(54)	2014/04/21		101	%	50 - 150
			33'44'-TetraCB-(77)	2014/04/21		97	%	50 - 150
			344'5-TetraCB-(81)	2014/04/21		97	%	50 - 150
			22'466'-PentaCB-(104)	2014/04/21		99	%	50 - 150
			233'44'-PentaCB-(105)	2014/04/21		96	%	50 - 150
			2344'5-PentaCB-(114)	2014/04/21		96	%	50 - 150
			23'44'5-PentaCB-(118)	2014/04/21		96	%	50 - 150
			23'44'5'-PentaCB-(123)	2014/04/21		96	%	50 - 150
			33'44'5-PentaCB-(126)	2014/04/21		93	%	50 - 150
			22'44'66'-HexaCB-(155)	2014/04/21		97	%	50 - 150
			HexaCB-(156)+(157)	2014/04/21		97	%	50 - 150
			23'44'55'-HexaCB-(167)	2014/04/21		97	%	50 - 150
			33'44'55'-HexaCB-(169)	2014/04/21		99	%	50 - 150
			22'33'44'5-HeptaCB-(170)	2014/04/21		100	%	50 - 150
			HeptaCB-(180)+(193)	2014/04/21		76	%	50 - 150
			22'344'56'-HeptaCB-(182)	2014/04/21		79	%	50 - 150
			22'34'55'6-HeptaCB-(187)	2014/04/21		82	%	50 - 150
			22'34'566'-HeptaCB-(188)	2014/04/21		96	%	50 - 150
			233'44'55'-HeptaCB-(189)	2014/04/21		91	%	50 - 150
			22'33'55'66'-OctaCB-(202)	2014/04/21		98	%	50 - 150
			233'44'55'6-OctaCB-(205)	2014/04/21		97	%	50 - 150
			22'33'44'55'6-NonaCB-(206)	2014/04/21		93	%	50 - 150
			22'33'455'66'-NonaCB-(208)	2014/04/21		99	%	50 - 150
			DecaCB-(209)	2014/04/21		96	%	50 - 150
3578544	CXU	Method Blank	C13-2,44'-TriCB-(28)	2014/04/21		74	%	40 - 125
			C13-22'33'44'55'6-NonaCB-(206)	2014/04/21		97	%	30 - 140
			C13-22'33'44'5-HeptaCB-(170)	2014/04/21		89	%	30 - 140
			C13-22'33'455'66'-NonaCB-(208)	2014/04/21		79	%	30 - 140
			C13-22'33'55'66'-OctaCB-(202)	2014/04/21		73	%	30 - 140
			C13-22'33'55'6-HeptaCB-(178)	2014/04/21		79	%	40 - 125
			C13-22'344'55'-HeptaCB-(180)	2014/04/21		87	%	30 - 140
			C13-22'34'566'-HeptaCB-(188)	2014/04/21		78	%	30 - 140
			C13-22'44'66'-HexaCB-(155)	2014/04/21		80	%	30 - 140
			C13-22'466'-PentaCB-(104)	2014/04/21		63	%	30 - 140
			C13-22'66'-TetraCB-(54)	2014/04/21		49	%	30 - 140
			C13-22'6-TriCB-(19)	2014/04/21		44	%	30 - 140
			C13-22'-DiCB-(4)	2014/04/21		38	%	30 - 140
			C13-233'44'55'6-OctaCB-(205)	2014/04/21		103	%	30 - 140
			C13-233'44'55'-HeptaCB-(189)	2014/04/21		107	%	30 - 140
			C13-233'44'-PentaCB-(105)	2014/04/21		113	%	30 - 140
			C13-233'55'-PentaCB-(111)	2014/04/21		93	%	40 - 125
			C13-23'44'55'-HexaCB-(167)	2014/04/21		122	%	30 - 140
			C13-2344'5-PentaCB-(114)	2014/04/21		109	%	30 - 140
			C13-23'44'5-PentaCB-(118)	2014/04/21		112	%	30 - 140
			C13-2'344'5-PentaCB-(123)	2014/04/21		112	%	30 - 140
			C13-2-MonoCB-(1)	2014/04/21		40	%	15 - 140
			C13-33'44'55'-HexaCB-(169)	2014/04/21		76	%	30 - 140
			C13-33'44'5-PentaCB-(126)	2014/04/21		114	%	30 - 140

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			C13-33'44'-TetraCB-(77)	2014/04/21		103	%	30 - 140
			C13-344'5-TetraCB-(81)	2014/04/21		100	%	30 - 140
			C13-344'-TriCB-(37)	2014/04/21		77	%	30 - 140
			C13-44'-DiCB-(15)	2014/04/21		63	%	30 - 140
			C13-4-MonoCB-(3)	2014/04/21		41	%	15 - 140
			C13-DecaCB-(209)	2014/04/21		90	%	30 - 140
			C13-HexaCB-(156)+(157)	2014/04/21		129	%	30 - 140
			2-MonoCB-(1)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			3-MonoCB-(2)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			4-MonoCB-(3)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			22'-DiCB-(4)	2014/04/21	0.014 U, EDL=0.014		ng/L	
			2,3-DiCB-(5)	2014/04/21	0.016 U, EDL=0.016		ng/L	
			2,3'-DiCB-(6)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			2,4-DiCB-(7)	2014/04/21	0.013 U, EDL=0.013		ng/L	
			2,4'-DiCB-(8)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			2,5-DiCB-(9)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			2,6-DiCB-(10)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			3,3'-DiCB-(11)	2014/04/21	0.082 J, EDL=0.013		ng/L	
			DiCB-(12)+(13)	2014/04/21	0.013 U, EDL=0.013		ng/L	
			3,5-DiCB-(14)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			4,4'-DiCB-(15)	2014/04/21	0.019 U, EDL=0.019		ng/L	
			22'3-TriCB-(16)	2014/04/21	0.018 U, EDL=0.018		ng/L	
			22'4-TriCB-(17)	2014/04/21	0.015 U, EDL=0.015		ng/L	
			TriCB-(18)+(30)	2014/04/21	0.013 U, EDL=0.013		ng/L	
			22'6-TriCB-(19)	2014/04/21	0.017 U, EDL=0.017		ng/L	
			TriCB-(20) + (28)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			TriCB-(21)+(33)	2014/04/21	0.0097 U, EDL=0.0097		ng/L	
			234'-TriCB-(22)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			235-TriCB-(23)	2014/04/21	0.011 U, EDL=0.011		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			236-TriCB-(24)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			23'4-TriCB-(25)	2014/04/21	0.0095 U, EDL=0.0095		ng/L	
			TriCB-(26)+(29)	2014/04/21	0.0097 U, EDL=0.0097		ng/L	
			23'6-TriCB-(27)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			24'5-TriCB-(31)	2014/04/21	0.0091 U, EDL=0.0091		ng/L	
			24'6-TriCB-(32)	2014/04/21	0.0096 U, EDL=0.0096		ng/L	
			23'5'-TriCB-(34)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			33'4-TriCB-(35)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			33'5-TriCB-(36)	2014/04/21	0.0087 U, EDL=0.0087		ng/L	
			344'-TriCB-(37)	2014/04/21	0.015 U, EDL=0.015		ng/L	
			345-TriCB-(38)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			34'5-TriCB-(39)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			TetraCB-(40)+(41)+(71)	2014/04/21	0.017 U, EDL=0.017		ng/L	
			22'34'-TetraCB-(42)	2014/04/21	0.020 U, EDL=0.020		ng/L	
			22'35-TetraCB-(43)	2014/04/21	0.021 U, EDL=0.021		ng/L	
			TetraCB-(44)+(47)+(65)	2014/04/21	0.020 J, EDL=0.016		ng/L	
			TetraCB-(45)+(51)	2014/04/21	0.017 U, EDL=0.017		ng/L	
			22'36'-TetraCB-(46)	2014/04/21	0.019 U, EDL=0.019		ng/L	
			22'45-TetraCB-(48)	2014/04/21	0.018 U, EDL=0.018		ng/L	
			TetraCB-(49)+TetraCB-(69)	2014/04/21	0.015 U, EDL=0.015		ng/L	
			TetraCB-(50)+(53)	2014/04/21	0.016 U, EDL=0.016		ng/L	
			22'55'-TetraCB-(52)	2014/04/21	0.017 U, EDL=0.017		ng/L	
			22'66'-TetraCB-(54)	2014/04/21	0.014 U, EDL=0.014		ng/L	
			233'4-TetraCB-(55)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			233'4'-Tetra CB(56)	2014/04/21	0.011 U, EDL=0.011		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			233'5-TetraCB-(57)	2014/04/21	0.0094 U, EDL=0.0094		ng/L	
			233'5'-TetraCB-(58)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			TetraCB-(59)+(62)+(75)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			2344'-TetraCB -(60)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			TetraCB-(61)+(70)+(74)+(76)	2014/04/21	0.0098 U, EDL=0.0098		ng/L	
			234'5-TetraCB-(63)	2014/04/21	0.0090 U, EDL=0.0090		ng/L	
			234'6-TetraCB-(64)	2014/04/21	0.013 U, EDL=0.013		ng/L	
			23'44'-TetraCB-(66)	2014/04/21	0.0093 U, EDL=0.0093		ng/L	
			23'45-TetraCB-(67)	2014/04/21	0.0083 U, EDL=0.0083		ng/L	
			23'45'-TetraCB-(68)	2014/04/21	0.0089 U, EDL=0.0089		ng/L	
			23'55'-TetraCB-(72)	2014/04/21	0.0090 U, EDL=0.0090		ng/L	
			23'5'6-TetraCB-(73)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			33'44'-TetraCB-(77)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			33'45-TetraCB-(78)	2014/04/21	0.0097 U, EDL=0.0097		ng/L	
			33'45'-TetraCB(79)	2014/04/21	0.0083 U, EDL=0.0083		ng/L	
			33'55'-TetraCB-(80)	2014/04/21	0.0086 U, EDL=0.0086		ng/L	
			344'5-TetraCB-(81)	2014/04/21	0.013 U, EDL=0.013		ng/L	
			22'33'4-PentaCB-(82)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			PentaCB-(83)+(99)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			22'33'6-PentaCB-(84)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			PentaCB-(85)+(116)+(117)	2014/04/21	0.0085 U, EDL=0.0085		ng/L	
			PentaCB-(86)(87)(97)(109)(119)(125)	2014/04/21	0.0088 U, EDL=0.0088		ng/L	
			PentaCB-(88)+(91)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			22'346'-PentaCB-(89)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			PentaCB-(90)+(101)+(113)	2014/04/21	0.0086 U, EDL=0.0086		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			22'355'-PentaCB-(92)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			PentaCB-(93)+(98)+(100)+(102)	2014/04/21	0.010 U, EDL=0.010		ng/L	
			22'356'-PentaCB-(94)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			22'35'6-PentaCB-(95)	2014/04/21	0.0093 U, EDL=0.0093		ng/L	
			22'366'-PentaCB-(96)	2014/04/21	0.0095 U, EDL=0.0095		ng/L	
			22'45'6-PentaCB-(103)	2014/04/21	0.0085 U, EDL=0.0085		ng/L	
			22'466'-PentaCB-(104)	2014/04/21	0.0091 U, EDL=0.0091		ng/L	
			233'44'-PentaCB-(105)	2014/04/21	0.0076 U, EDL=0.0076		ng/L	
			233'45-PentaCB-(106)	2014/04/21	0.0061 U, EDL=0.0061		ng/L	
			233'4'5-PentaCB-(107)	2014/04/21	0.0063 U, EDL=0.0063		ng/L	
			PentaCB-(108)+(124)	2014/04/21	0.0066 U, EDL=0.0066		ng/L	
			PentaCB-(110)+(115)	2014/04/21	0.0080 U, EDL=0.0080		ng/L	
			233'55'-PentaCB-(111)	2014/04/21	0.0077 U, EDL=0.0077		ng/L	
			233'56-PentaCB-(112)	2014/04/21	0.0071 U, EDL=0.0071		ng/L	
			2344'5-PentaCB-(114)	2014/04/21	0.0073 U, EDL=0.0073		ng/L	
			23'44'5-PentaCB-(118)	2014/04/21	0.0075 U, EDL=0.0075		ng/L	
			23'455'-PentaCB-(120)	2014/04/21	0.0070 U, EDL=0.0070		ng/L	
			23'45'6-PentaCB-(121)	2014/04/21	0.0076 U, EDL=0.0076		ng/L	
			233'4'5'-PentaCB-(122)	2014/04/21	0.0071 U, EDL=0.0071		ng/L	
			23'44'5'-PentaCB-(123)	2014/04/21	0.0081 U, EDL=0.0081		ng/L	
			33'44'5-PentaCB-(126)	2014/04/21	0.0074 U, EDL=0.0074		ng/L	
			33'455'-PentaCB-(127)	2014/04/21	0.0064 U, EDL=0.0064		ng/L	
			HexaCB-(128)+(166)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			HexaCB-(129)+(138)+(163)	2014/04/21	0.014 U, EDL=0.014		ng/L	
			22'33'45'-HexaCB-(130)	2014/04/21	0.016 U, EDL=0.016		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			22'33'46-HexaCB-(131)	2014/04/21	0.017 U, EDL=0.017		ng/L	
			22'33'46'-HexaCB-(132)	2014/04/21	0.016 U, EDL=0.016		ng/L	
			22'33'55'-HexaCB-(133)	2014/04/21	0.014 U, EDL=0.014		ng/L	
			HexaCB-(134)+(143)	2014/04/21	0.016 U, EDL=0.016		ng/L	
			HexaCB-(135)+(151)	2014/04/21	0.0097 U, EDL=0.0097		ng/L	
			22'33'66'-HexaCB-(136)	2014/04/21	0.0067 U, EDL=0.0067		ng/L	
			22'344'5-HexaCB-(137)	2014/04/21	0.016 U, EDL=0.016		ng/L	
			HexaCB-(139)+(140)	2014/04/21	0.013 U, EDL=0.013		ng/L	
			22'3455'-HexaCB-(141)	2014/04/21	0.014 U, EDL=0.014		ng/L	
			22'3456-HexaCB-(142)	2014/04/21	0.015 U, EDL=0.015		ng/L	
			22'345'6-HexaCB-(144)	2014/04/21	0.0092 U, EDL=0.0092		ng/L	
			22'3466'-HexaCB-(145)	2014/04/21	0.0074 U, EDL=0.0074		ng/L	
			22'34'55'-HexaCB-(146)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			HexaCB-(147)+(149)	2014/04/21	0.013 U, EDL=0.013		ng/L	
			22'34'56'-HexaCB-(148)	2014/04/21	0.0093 U, EDL=0.0093		ng/L	
			22'34'66'-HexaCB-(150)	2014/04/21	0.0070 U, EDL=0.0070		ng/L	
			22'3566'-HexaCB-(152)	2014/04/21	0.0064 U, EDL=0.0064		ng/L	
			HexaCB-(153)+(168)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			22'44'56'-HexaCB-(154)	2014/04/21	0.0081 U, EDL=0.0081		ng/L	
			22'44'66'-HexaCB-(155)	2014/04/21	0.0077 U, EDL=0.0077		ng/L	
			HexaCB-(156)+(157)	2014/04/21	0.0039 U, EDL=0.0039		ng/L	
			233'44'6-HexaCB-(158)	2014/04/21	0.0095 U, EDL=0.0095		ng/L	
			233'455'-HexaCB-(159)	2014/04/21	0.0034 U, EDL=0.0034		ng/L	
			233'456-HexaCB-(160)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			233'45'6-HexaCB-(161)	2014/04/21	0.010 U, EDL=0.010		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			233'4'55'-HexaCB-(162)	2014/04/21	0.0036 U, EDL=0.0036		ng/L	
			233'4'5'6-HexaCB-(164)	2014/04/21	0.0099 U, EDL=0.0099		ng/L	
			233'55'6-HexaCB-(165)	2014/04/21	0.012 U, EDL=0.012		ng/L	
			23'44'55'-HexaCB-(167)	2014/04/21	0.0041 U, EDL=0.0041		ng/L	
			33'44'55'-HexaCB-(169)	2014/04/21	0.0043 U, EDL=0.0043		ng/L	
			22'33'44'5-HeptaCB-(170)	2014/04/21	0.0060 U, EDL=0.0060		ng/L	
			HeptaCB-(171)+(173)	2014/04/21	0.0069 U, EDL=0.0069		ng/L	
			22'33'455'-HeptaCB-(172)	2014/04/21	0.0071 U, EDL=0.0071		ng/L	
			22'33'456'-HeptaCB-(174)	2014/04/21	0.0063 U, EDL=0.0063		ng/L	
			22'33'45'6-HeptaCB-(175)	2014/04/21	0.0048 U, EDL=0.0048		ng/L	
			22'33'466'-HeptaCB-(176)	2014/04/21	0.0036 U, EDL=0.0036		ng/L	
			22'33'45'6'-HeptaCB-(177)	2014/04/21	0.0069 U, EDL=0.0069		ng/L	
			22'33'55'6-HeptaCB-(178)	2014/04/21	0.0050 U, EDL=0.0050		ng/L	
			22'33'566'-HeptaCB-(179)	2014/04/21	0.0034 U, EDL=0.0034		ng/L	
			HeptaCB-(180)+(193)	2014/04/21	0.0051 U, EDL=0.0051		ng/L	
			22'344'56-HeptaCB-(181)	2014/04/21	0.0069 U, EDL=0.0069		ng/L	
			22'344'56'-HeptaCB-(182)	2014/04/21	0.0048 U, EDL=0.0048		ng/L	
			22'344'5'6-HeptaCB-(183)	2014/04/21	0.0062 U, EDL=0.0062		ng/L	
			22'344'66'-HeptaCB-(184)	2014/04/21	0.0035 U, EDL=0.0035		ng/L	
			22'3455'6-HeptaCB-(185)	2014/04/21	0.0064 U, EDL=0.0064		ng/L	
			22'34566'-HeptaCB-(186)	2014/04/21	0.0038 U, EDL=0.0038		ng/L	
			22'34'55'6-HeptaCB-(187)	2014/04/21	0.0049 U, EDL=0.0049		ng/L	
			22'34'566'-HeptaCB-(188)	2014/04/21	0.0047 U, EDL=0.0047		ng/L	
			233'44'55'-HeptaCB-(189)	2014/04/21	0.0062 U, EDL=0.0062		ng/L	
			233'44'56-HeptaCB-(190)	2014/04/21	0.0055 U, EDL=0.0055		ng/L	

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QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			233'44'5'6-HeptaCB-(191)	2014/04/21	0.0051 U, EDL=0.0051		ng/L	
			233'455'6-HeptaCB-(192)	2014/04/21	0.0058 U, EDL=0.0058		ng/L	
			22'33'44'55'-OctaCB-(194)	2014/04/21	0.0077 U, EDL=0.0077		ng/L	
			22'33'44'56-OctaCB-(195)	2014/04/21	0.0080 U, EDL=0.0080		ng/L	
			22'33'44'56'-OctaCB-(196)	2014/04/21	0.0066 U, EDL=0.0066		ng/L	
			22'33'44'66'OctaCB-(197)	2014/04/21	0.0047 U, EDL=0.0047		ng/L	
			OctaCB-(198)+(199)	2014/04/21	0.0067 U, EDL=0.0067		ng/L	
			22'33'4566'-OctaCB-(200)	2014/04/21	0.0043 U, EDL=0.0043		ng/L	
			22'33'45'66'-OctaCB-(201)	2014/04/21	0.0043 U, EDL=0.0043		ng/L	
			22'33'55'66'-OctaCB-(202)	2014/04/21	0.0057 U, EDL=0.0057		ng/L	
			22'344'55'6-OctaCB-(203)	2014/04/21	0.0065 U, EDL=0.0065		ng/L	
			22'344'566'-OctaCB-(204)	2014/04/21	0.0044 U, EDL=0.0044		ng/L	
			233'44'55'6-OctaCB-(205)	2014/04/21	0.0061 U, EDL=0.0061		ng/L	
			22'33'44'55'6-NonaCB-(206)	2014/04/21	0.0098 U, EDL=0.0098		ng/L	
			22'33'44'566'-NonaCB-(207)	2014/04/21	0.0070 U, EDL=0.0070		ng/L	
			22'33'455'66'-NonaCB-(208)	2014/04/21	0.0091 U, EDL=0.0091		ng/L	
			DecaCB-(209)	2014/04/21	0.011 U, EDL=0.011		ng/L	
			Monochlorobiphenyl	2014/04/21	0.012 U, EDL=0.012		ng/L	
			Dichlorobiphenyl	2014/04/21	0.082 , EDL=0.019		ng/L	
			Trichlorobiphenyl	2014/04/21	0.018 U, EDL=0.018		ng/L	
			Tetrachlorobiphenyl	2014/04/21	0.021 U, EDL=0.021		ng/L	
			Pentachlorobiphenyl	2014/04/21	0.011 U, EDL=0.011		ng/L	
			Hexachlorobiphenyl	2014/04/21	0.017 U, EDL=0.017		ng/L	
			Heptachlorobiphenyl	2014/04/21	0.0071 U, EDL=0.0071		ng/L	
			Octachlorobiphenyl	2014/04/21	0.0080 U, EDL=0.0080		ng/L	

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	Units	QC Limits
			Nonachlorobiphenyl	2014/04/21	0.0098 U, EDL=0.0098		ng/L	
			Decachlorobiphenyl	2014/04/21	0.011 U, EDL=0.011		ng/L	
			Total PCB	2014/04/21	0.102		ng/L	

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

(1) EMPC / NDR - Peak detected does not meet ratio criteria and has resulted in an elevated detection limit.

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Maxxam Job #: B455755
Report Date: 2014/05/09

Apex Laboratories
Client Project #: A4D0003

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Kay Shaw, C. Chem, Sr Scientific Specialist, HRMS Services

Owen Cosby, BSc.C.Chem, Supervisor, HRMS Services

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Maxxam Analytics International Corporation o/a Maxxam Analytics 6740 Campobello Road, Mississauga, Ontario, L5N 2L8 Tel: (905) 817-5700 Toll-Free: 800-563-6266 Fax: (905) 817-5777 www.maxxam.ca

Analytical Resources, Incorporated
Analytical Chemists and Consultants

April 22, 2014

Philip Nerenberg
Apex Laboratories
12232 SW Garden Place
Tigard, OR 97223

Client Project: A4D0003
ARI Job No.: YG02

Dear Mr. Nerenberg:

Please find enclosed the original Chain of Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above.

Sample receipt information and analytical details are addressed in the Case Narrative.

An electronic copy of this report and all supporting raw data will be kept on file at ARI. Should you have any questions or concerns, please feel free to call me at your convenience.

Respectfully,
ANALYTICAL RESOURCES, INC.

Cheronne Oreiro
Project Manager
(206) 695-6214
cheronneo@arilabs.com
www.arilabs.com

cc: eFile: YG02

Enclosures

4611 South 134th Place, Suite 100 • Tukwila WA 98168 • **206-695-6200** • **206-695-6201** fax

4/4/14 KH

SUBCONTRACT ORDER

Apex Laboratories

A4D0003

YG02

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Analytical Resources, INC
4611 S. 134th Place
Tukwila, WA 98168
Phone :(206) 695-6200
Fax: (206) 695-6201

Sample Name: B21-SWP1-20140328 **Water** **Sampled: 03/28/14 11:30** (A4D0003-01)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	04/11/14 17:00	04/11/14 11:30	Krone--ARI
Containers Supplied:			
(P)1 L Amber Glass - Non Preserved			
(Q)1 L Amber Glass - Non Preserved			

Sample Name: B21-SWP2-20140328 **Water** **Sampled: 03/28/14 07:15** (A4D0003-02)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	04/11/14 17:00	04/11/14 07:15	Krone--ARI
Containers Supplied:			
(P)1 L Amber Glass - Non Preserved			
(Q)1 L Amber Glass - Non Preserved			

Sample Name: B21-SWP3-20140328 **Water** **Sampled: 03/28/14 08:05** (A4D0003-03)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	04/11/14 17:00	04/11/14 08:05	Krone--ARI
Containers Supplied:			
(P)1 L Amber Glass - Non Preserved			
(Q)1 L Amber Glass - Non Preserved			

Sample Name: B21-SWP6-20140328 **Water** **Sampled: 03/28/14 10:15** (A4D0003-04)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	04/11/14 17:00	04/11/14 10:15	Krone--ARI
Containers Supplied:			
(O)1 L Amber Glass - Non Preserved			
(P)1 L Amber Glass - Non Preserved			

Std + At
4/7/14 Watch hold

Released By	Date	Received By	Date
UPS (Shipper)		UPS (Shipper)	
Released By	Date	Received By	Date
		[signature]	4/8/14 1050

YG02 : 00002

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Apex

Project Name: A4D0030

COC No(s) _____ NA

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: _____

Assigned ARI Job No: YG02

Tracking No. 1235170 454 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry) Time: 1030 — 4.0

If cooler temperature is out of compliance fill out form 00070F — Temp Gun ID#: 1224/2224

Cooler Accepted by: AV Date: 4/10/14 Time: 1030

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		YES	NO
What kind of packing material was used? ... Bubble Wrap Wet Ice Gel Packs Baggies Foam Block Paper Other: _____			
Was sufficient ice used (if appropriate)?	NA	YES	NO
Were all bottles sealed in individual plastic bags?		YES	NO
Did all bottles arrive in good condition (unbroken)?		YES	NO
Were all bottle labels complete and legible?		YES	NO
Did the number of containers listed on COC match with the number of containers received?		YES	NO
Did all bottle labels and tags agree with custody papers?		YES	NO
Were all bottles used correct for the requested analyses?		YES	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)	NA	YES	NO
Were all VOC vials free of air bubbles?	NA	YES	NO
Was sufficient amount of sample sent in each bottle?		YES	NO
Date VOC Trip Blank was made at ARI.	NA		

Was Sample Split by ARI: NA YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JM Date: 4/10/14 Time: 1053

***** Notify Project Manager of discrepancies or concerns *****

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

No COC received. Cooler #2 for samples received 4/8/14 @ 1050. Shipping (orig) lost, UPS called 4/9/14 and we determined these were the missing Apex samples.

By: AV Date: 4/10/14

Small → "sm" (< 2 mm)	
Peabubbles → "pb" (2 to < 4 mm)	
Large → "lg" (4 to < 6 mm)	
Headspace → "hs" (> 6 mm)	

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: APEX

Project Name: AUD003

COC No(s): _____ (NA)

Delivered by: Fed-Ex (UPS) Courier Hand Delivered Other: _____

Assigned ARI Job No: YG02

Tracking No: 1ZX472061391869547 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry): 1.7

Time: _____

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 12241222

Cooler Accepted by: JM Date: 4/8/14 Time: 1050

Complete custody forms and attach all shipping documents

Log-In Phase:

Was a temperature blank included in the cooler?		(YES)	NO
What kind of packing material was used?	Bubble Wrap (Wet Ice) Gel Packs Baggies Foam Block Paper Other		
Was sufficient ice used (if appropriate)?	NA	(YES)	NO
Were all bottles sealed in individual plastic bags?		(YES)	~~NO~~ JM
Did all bottles arrive in good condition (unbroken)?		(YES)	NO
Were all bottle labels complete and legible?		(YES)	NO
Did the number of containers listed on COC match with the number of containers received?		(YES) JM	NO
Did all bottle labels and tags agree with custody papers?		(YES)	NO
Were all bottles used correct for the requested analyses?		(YES)	NO
Do any of the analyses (bottles) require preservation? (attach preservation sheet, excluding VOCs)...	(NA)	YES	NO
Were all VOC vials free of air bubbles?	(NA)	YES	NO
Was sufficient amount of sample sent in each bottle?		(YES)	NO
Date VOC Trip Blank was made at ARI...	(NA)		

Was Sample Split by ARI: (NA) YES Date/Time: _____ Equipment: _____ Split by: _____

Samples Logged by: JM Date: 4/10/14 Time: 1053

*** Notify Project Manager of discrepancies or concerns ***

Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

Only one of two coolers was received. Second cooler received 4/10/14

By: JM Date: 4/10/14

Small Air Bubbles ~2mm	Peabubbles 2-4 mm	LARGE Air Bubbles > 4 mm
• • •	• • •	● ● ●

Small → "sm"	(< 2 mm)
Peabubbles → "pb"	(2 to < 4 mm)
Large → "lg"	(4 to < 6 mm)
Headspace → "hs"	(> 6 mm)

Samples received on 4/8/14	**# of 1 Liter Amber Glass Bottles**
B20-SP1-20140328	1
B21-SWP6-20140328	2

Samples received on 4/10/14	
B21-SWP3-20140328	2
B21-SWP2-20140328	2
B21-SWP1-20140328	2
B20-SP1-20140328	1

YG02 - 00005

Case Narrative

Client: Apex Laboratories
Project: A4D0003
Job No.: YG02

Sample Receipt

Analytical Resources, Inc. (ARI) accepted four water samples on April 8, 2014 under ARI job YG02. The cooler temperatures measured by IR thermometer following ARI SOP were 1.7 and 4.0°C. For further details regarding sample receipt, please refer to the Cooler Receipt Form.

The samples were analyzed for parameters as requested on the COC.

Butyltins by SW8270-SIM

The samples were extracted and analyzed outside the recommended holding time.

There were no other irregularities with this analysis.

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: YG02
Client: Apex Labs
Project Event: N/A
Project Name: A4D0003

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	B21-SWP1-20140328	YG02A	14-6673	Water	03/28/14 11:30	04/08/14 10:50
2.	B21-SWP2-20140328	YG02B	14-6674	Water	03/28/14 07:15	04/08/14 10:50
3.	B21-SWP3-20140328	YG02C	14-6675	Water	03/28/14 08:05	04/08/14 10:50
4.	B21-SWP6-20140328	YG02D	14-6676	Water	03/28/14 10:15	04/08/14 10:50

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by SW8270D-SIM GC/MS **Sample ID: B21-SWP1-20140328**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: YG02A
LIMS ID: 14-6673
Matrix: Water
Data Release Authorized:
Reported: 04/22/14

QC Report No: YG02-Apex Labs
Project: A4D0003
Event: NA
Date Sampled: 03/28/14
Date Received: 04/08/14

Date Extracted: 04/11/14
Date Analyzed: 04/19/14 12:46
Instrument/Analyst: NT12/VTS

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	76.2%
Tripentyl Tin Chloride	72.9%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by SW8270D-SIM GC/MS **Sample ID: B21-SWP2-20140328**
Extraction Method: SW3510C **SAMPLE**

Lab Sample ID: YG02B
LIMS ID: 14-6674
Matrix: Water
Data Release Authorized:
Reported: 04/22/14

QC Report No: YG02-Apex Labs
Project: A4D0003
Event: NA
Date Sampled: 03/28/14
Date Received: 04/08/14

Date Extracted: 04/11/14
Date Analyzed: 04/19/14 13:25
Instrument/Analyst: NT12/VTS

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	77.4%
Tripentyl Tin Chloride	79.3%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by SW8270D-SIM GC/MS
Extraction Method: SW3510C
Page 1 of 1

Sample ID: B21-SWP3-20140328
SAMPLE

Lab Sample ID: YG02C
LIMS ID: 14-6675
Matrix: Water
Data Release Authorized:
Reported: 04/22/14

QC Report No: YG02-Apex Labs
Project: A4D0003
Event: NA
Date Sampled: 03/28/14
Date Received: 04/08/14

Date Extracted: 04/11/14
Date Analyzed: 04/19/14 13:39
Instrument/Analyst: NT12/VTS

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	68.6%
Tripentyl Tin Chloride	63.6%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by SW8270D-SIM GC/MS
Extraction Method: SW3510C
Page 1 of 1

Sample ID: B21-SWP6-20140328
SAMPLE

Lab Sample ID: YG02D
LIMS ID: 14-6676
Matrix: Water
Data Release Authorized:
Reported: 04/22/14

QC Report No: YG02-Apex Labs
Project: A4D0003
Event: NA
Date Sampled: 03/28/14
Date Received: 04/08/14

Date Extracted: 04/11/14
Date Analyzed: 04/19/14 13:52
Instrument/Analyst: NT12/VTS

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	71.3%
Tripentyl Tin Chloride	68.5%

ANALYTICAL RESOURCES INCORPORATED

TBT SURROGATE RECOVERY SUMMARY

Matrix: Water

QC Report No: YG02-Apex Labs
Project: A4D0003
Event: NA

Client ID	TPRT	TPNT	TOT OUT
MB-041114	66.4%	66.8%	0
LCS-041114	79.3%	76.6%	0
LCSD-041114	68.6%	72.8%	0
B21-SWP1-20140328	76.2%	72.9%	0
B21-SWP2-20140328	77.4%	79.3%	0
B21-SWP3-20140328	68.6%	63.6%	0
B21-SWP6-20140328	71.3%	68.5%	0

	QC LIMITS
(TPRT) = Tripropyl Tin Chloride	(30-120)
(TPNT) = Tripentyl Tin Chloride	(45-120)

Prep Method: SW3510C
Analytical Method: TBT (Hexyl) 8270D-SIM
Log Number Range: 14-6673 to 14-6676

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by SW8270D-SIM GC/MS **Sample ID: LCS-041114**
 LAB CONTROL SAMPLE

Lab Sample ID: LCS-041114
LIMS ID: 14-6673
Matrix: Water
Data Release Authorized:
Reported: 04/22/14

QC Report No: YG02-Apex Labs
Project: A4D0003
Date Sampled: NA
Date Received: NA

Date Extracted LCS: 04/11/14

Date Analyzed LCS: 04/19/14 12:05
LCSD: 04/19/14 12:18
Instrument/Analyst LCS: NT12/VTS
LCSD: NT12/VTS

Sample Amount LCS: 100 mL
LCSD: 100 mL
Final Extract Volume LCS: 0.50 mL
LCSD: 0.50 mL
Dilution Factor LCS: 1.00
LCSD: 1.00
Alumina Cleanup: Yes

Analyte	LCS	Spike Added-LCS	LCS Recovery	LCSD	Spike Added-LCSD	LCSD Recovery	RPD
Tributyltin Ion	2.12	2.23	95.1%	2.00	2.23	89.7%	5.8%
Dibutyltin Ion	1.51	1.92	78.6%	1.34	1.92	69.8%	11.9%
Butyltin Ion	0.33	1.56	21.2%	0.41	1.56	26.3%	21.6%

Reported in µg/L (ppb)

RPD calculated using sample concentrations per SW846.

TBT Surrogate Recovery

	LCS	LCSD
Tripropyl Tin Chloride	79.3%	68.6%
Tripentyl Tin Chloride	76.6%	72.8%

ANALYTICAL RESOURCES INCORPORATED

ORGANICS ANALYSIS DATA SHEET
Tributyl Tins by SW8270D-SIM GC/MS **Sample ID: MB-041114**
Extraction Method: SW3510C **METHOD BLANK**

Lab Sample ID: MB-041114
LIMS ID: 14-6673
Matrix: Water
Data Release Authorized:
Reported: 04/22/14

QC Report No: YG02-Apex Labs
Project: A4D0003
Event: NA
Date Sampled: NA
Date Received: NA

Date Extracted: 04/11/14
Date Analyzed: 04/19/14 11:02
Instrument/Analyst: NT12/VTS

Sample Amount: 100 mL
Final Extract Volume: 0.50 mL
Dilution Factor: 1.00
Alumina Cleanup: Yes

CAS Number	Analyte	DL	LOQ	Result	Q
36643-28-4	Tributyltin Ion	0.043	0.19	< 0.19	U
14488-53-0	Dibutyltin Ion	0.096	0.29	< 0.29	U
78763-54-9	Butyltin Ion	0.11	0.20	< 0.20	U

Reported in µg/L (ppb)

TBT Surrogate Recovery

Tripropyl Tin Chloride	66.4%
Tripentyl Tin Chloride	66.8%

Dust Monitoring Results, July and August 2014 Sampling Events,
Burgard Industrial Park – SSI Area, Portland, Oregon
Bridgewater Group, 2014

BRIDGEWATER GROUP, INC.

Dust Monitoring Results
July and August 2014 Sampling Events
Burgard Industrial Park - SSI Area
Portland, Oregon

TO: Jim Orr/Oregon DEQ

CC: Mat Cusma/Schnitzer
Mark Bartee/Schnitzer

FROM: Ross Rieke/Bridgewater Group

DATE: September 19, 2014

This memorandum presents the results of the July 2014 and August 2014 dust monitoring events performed at the Schnitzer Steel (SSI) area of the Burgard Industrial Park (BIP) in Portland, Oregon (Figure 1, Figure 2). The dust monitoring was performed in accordance with the May 7, 2014 *Dust Monitoring Plan* (Dust Monitoring Plan), required as a Source Control Evaluation (SCE) effort pursuant to the terms of the June 13, 2000 *Voluntary Agreement for Remedial Investigation and Cleanup Measures* between Schnitzer and DEQ. The purpose of the dust monitoring program is to support the evaluation of potential impacts to river and other offsite areas from airborne particulates. To accomplish this task, the Dust Monitoring Plan details the procedures to compare the dust levels at the perimeter of the SSI area relative to the dust levels at dust source areas within the SSI area and, as a result, assess the effectiveness of SSI dust control BMPs.

Dust Monitoring Methodology

The dust monitoring was performed using DustScan DS100 passive, directional dust gauges (Appendix A). Twelve monitoring pole stations were established within, around, and distant from the site (Figure 3). Photographs of the monitoring stations are provided in Appendix B. The approximate 3 ½-inch diameter by approximately 13-inches long cylindrical, sticky paper-covered gauges were placed on the station poles and then removed seven days later. The gauge cylinders were taken into an enclosed office where the sticky paper was removed, mounted and sealed on transparent cover sheets, and shipped to the analytical laboratory. The analytical laboratory reports are provided in Appendix C.

The duration of each dust monitoring event was seven days, in accordance with the Dust Monitoring Plan. The July 2014 monitoring event was performed July 18, 2014 to July 25, 2014 with the gauges being installed/removed between 9 AM and 11 AM on the start and end days. The August 2014 monitoring event was performed August 12, 2014 to August 19, 2014 with the gauges being installed/removed between 1 PM and 3 PM on the start and end days[1].

[1] The times of installation and removal were selected solely to meet personnel scheduling demands and are not expected to have had a material impact on the dust monitoring results.

Dust Monitoring Conditions

Weather Conditions

July 2014 Monitoring Event

Weather conditions during the July 2014 event were monitored and recorded using the Weather Underground Station KORPORTL127[2] located in the Rivergate area about two miles north northeast from the SSI site (for wind and temperature) and the City of Portland HYDRA network shipyard rain gauge located adjacent to the site at 8900 N. Sever Road (for rainfall).

Figure 4 shows the wind rose during the July 2014 event. As shown on the wind rose, wind speeds were light to moderate (generally less than 10 miles per hour) and the predominant wind direction was from the west northwest. Such wind conditions are typical for the summer months in the Portland area[3].

About 0.44 inches of rain occurred during the July 2014 event between July 22 and July 24. The last precipitation prior to the monitoring event was 0.03 inches occurring on July 13. Temperature during the July 2014 event ranged from a high of 84.2 degrees on July 19 and a low of 54.9 degrees on July 25. Humidity for the July 2014 event ranged from a high of 86 percent on July 22 to a low of 35 percent on July 21. Figure 5 presents the daily temperature, humidity, and rainfall data for the July monitoring event.

August 2014 Monitoring Event

Weather conditions during the August 2014 event were monitored and recorded using the weather station established at the SSI site in early August 2014 (for wind), the Weather Underground Station KORPORTL127 (for temperature), and the City of Portland HYDRA network shipyard rain gauge (for rainfall).

Figure 5 shows the wind rose during the August 2014 event. As shown on the wind rose, the winds were generally light (less than 5 miles per hour) and the predominant wind direction was from the northwest. These wind conditions are common during the summer months in Portland.

About 0.02 inches of rain occurred during the August 2014 event on August 13. The last precipitation prior to the monitoring event was 0.01 inches occurring on July 24. Temperature during the August 2014 event ranged from a high of 86.7 degrees on August 18 and a low of 60.6 degrees on August 14. Humidity for the August 2014 event ranged from a high of 87 percent on August 12 and August 13 to a low of 41 percent on August 17. Figure 6 presents the daily temperature, humidity, and rainfall data for the August monitoring event.

Operations During July and August Monitoring Events

The site operations were generally the same for both monitoring events and included normal scrap yard activities (scrap receiving, shredder, processed ferrous steel management, and paved and unpaved roadway traffic). Ship loading (of processed ferrous steel) and barge unloading (of unprocessed scrap metal) also occurred during the July 2014 event. Ship loading or barge unloading did not occur during the August 2014 monitoring event. Dust generating activities occurring in the area around the SSI site included vehicle traffic on Port of Portland Terminal 4, Northwest Pipe and Portland Container sites, vehicle traffic on Burgard Way and Burgard Road, overpass construction activities on Burgard Road, and pavement sweeping (without vacuum or watering) on the Lampros Steel site.

[2] This is the nearest publicly accessible station to the site. In early August, an onsite weather station was installed which will be used to provide wind and temperature data in the future.

[3] Western Regional Climate Center

Dust Monitoring Results

The dust monitoring analytical laboratory reports (Appendix C) present the dust monitoring data in two metrics: Absolute Area Coverage (AAC) and Effective Area Coverage (EAC). AAC values (expressed as a percentage) represent the amount of dust captured on the monitoring device and provide a direction-specific measure of the overall amount of dust flux over the monitoring period at the monitoring station. As such, the AAC provides the appropriate measurement to support the objective of the dust monitoring program. EAC values pertain to the color or opacity of the dust and therefore may provide an indication of the visual impact of dust generating activities, and possibly qualitative information on the presence of different sources of dust, but otherwise are not relevant to the dust monitoring objective.

Figure 8 and Figure 9 present the directional AAC values for the July 2014 and August 2014 monitoring events, respectively. Table 1 presents the maximum and average (around the circumference) AAC values for each station. Figure 10 presents as bar chart showing the relative AAC values for the source, perimeter[4], and background stations. Tables of directional AAC values are presented for each station in the analytical laboratory reports provided in Appendix C.

The AAC values presented in the figures, table, and Appendix C are the result of a computer-based, optical analytical process that measures the relative amount of dust captured on the sticky paper placed on the monitoring cylinder. The AAC values are useful to compare with other AAC values in assessing the qualitative change in dust levels between monitoring stations, as well as the predominant direction(s) of dust flux at each station. AAC values do not represent any standard particulate measurement such as PM10 or dust concentration (e.g., mg/m^3) and a particular AAC value does not represent either “high” or “low” dust levels (other than as compared to other monitoring stations).

The results of the July 2014 and August 2014 dust monitoring events indicate the following:

- As noted on Table 1, there is a 70 to 80 percent reduction in dust flux (as measured by the average AAC) at the SSI site perimeter relative to the dust flux at the SSI dust sources. For individual perimeter stations, the reduction was greater than 65 percent at all stations except Station P1 where a 59 percent reduction was noted during the July event and a 39 percent reduction was noted during the August event. Dust sources in the Station P1 area are likely associated with truck and automobile traffic entering and exiting the facility, and not associated with scrap metal management. An AAC reduction of greater than 85 percent was noted during both events at Station P4 and Station P7. Given that all of the source stations became saturated (i.e., reached 100 percent AAC) over significant portions of their surfaces during both events (and Station S1 became saturated around its entire circumference over the July event)[5], the percent dust reduction at the site perimeter is likely greater than those indicated on Table 1 and described above.
- The background stations (A1 and P8) indicate that non-SSI dust sources are present in the area around the SSI site and likely contribute to the dust levels measured on the SSI site and at the perimeter stations. As noted on Table 1, the average background dust flux was 108 percent of the average source dust flux in the July 2014 monitoring event and 123 percent of the average source dust flux in the August 2014 event. In other words, the dust

[4] Based on the relatively high AAC values, the dust flux direction indicated by the “dust rose” (from the north, see Figures 6 and 7), and the lack of SSI sources in the area, the dust levels at station P8 are clearly impacted by offsite activities, are not considered representative of dust generated from the SSI activities and are not included in comparison of perimeter and source dust measurements. The dust levels measured at station P8 are included in the discussion of background dust level (i.e., along with station A1 measurements).

[5] See discussion of recommended reduced monitoring duration in the following section of this memorandum.

fluxes at the background stations were consistently greater than the dust flux at the stations representative of dust emissions from targeted SSI activities.

- The directional dust fluxes at several perimeter stations indicate dust from offsite, non-SSI sources were contributing to the dust flux at the SSI perimeter during the August 2014 monitoring event. As noted on Figure 7, stations P4, P5, P6, and P7 noted predominant dust flux directions from offsite directions during the August 2014 monitoring event.

Recommended Adjustments to Dust Monitoring Program

The dust monitoring program being performed at the Burgard SSI site is based on a relatively new methodology, equipment, and analysis and the first two monitoring events suggest some adjustments to the program are appropriate.

Reduce Monitoring Event Duration

As noted in Table 1, all of the source stations and representative background stations (including Station P8) had some directional AAC values of 100 percent indicating that, for the purposes of the laboratory analysis, the sticky paper had become saturated. One-hundred percent AAC values cause an uncertainty in the value to be used to compare to other stations. For example, if dust was present in the sources areas at levels greater than those corresponding to a 100 percent AAC measurement, the actual percent reductions at the perimeter stations would be greater than those calculated using the 100 percent value. Likewise, a 100 percent reading at source and/or background stations reduces the precision of any comparison between source and background dust flux. The presence of 100 percent AAC values at the source stations is not necessarily surprising given that the DustScan system is primarily designed to monitor dust at site perimeters and not immediately at dust sources.

Based on the above, we recommend that the monitoring period be reduced from seven days to four days for the remaining two events, in order to reduce the occurrence of 100 percent readings at source stations. The reduced monitoring event duration will likely provide increased precision in the comparison of the source, perimeter, and background dust flux and better support the objectives of the dust monitoring program.

Increase Frequency of Wind Measurements at SSI Weather Station

The SSI weather monitoring station was established in early August 2014 and the wind rose noted during the August 2014 monitoring event is presented in Figure 5. The weather station collected data on hourly intervals. This relatively large data collection interval contributed to a reduced precision in the wind rose. Weather information will be collected at 10 minute intervals during subsequent dust monitoring events.

Attachments:

Table 1 – Dust Monitoring Data
Figure 1 – Site Location Map
Figure 2 – Site Plan, Burgard Industrial Park
Figure 3 – Dust Monitoring Station Locations
Figure 4 – Wind Rose, July 2014 Dust Monitoring Event
Figure 5 – Daily Temperature, Humidity, and Rainfall, July 2014 Dust Monitoring Event
Figure 6 - Wind Rose, August 2014 Dust Monitoring Event
Figure 7 - Daily Temperature, Humidity, and Rainfall, August 2014 Dust Monitoring Event
Figure 8 – AAC Values, July 2014 Dust Monitoring Event

Figure 9 – AAC Values, August 2014 Dust Monitoring Event
Figure 10 – Average AAC Percentages
Appendix A – DustScan Manufacturer Literature
Appendix B - Dust Monitoring Station Photographs
Appendix C - Analytical Laboratory Reports

Table

Table 1
Dust Monitoring Data
Burgard Industrial Park - SSI

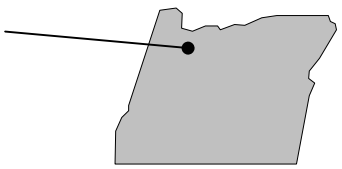
		AAC (Percent)[1]			
		Jul-14		Aug-14	
Station	Location	Average	Max[2]	Average	Max[2]
S1	Scrap pile construction/deconstruction	100.0	100.0	90.6	100.0
S2	Dock activities/shear (source)	64.5	100.0	65.0	100.0
S3	Shredder residue loading (source)	72.2	100.0	59.3	100.0
P1	South perimeter	32.6	61.9	50.1	99.3
P2	Southwest perimeter	9.4	23.3	24.6	99.7
P3	West perimeter	18.5	62.3	13.4	62.2
P4	Northwest perimeter	7.4	11.9	10.1	45.5
P5	North perimeter	24.2	39.3	19.5	42.9
P6	Northeast perimeter	24.1	61.8	23.7	51.9
P7	Northeast perimeter	9.5	27.3	9.1	20.9
P8	Northeast background	95.6	100.0	96.5	100.0
A1	West background	74.9	100.0	79.7	100.0
Average All Stations		44.4	65.7	45.1	76.9
Average Source		78.9	100.0	71.6	100.0
Average Perimeter		18.0	41.1	21.5	60.3
Average Background		85.3	100.0	88.1	100.0
Percent Reduction From Average Source to Average Perimeter		77%	59%	70%	40%
Average Background as Percent of Average Source		108%	100%	123%	100%

1 - See text, Appendix A, and Appendix C for description of Absolute Area Coverage (AAC).

2 - Given the presence of 100% values, calculations of averages, reductions, and comparisons using maximum AACs at bottom of table are approximate.

Figures

Portland, Oregon



N

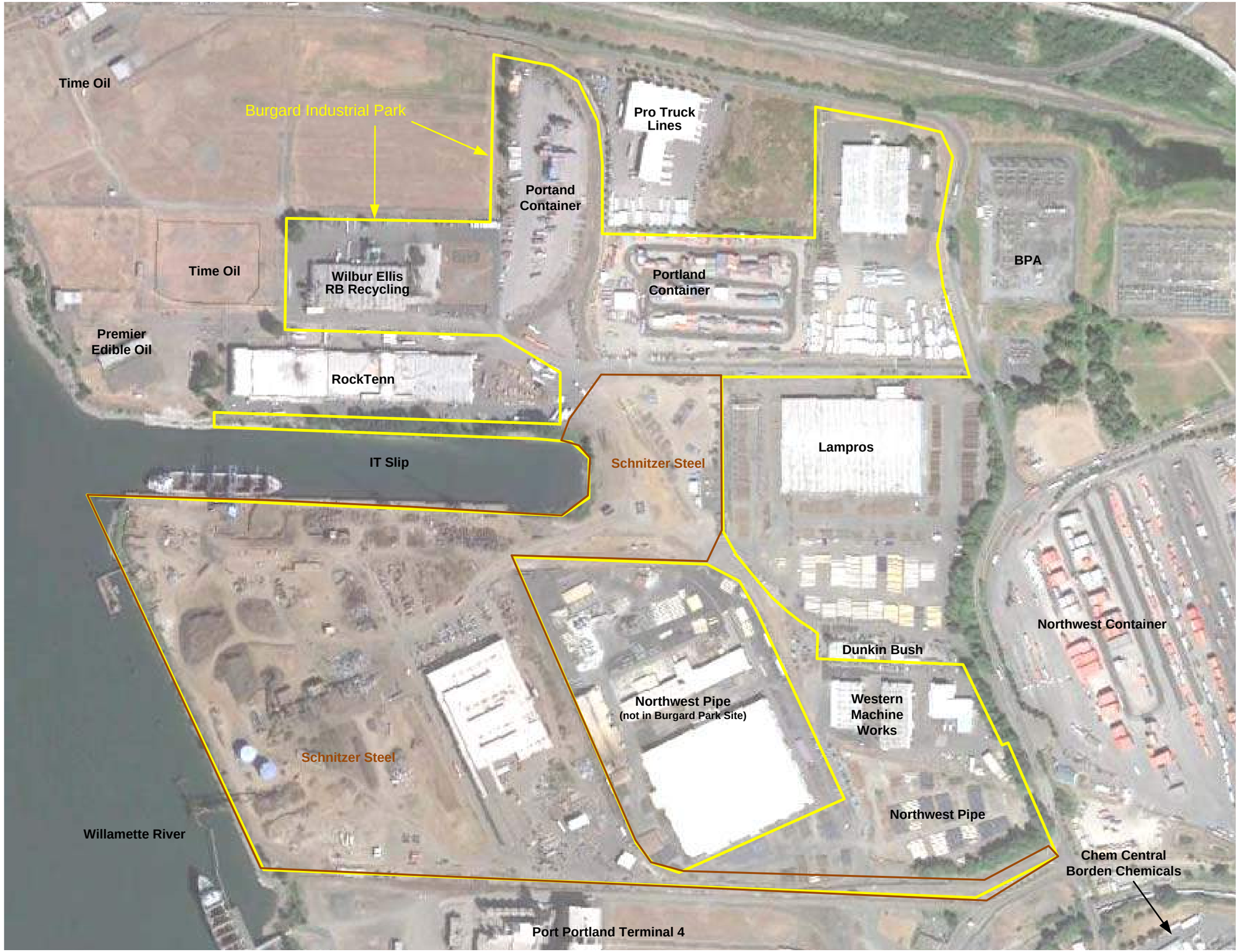
Approximate Scale

5000 feet

Figure 1
Site Location Map
Burgard Industrial Park

BRIDGEWATER GROUP, INC.

Base photograph August 2012



Base Photograph August 2012

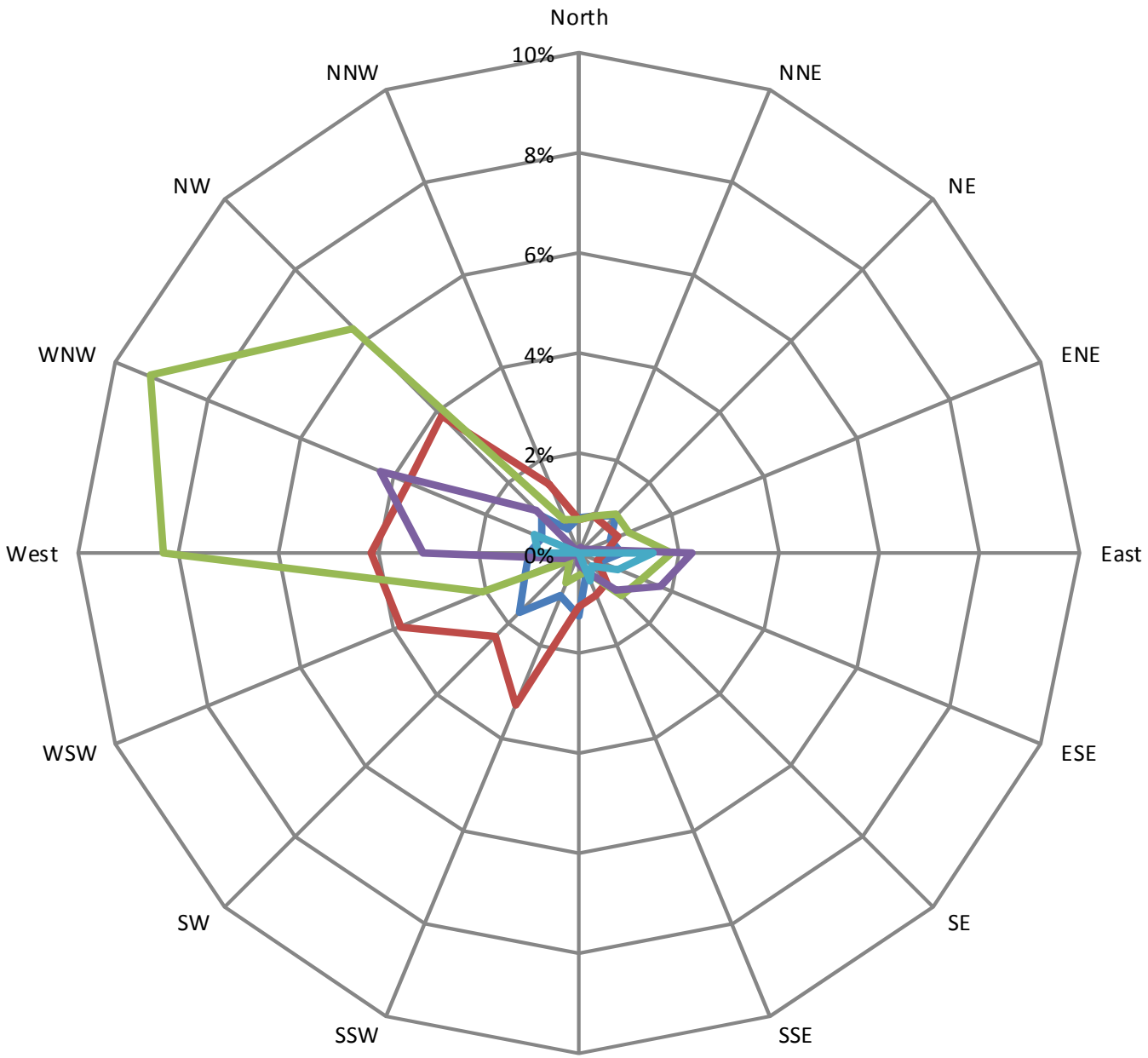
Figure 2
Site Plan
Burgard Industrial Park
Portland, Oregon

BRIDGEWATER GROUP, INC.

Base photograph August 2012

Figure 3
Dust Monitoring Station Locations
Burgard Industrial Park - SSI
Portland, Oregon

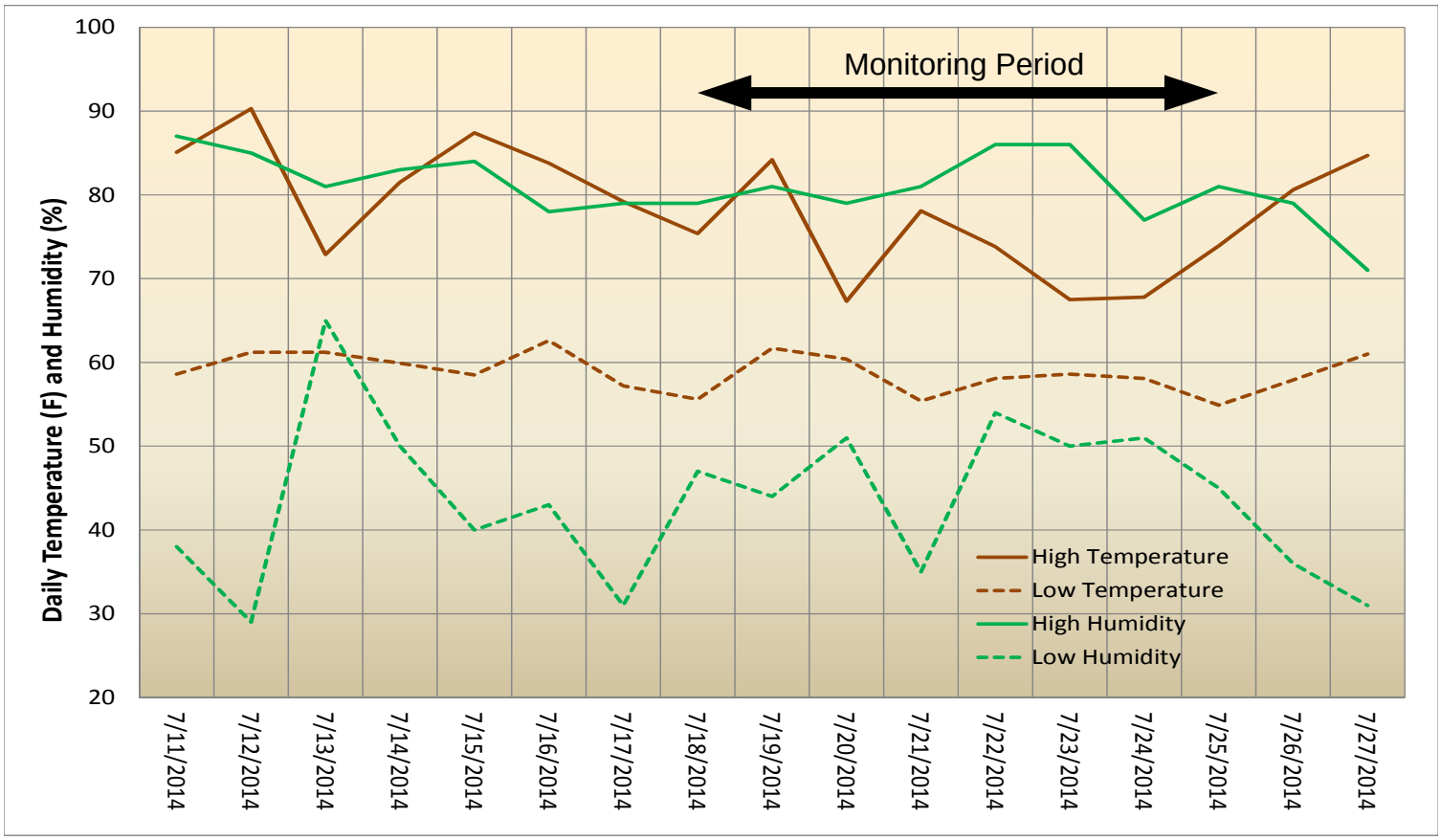
BRIDGEWATER GROUP, INC.



Wind Rose
July 19 - 25, 2014
Rivergate Station
KORPORTL127

Figure 4
Wind Rose
July 2014 Dust Monitoring Event
Burgard Industrial Park - SSI

BRIDGEWATER GROUP, INC.



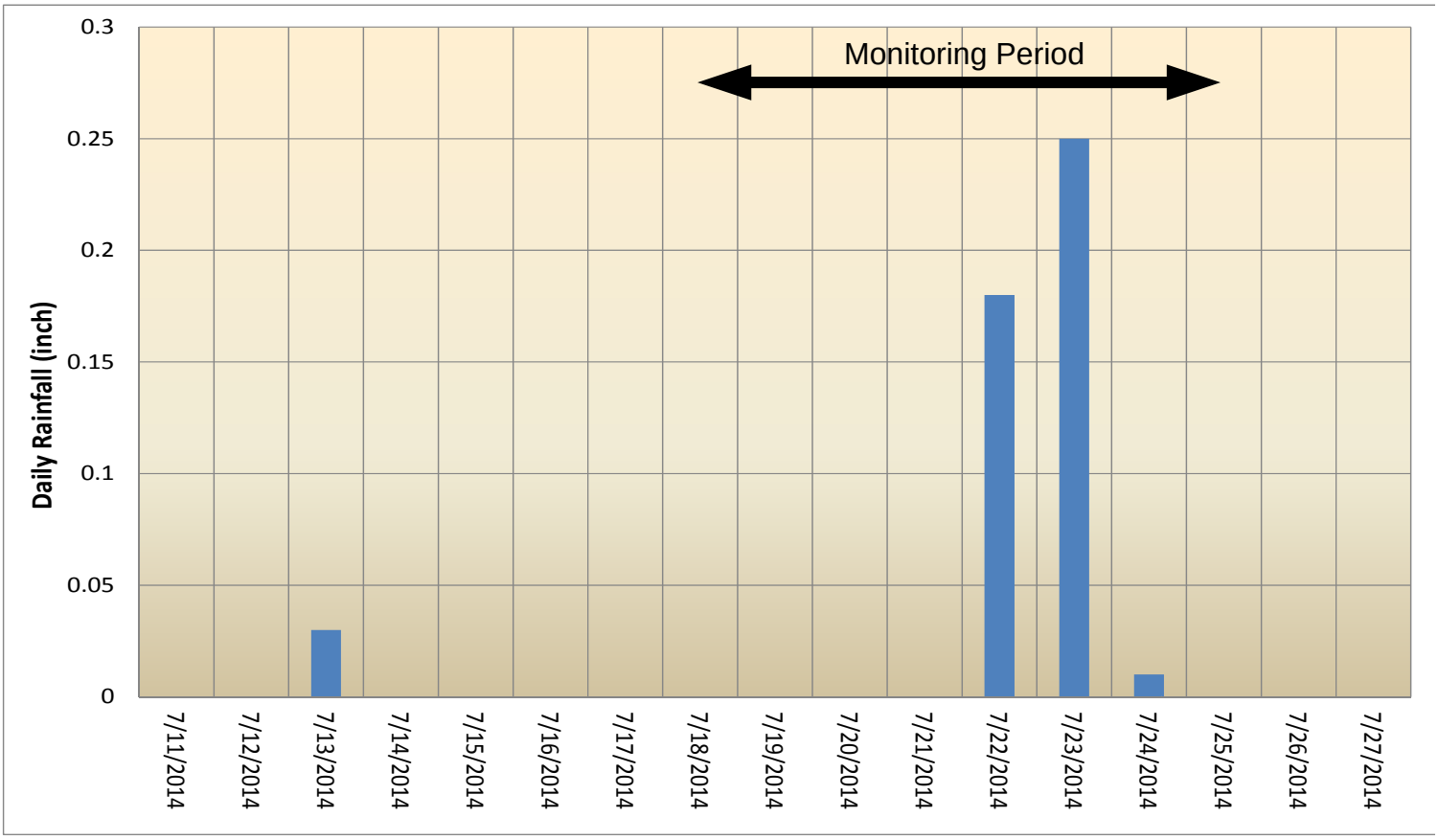
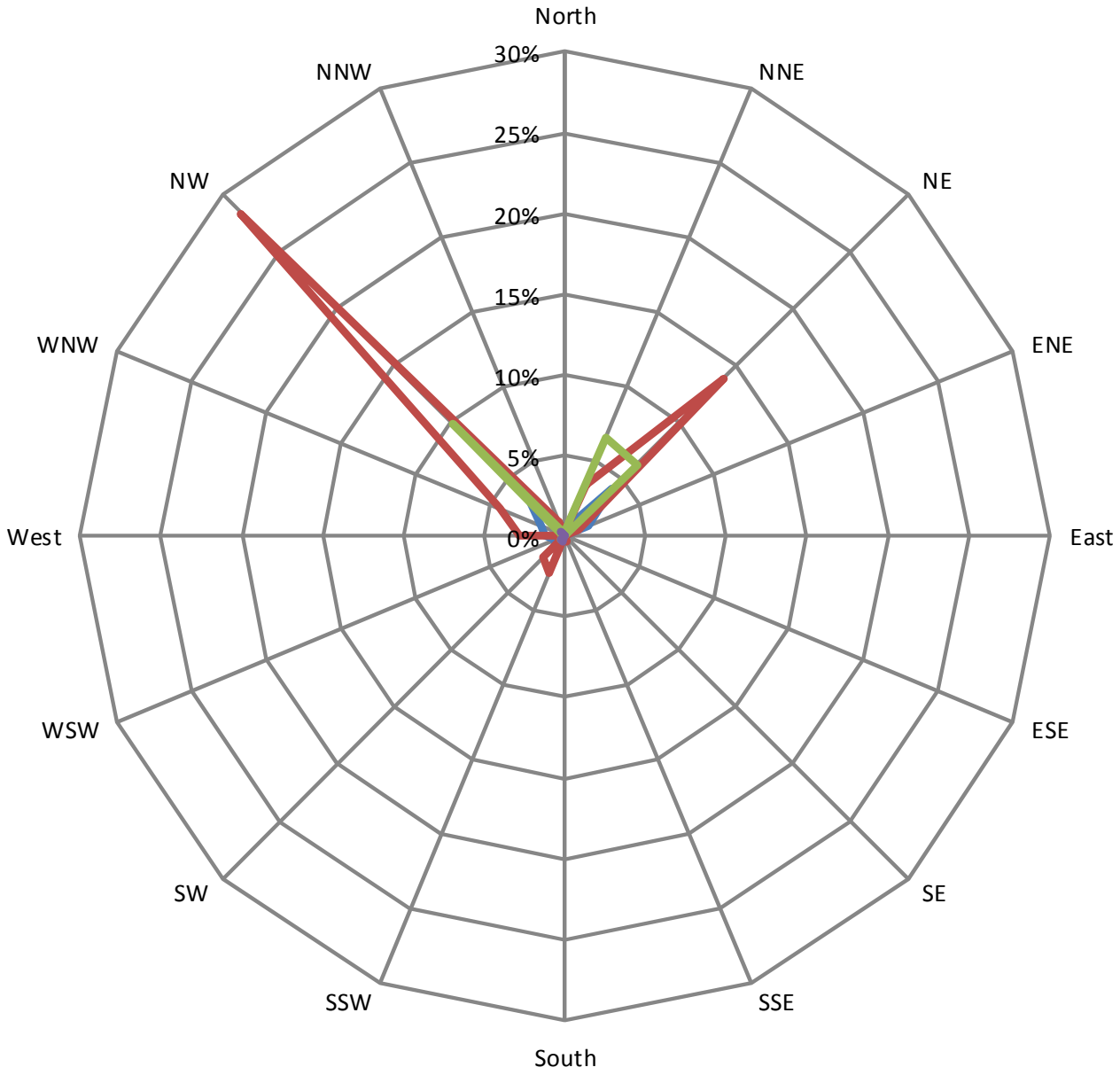


Figure 5
Daily Temperature, Humidity, and Rainfall
July 2014 Dust Monitoring Event
Burgard Industrial Park - SSI

BRIDGEWATER GROUP, INC.



Wind Rose
Aug 12-19, 2014
SSI Burgard Station

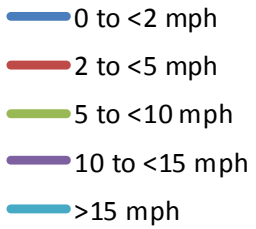
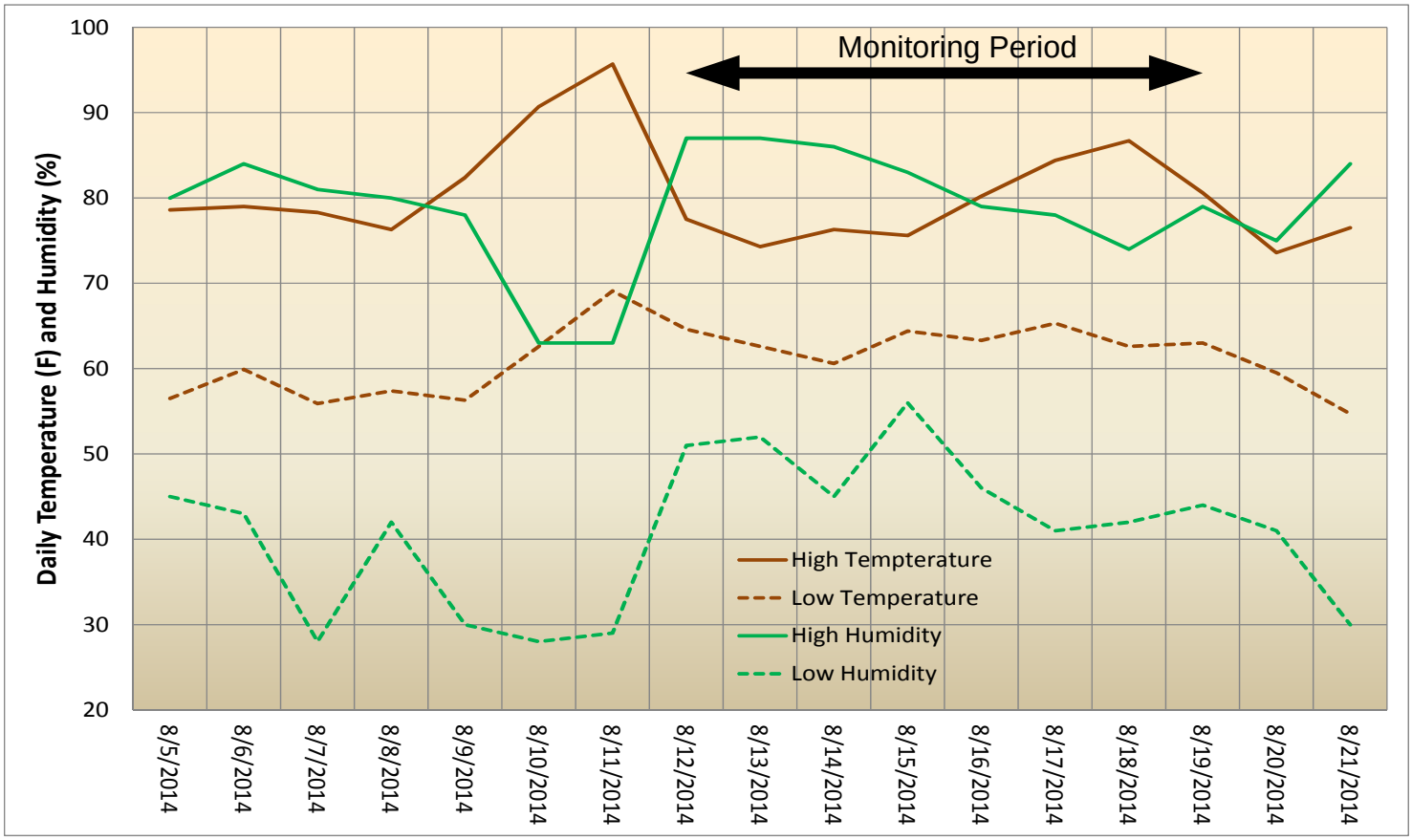


Figure 6
Wind Rose
August 2014 Dust Monitoring Event
Burgard Industrial Park - SSI

BRIDGEWATER GROUP, INC.



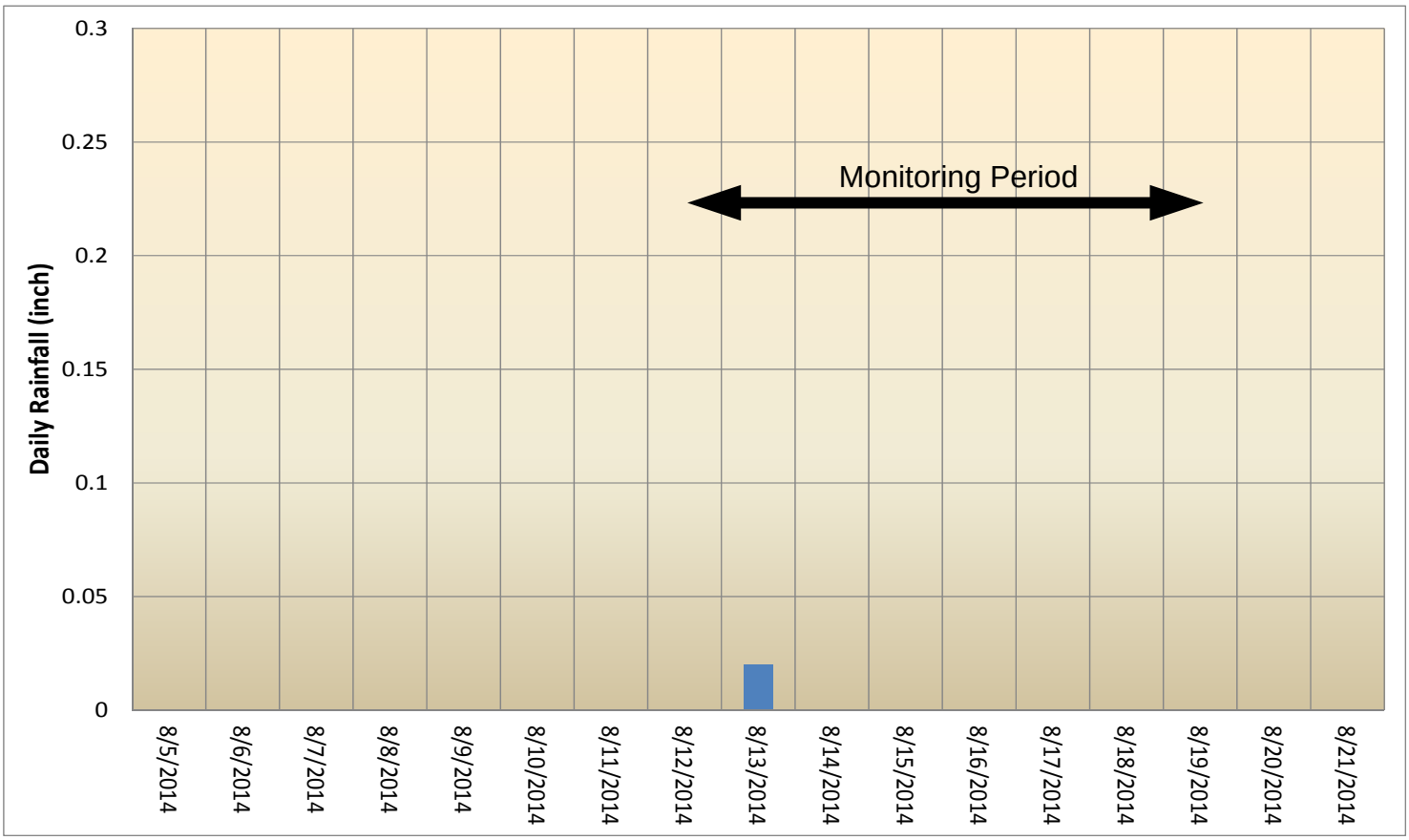
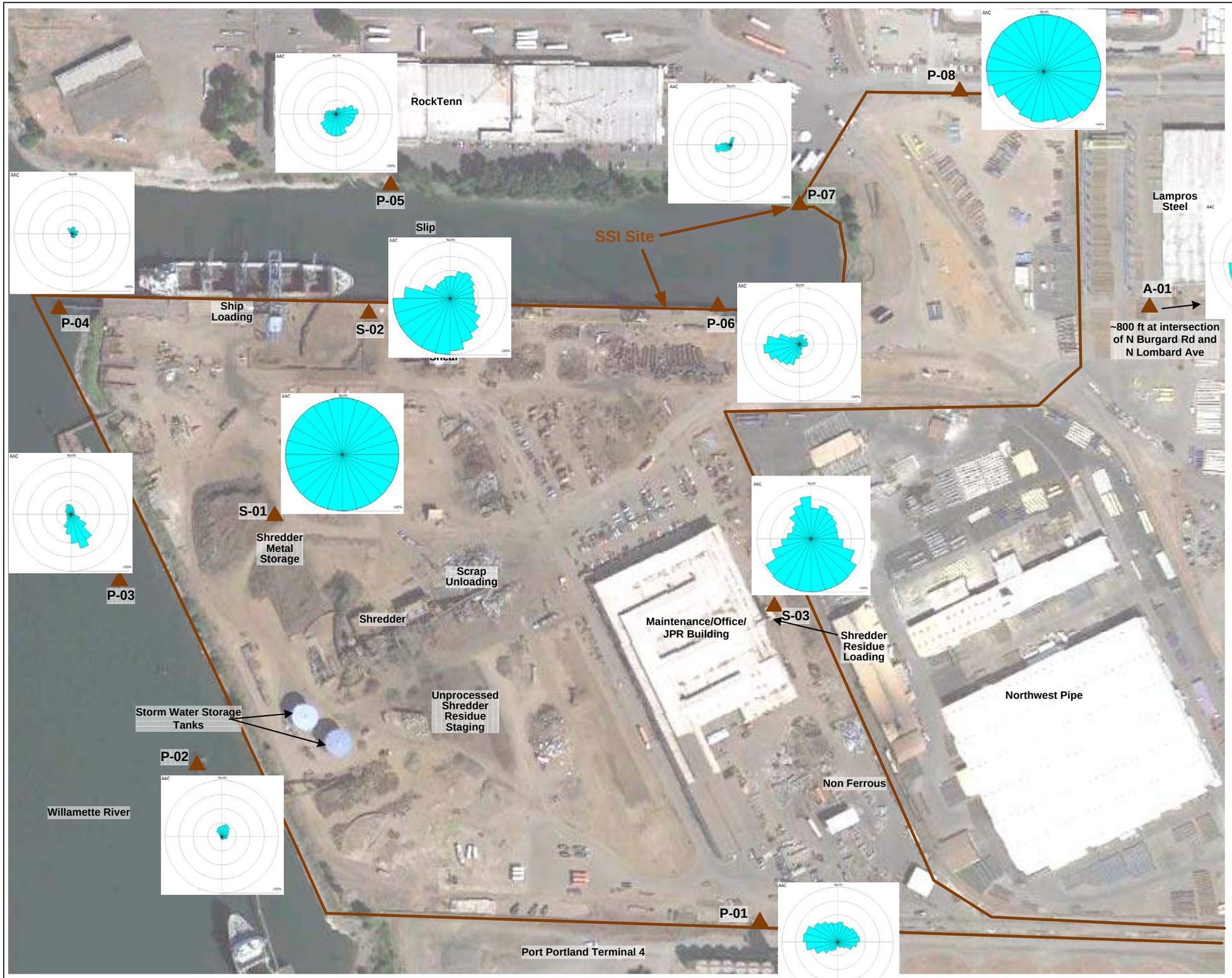


Figure 7
Daily Temperature, Humidity, and Rainfall
August 2014 Dust Monitoring Event
Burgard Industrial Park - SSI

BRIDGEWATER GROUP, INC.



Dust Monitoring Station

See text, Appendix A, and Appendix C for description of Absolute Area Coverage (AAC) parameter

Approximate Scale

250 Feet

Base photograph August 2012

Figure 8
AAC Values
July 2014 Dust Monitoring Event
Burgard Industrial Park - SSI
Portland, Oregon

BRIDGEWATER GROUP, INC.

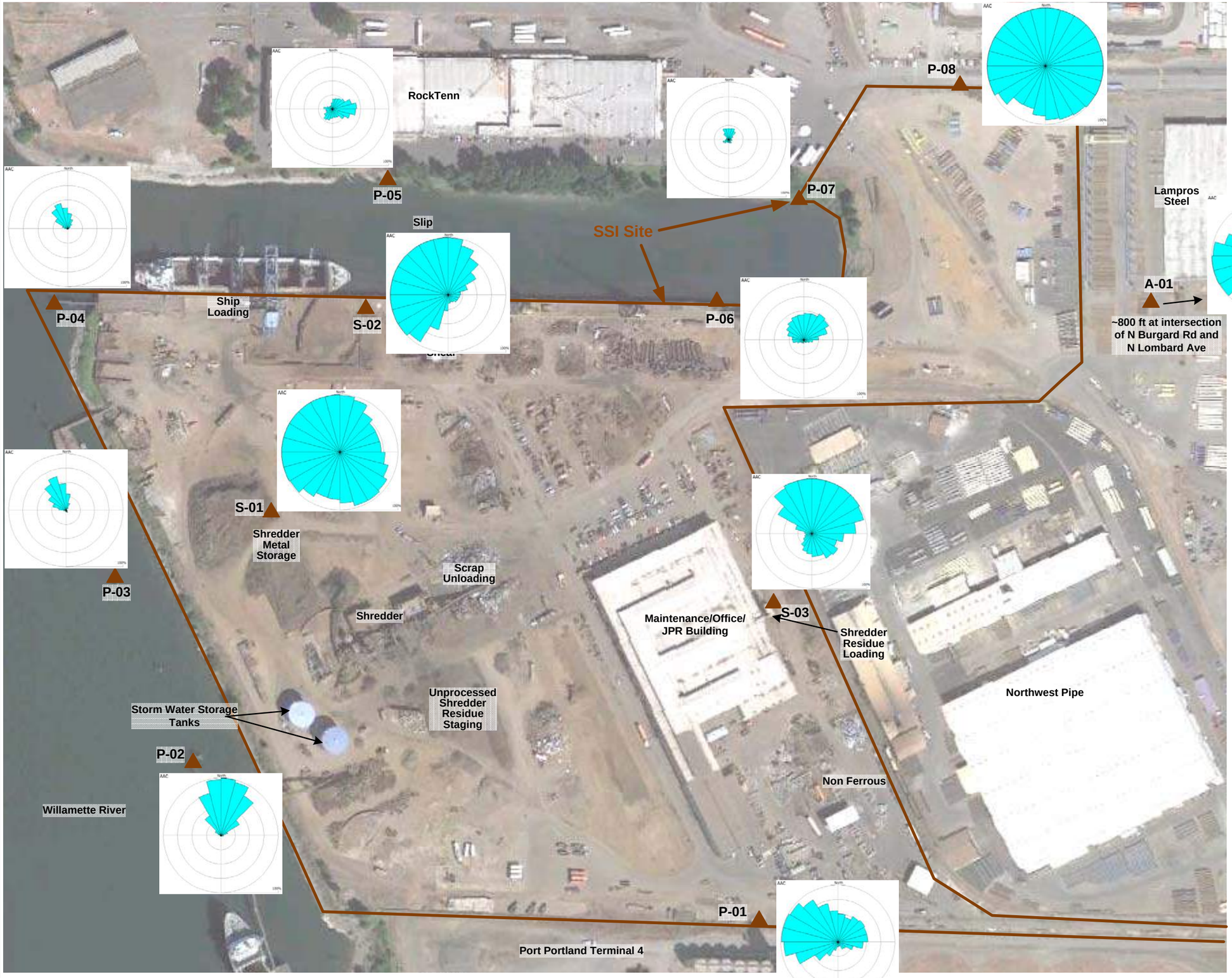


Figure 9
AAC Values
August 2014 Dust Monitoring Event
Burgard Industrial Park - SSI
Portland, Oregon

BRIDGEWATER GROUP, INC.

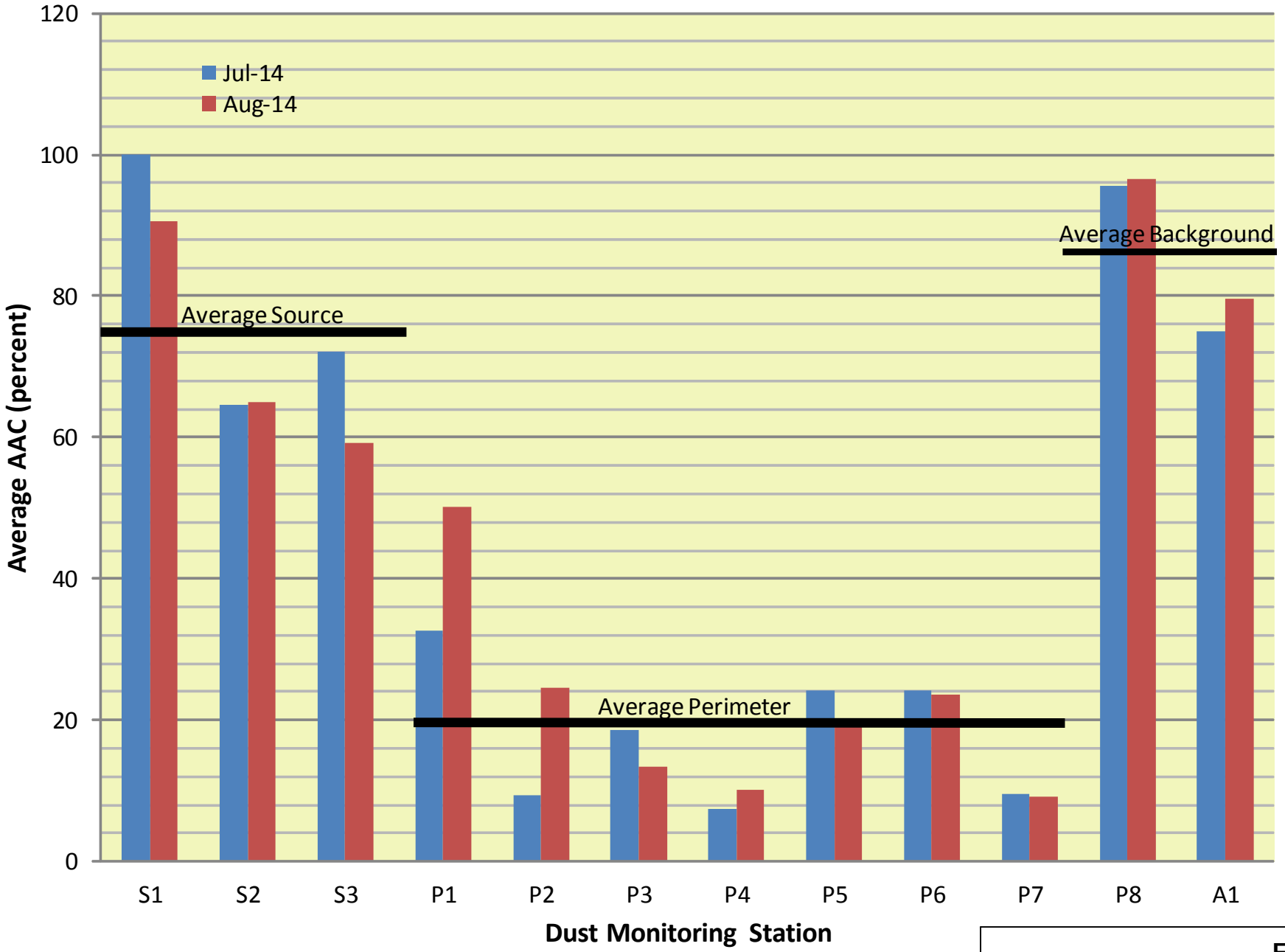


Figure 10
Average AAC Percentages
Burgard Industrial Park - SSI

BRIDGEWATER GROUP, INC.

Appendix A – DustScan Manufacturer Literature

DustScan

Dust Monitoring and Dust Consultancy Services

Guidance Note No. 1: Nuisance Dust Monitoring

This guidance note is based on our experience in dust monitoring and consultancy. It is part of a series aiming to provide a basic guide to dust and dust monitoring.

DustScan Guidance Note No. 1 discusses 'nuisance dust': what it is, its significance and why, when, where and how it can be measured.

What is 'nuisance dust'?

'Dust' is a generic term used to describe particulate matter 1 – 75 µm (micron) in diameter, produced through the crushing and abrasion of materials. It is often considered in two categories:

a) The size fraction up to 10 µm (PM_{10}), which is used as an indicator of local air quality and forms part of National Air Quality Standards. PM_{10} are measured to agreed standards, and usually expressed as a concentration over time: mg/m^3/day.

b) Nuisance dust. There are no standard definitions, or universal monitoring methods, for nuisance dust. It is now becoming accepted that dust above10 µm may be considered nuisance dust. Nuisance dust can be long-term (or chronic) – such as the long-term soiling of paintwork – or short-term (acute) – such as a short-lived dust cloud. Dust nuisance is the *effect* caused by dust.

The effect of dust is a matter of human perception thus is difficult to quantify. How it is perceived varies according to characteristics of the dust such as its colour, contrast and rate of accumulation; and local factors such as socio-economic conditions and employment.

Why does nuisance dust matter?

Dust may be an inevitable consequence of primary industry such as quarrying and mineral processing. Other processes, such as landfill, demolition and agriculture can also lead to dust generation. Some activities, such as quarrying and waste management, are controlled by specific legislation and guidance. Specific guidance has been produced for particular industries, such as Minerals Policy Statement (MPS) 2, Annex 1: Dust (ODPM, 2005) and Technical Guidance Document M17: Monitoring of particulate matter in ambient air around waste facilities (Environment Agency, 2004).

The size range and amount of dust particles generated by different activities vary according to the processes taking place. Weak materials such as coal or chalk can crumble easily and produce dust, but dust may also be generated due to high energy activities such as drilling and blasting, or through the crushing of strongly cohesive materials.

At waste facilities, the types and amounts of dust generated can be very varied thus difficult to predict. Particle behaviour will be highly variable, and there is no simple correlation between particle size and deposition rate.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

DustScan

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Guidance Note No. 1: Nuisance Dust Monitoring

For a site operator, the potential for dust nuisance can be addressed in consents and permits – permissions may have conditions like *"…the operation will not lead to excessive dust nuisance…"* or *"…the operation will not cause pollution beyond the site boundary …"*. MPS 2, Annex 1 states: *"… Where these effects [dust from surface mineral workings] cannot be adequately controlled or mitigated, planning permission should be refused. …"* (ODPM, 2005) and Technical Guidance Document (Monitoring) M17 states that: *"…measures must be taken to minimise nuisance arising from the landfill due to dust…".* (Environment Agency, 2004). So to establish the effectiveness of control measures, monitoring is required.

Consequently how nuisance dust is monitored and assessed can be critical to the smooth running of an operation.

When should nuisance dust be monitored?

Ideally, baseline conditions should be established before an operation commences. This is recommended as the first stage of a Dust Assessment Study at mineral workings, and as part of an air quality monitoring programme before a new waste facility is established. Furthermore, the most appropriate methods to use for baseline testing are the simplest and least expensive.

Dust monitoring should continue during operations both to observe site emissions and ensure compliance with planning conditions. Liaison with local authorities and other regulatory bodies may require longer periods or continual monitoring. Frequency of monitoring should be sufficient to take weather conditions and seasonality into account; and observe changes in site practice through regular operations.

Most low-cost dust monitoring systems are of the periodic, interval-based type. Equipment is typically left out for periods of between a few days and a month. To keep costs down, equipment should be straightforward for site staff to use.

Where should nuisance dust be measured?

Whilst dust nuisance can be seen to be the impact of dust settlement at receptors, it is generally measured on or near site boundaries – i.e. on pathways, at or near sources of dust. Consequently the type and position of dust gauges is of paramount importance – equipment that is best suited to monitoring at receptors might not be appropriate on pathways, and vice versa.

How can nuisance dust be measured?

Nuisance dust is monitored either directionally (dust flux) or non-directionally (dust settlement). Directional gauges sample dust that is suspended in an airstream, such as on the pathway from source to receptor. Non-directional gauges sample dust falling out of an airstream, such as at a receptor.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Guidance Note No. 1:
Nuisance Dust Monitoring

Directional and non-directional nuisance dust samples are quantified in one of two very different ways; either the mass deposition rate or the soiling effect. In the first case, the weight of material collected over a period of time is determined; in the second, changes in the optical properties of a surface (such as loss of gloss, or obscuration) are measured.

There are 'custom and practice' guidelines for dust flux and dust settlement, and for dust mass and dust soiling, although the units used by different methods are generally not interchangeable. Consequently care should be taken to apply the appropriate method for the monitoring requirement. Please refer to Guidance Note No. 3 "Directional Dust Data Assessment" for information on DustScan directional monitoring methodology.

What types of equipment are available for nuisance dust monitoring?

DustScan Ltd supply directional and non-directional dust monitoring equipment to measure both dust mass and dust soiling. Please contact us for more information or visit www.dustscan.co.uk.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Guidance Note No. 2:
Using the DustScan directional dust gauge

This guidance note sets out the methodology behind DustScan directional dust monitoring. It describes the DustScan directional dust monitoring methodology: how, and why, it works; what the results are and what they mean; and where and how to use the gauges.

The directional dust gauge is the principal component of DustScan dust monitoring equipment. DustScan is a ‘passive’ method that does not need a power supply. It samples all sizes of ambient dust and is ideal for nuisance dust monitoring. The directional gauge can be used in any location where dust movement occurs and can help to detect dust pathways and potential nuisance. Directional gauges are used at quarries, landfills, opencast coal sites, demolition and construction sites, remediation works, materials stockpiles and recycling plants.

DustScan gauges are discreet and unobtrusive, and are easy to install and operate. They can be installed and used by most site staff after basic training.

The photos above show the wide range of sites where our gauges can be used

DustScan directional gauges use a special adhesive dust collection slide (‘sticky pad’) which is mounted on a replaceable cylindrical monitoring head. The monitoring head fits onto a 2-metre stand. An alignment peg is provided as the gauge must be aligned to north when it is first installed. An alignment tool can be supplied to facilitate orientation. Correct alignment ensures repeatable dust sampling each time the dust monitoring heads are changed. The monitoring head collects fugitive dust coming from 360° around the gauge.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Guidance Note No. 2:
Using the DustScan directional dust gauge

Once the protective layer is removed the dust monitoring head samples continuously whilst exposed. It is normally left to sample for 1 to 2 weeks. At the end of the sampling period, the head is removed and placed in the protective carrying flask and a replacement head fitted. Used sampling heads are sent to the DustScan offices for computer analysis in the transport boxes provided.

For guidance on the DustDisc dust settlement gauge, the DS100-F combined Frisbee deposition and directional dust gauge and the DS500 combined PM_{10} and directional dust gauge, please refer to other Briefing Notes in this series.

What is the DustScan directional dust gauge?

The DustScan directional dust gauge measures the nuisance effect caused by dust in flux. Dust in flux is particulate matter that is suspended in an airstream on a pathway between its source and its potential receptors. In contrast, settlement gauges such as the DustDisc and the Frisbee deposition gauge measure dust deposition. Deposited dust has settled out of an airstream – wherever it is measured. Consequently dust in flux and deposited dust and are not necessarily the 'same' dust.

How does the DustScan directional gauge work?

DustScan is a 'passive' monitoring method, so it does not require a power supply. With the directional gauge, dust in flux impacts onto the exposed adhesive surface of the sampling cylinder for subsequent computer analysis by us. The sampling cylinder fits onto a monitoring head which is set to north when the gauge is installed, for repeatable directional sampling.

We recommend sampling intervals of 1 - 2 weeks. At the end of each sampling interval the cylinder and sample are sent back to us in the protective container provided. We seal the sample, scan it and measure the directional dusting on it using DustScan software.

Why use the DustScan directional dust gauge?

The directional gauge is ideal for monitoring both dust propagation and dust pathways. Potentially dusty activities on, or off, a site may lead to dust propagation. Dust pathways are also significant on site boundaries, as this is where dust leaving a site may lead to possible nuisance at an off-site receptor. Well-positioned DustScan gauges can help identify the location of dust sources and pathways on and off a site.

The DustScan directional dust gauge can be used to assess the direction, magnitude, and significance of dust pathways and the likelihood of complaint due to dust.

The directional information from DustScan monitoring can be used to identify and quantify sources of dust from various site activities. This can be used to evaluate the effectiveness of mitigation measures and assist site environmental management.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Guidance Note No. 2:
Using the DustScan directional dust gauge

What do the DustScan results mean?

Directional dust levels are reported as Absolute Area Coverage (AAC%) - the dust coverage irrespective of colour; and Effective Area Coverage (EAC%) - the soiling caused by that dust.

AAC% measures dusting irrespective of colour so all dust, dark or light, contributes to AAC%. Therefore it is an excellent method to identify and discriminate between dust sources – for example there may be more than one in a locality, such as an on-site process and off-site activities. Different AAC% levels from different directions can indicate the scale of these activities.

EAC% is used to measure the potential nuisance caused by dust soiling. As it relates to the darkness of dust, dark-coloured dusts such as coal will have a proportionately greater EAC% for any mass than light-coloured dusts, such as chalk. EAC% measures the likelihood of nuisance caused by dust soiling.

Nuisance criteria have been developed for use with these measures – please refer to Guidance Note No. 3 ‘Directional Dust Data Assessment’.

Where should DustScan directional dust gauges be used?

DustScan directional gauges are typically installed on site boundaries and should be well away from obstructions such as buildings, tall trees or overhanging vegetation. As with all flux-monitoring systems, there should be a clear air flow to the monitoring head.

The directional gauge must be securely fixed in a vertical position and is normally installed so that the protective rain guard is 2 metres from ground level. A rigid stand is supplied to enable fixing at the correct height – please refer to our installation instructions for more information.

How should DustScan directional dust gauges be used?

DustScan gauges can be used in a range of monitoring applications:

- During baseline studies to establish dust levels before a process, such as a quarry extension, takes place
- As part of an environmental monitoring strategy during the lifetime of a project
- In one-off monitoring programmes such as remediation works, demolition, blasting, etc

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

DustScan

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Guidance Note No. 2:
Using the DustScan directional dust gauge

Boundary monitoring typically requires 4 gauges. Larger sites may need one or two more, and some sites need less. The number required depends on the level of information required and the size and complexity of the site. Please contact us to discuss your requirements.

- One DustScan gauge could be used to monitor dust near a single ‘point source’ such as a stockpile
- Two gauges could be used to monitor dust transit across a site – for example upwind and downwind
- Three or more gauges are required for boundary monitoring

DustScan can be used in conjunction with other monitoring methods. We have experience in other methods and can advise their suitability as required.

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Appendix B – Dust Monitoring Station Photographs

Monitoring Point S1

Monitoring Point S2

Monitoring Point S3

Monitoring Point P1

Monitoring Point P2

Monitoring Point P3

Monitoring Point P4

Monitoring Point P5

Monitoring Point P6

Monitoring Point P7

Monitoring Point P8

Monitoring Point A1

Appendix C – Analytical Laboratory Reports

DustScan Ltd
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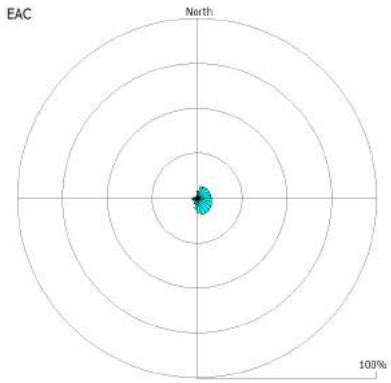
DS100 DIRECTIONAL DUST FLUX REPORT

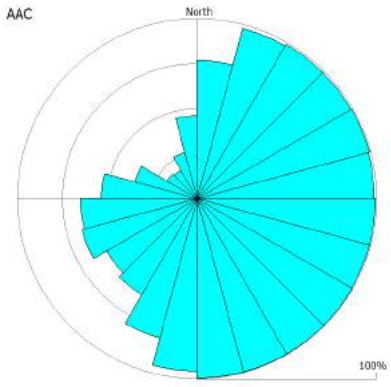
Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	A-01 (No point description given)		
Date Out:	18-Jul-14	**Date In:**	25-Jul-14
Interval*:	7 days	**Our Ref:**	50518 / A-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 5.1
Absolute Area Coverage (AAC%) / interval = 74.9
Effective Area Coverage (EAC%) / day = 0.7
Absolute Area Coverage (AAC%) / day = 10.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	4.0	77.1	0.6	11.0
15°-30°	6.9	98.0	1.0	14.0
30°-45°	7.5	99.1	1.1	14.2
45°-60°	7.8	99.2	1.1	14.2
60°-75°	7.6	99.3	1.1	14.2
75°-90°	7.8	98.8	1.1	14.1
90°-105°	8.2	99.4	1.2	14.2
105°-120°	8.6	99.5	1.2	14.2
120°-135°	9.2	99.8	1.3	14.3
135°-150°	9.4	100.0	1.3	14.3
150°-165°	9.7	99.9	1.4	14.3
165°-180°	8.5	99.7	1.2	14.2
180°-195°	6.1	95.8	0.9	13.7
195°-210°	3.8	80.2	0.5	11.5
210°-225°	2.5	61.8	0.4	8.8
225°-240°	2.5	58.4	0.4	8.3
240°-255°	3.0	66.7	0.4	9.5
255°-270°	2.9	65.0	0.4	9.3
270°-285°	2.2	53.3	0.3	7.6
285°-300°	1.4	35.7	0.2	5.1
300°-315°	0.7	19.6	<0.1	2.8
315°-330°	0.6	18.5	<0.1	2.6
330°-345°	0.9	26.7	0.1	3.8
345°-360°	1.6	46.3	0.2	6.6





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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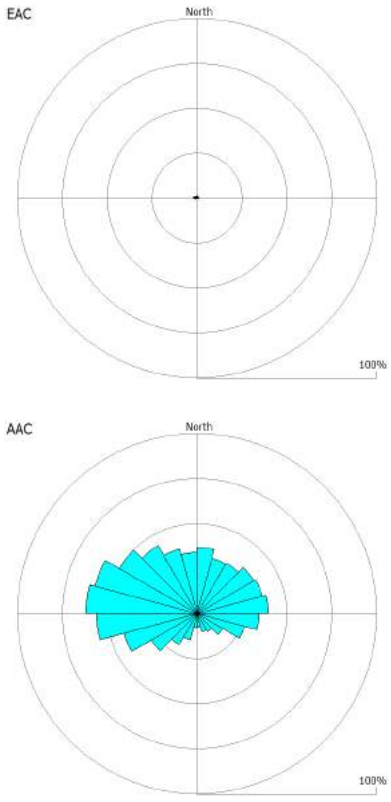
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-01 (No point description given)		
Date Out:	18-Jul-14	**Date In:**	25-Jul-14
Interval*:	7 days	**Our Ref:**	50519 / P-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.2
Absolute Area Coverage (AAC%) / interval = 32.6
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 4.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	1.7	36.8	0.2	5.3
15°-30°	0.9	31.9	0.1	4.6
30°-45°	1.0	32.7	0.1	4.7
45°-60°	1.3	36.7	0.2	5.2
60°-75°	1.2	37.7	0.2	5.4
75°-90°	1.3	39.7	0.2	5.7
90°-105°	1.2	34.5	0.2	4.9
105°-120°	0.9	27.2	0.1	3.9
120°-135°	0.6	16.7	<0.1	2.4
135°-150°	0.3	11.5	<0.1	1.6
150°-165°	0.3	10.5	<0.1	1.5
165°-180°	0.2	7.7	<0.1	1.1
180°-195°	0.2	8.2	<0.1	1.2
195°-210°	0.5	15.2	<0.1	2.2
210°-225°	0.8	20.2	0.1	2.9
225°-240°	1.1	29.6	0.2	4.2
240°-255°	1.6	42.5	0.2	6.1
255°-270°	2.2	56.3	0.3	8.0
270°-285°	2.4	61.9	0.3	8.8
285°-300°	2.3	59.2	0.3	8.5
300°-315°	1.8	50.2	0.3	7.2
315°-330°	1.5	43.9	0.2	6.3
330°-345°	1.3	37.3	0.2	5.3
345°-360°	1.0	34.2	0.1	4.9



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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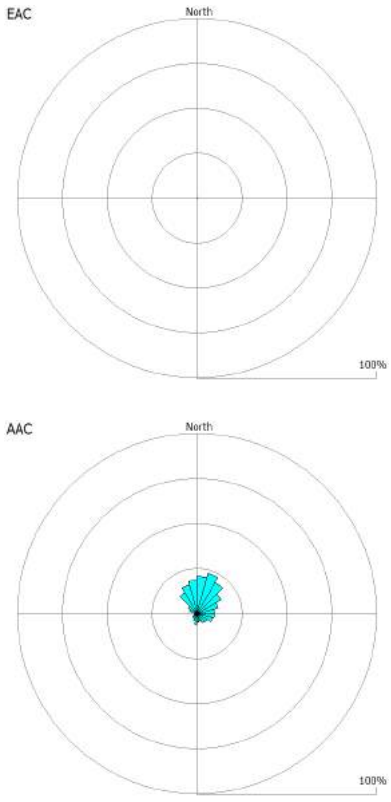
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-02 (No point description given)		
Date Out:	18-Jul-14	**Date In:**	25-Jul-14
Interval*:	7 days	**Our Ref:**	50520 / P-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.3
Absolute Area Coverage (AAC%) / interval = 9.4
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.6	21.0	<0.1	3.0
15°-30°	0.6	23.3	<0.1	3.3
30°-45°	0.6	20.1	<0.1	2.9
45°-60°	0.5	15.7	<0.1	2.2
60°-75°	0.4	12.3	<0.1	1.8
75°-90°	0.3	9.8	<0.1	1.4
90°-105°	0.3	9.7	<0.1	1.4
105°-120°	0.3	9.1	<0.1	1.3
120°-135°	0.2	6.5	<0.1	0.9
135°-150°	0.2	6.0	<0.1	0.9
150°-165°	0.1	4.4	<0.1	0.6
165°-180°	0.2	4.9	<0.1	0.7
180°-195°	0.2	6.2	<0.1	0.9
195°-210°	0.1	4.5	<0.1	0.6
210°-225°	0.1	3.5	<0.1	0.5
225°-240°	<0.1	2.9	<0.1	0.4
240°-255°	<0.1	1.9	<0.1	0.3
255°-270°	<0.1	1.5	<0.1	0.2
270°-285°	<0.1	1.6	<0.1	0.2
285°-300°	0.1	4.6	<0.1	0.7
300°-315°	0.2	5.9	<0.1	0.8
315°-330°	0.4	13.9	<0.1	2.0
330°-345°	0.4	16.5	<0.1	2.4
345°-360°	0.5	18.6	<0.1	2.7



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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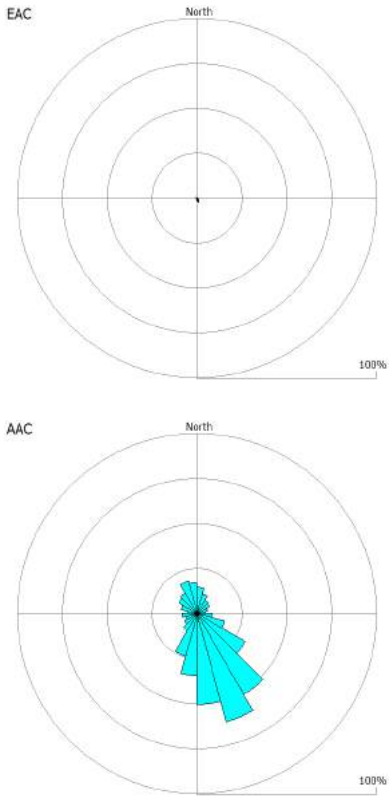
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-03 (No point description given)		
Date Out:	18-Jul-14	**Date In:**	25-Jul-14
Interval*:	7 days	**Our Ref:**	50521 / P-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.7
Absolute Area Coverage (AAC%) / interval = 18.5
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 2.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.5	14.7	<0.1	2.1
15°-30°	0.3	11.8	<0.1	1.7
30°-45°	0.3	8.8	<0.1	1.3
45°-60°	0.2	8.1	<0.1	1.2
60°-75°	0.2	6.1	<0.1	0.9
75°-90°	0.1	4.7	<0.1	0.7
90°-105°	0.4	8.9	<0.1	1.3
105°-120°	0.5	15.7	<0.1	2.2
120°-135°	1.1	31.2	0.2	4.5
135°-150°	2.1	52.1	0.3	7.4
150°-165°	2.6	62.3	0.4	8.9
165°-180°	1.9	50.6	0.3	7.2
180°-195°	1.2	34.4	0.2	4.9
195°-210°	0.9	24.5	0.1	3.5
210°-225°	0.4	11.0	<0.1	1.6
225°-240°	0.3	8.4	<0.1	1.2
240°-255°	0.3	6.5	<0.1	0.9
255°-270°	0.3	8.4	<0.1	1.2
270°-285°	0.2	5.7	<0.1	0.8
285°-300°	0.4	9.3	<0.1	1.3
300°-315°	0.5	11.9	<0.1	1.7
315°-330°	0.4	13.5	<0.1	1.9
330°-345°	0.8	18.8	0.1	2.7
345°-360°	0.7	17.3	<0.1	2.5



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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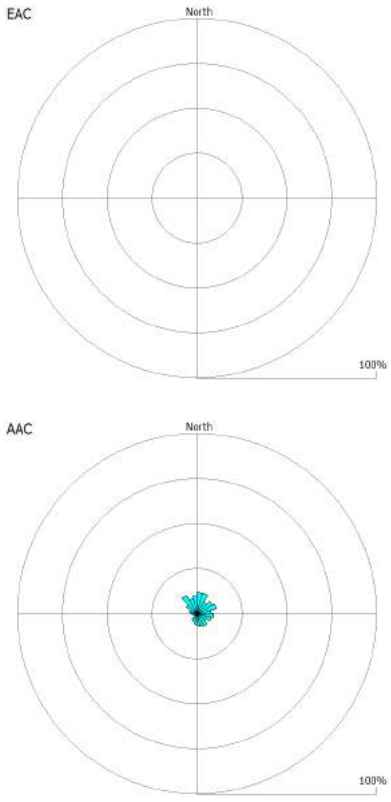
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-04 (No point description given)		
Date Out:	18-Jul-14	**Date In:**	25-Jul-14
Interval*:	7 days	**Our Ref:**	50522 / P-04 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.2
Absolute Area Coverage (AAC%) / interval = 7.4
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.3	11.9	<0.1	1.7
15°-30°	0.3	11.9	<0.1	1.7
30°-45°	0.2	7.7	<0.1	1.1
45°-60°	0.3	9.9	<0.1	1.4
60°-75°	0.3	11.3	<0.1	1.6
75°-90°	0.2	7.7	<0.1	1.1
90°-105°	0.3	9.6	<0.1	1.4
105°-120°	0.2	7.9	<0.1	1.1
120°-135°	0.2	6.0	<0.1	0.9
135°-150°	0.2	8.0	<0.1	1.1
150°-165°	0.2	7.4	<0.1	1.1
165°-180°	0.2	6.5	<0.1	0.9
180°-195°	0.2	6.4	<0.1	0.9
195°-210°	0.1	4.6	<0.1	0.7
210°-225°	0.1	4.5	<0.1	0.6
225°-240°	<0.1	2.4	<0.1	0.3
240°-255°	<0.1	2.5	<0.1	0.4
255°-270°	<0.1	3.2	<0.1	0.5
270°-285°	<0.1	4.0	<0.1	0.6
285°-300°	0.1	4.7	<0.1	0.7
300°-315°	0.2	7.3	<0.1	1.0
315°-330°	0.4	11.8	<0.1	1.7
330°-345°	0.2	8.9	<0.1	1.3
345°-360°	0.2	10.3	<0.1	1.5



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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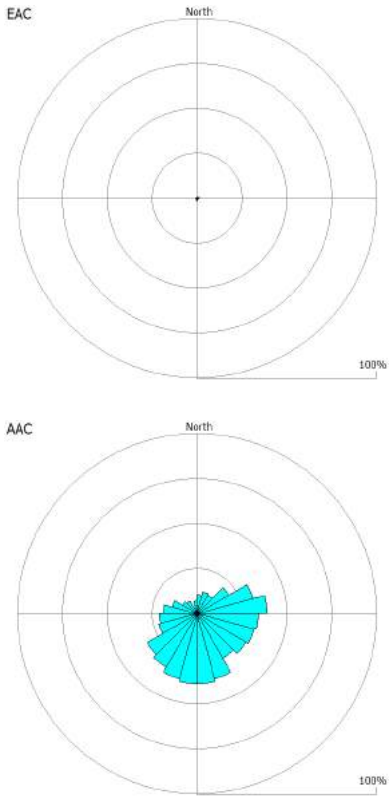
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-05 (No point description given)		
Date Out:	18-Jul-14	**Date In:**	25-Jul-14
Interval*:	7 days	**Our Ref:**	50523 / P-05 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.9
Absolute Area Coverage (AAC%) / interval = 24.2
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 3.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.3	10.5	<0.1	1.5
15°-30°	0.4	12.8	<0.1	1.8
30°-45°	0.5	11.9	<0.1	1.7
45°-60°	0.8	20.4	0.1	2.9
60°-75°	1.4	32.4	0.2	4.6
75°-90°	1.7	38.9	0.2	5.6
90°-105°	1.4	34.3	0.2	4.9
105°-120°	1.3	33.0	0.2	4.7
120°-135°	1.2	31.5	0.2	4.5
135°-150°	1.0	28.7	0.1	4.1
150°-165°	1.4	37.7	0.2	5.4
165°-180°	1.5	39.3	0.2	5.6
180°-195°	1.5	39.2	0.2	5.6
195°-210°	1.3	37.5	0.2	5.4
210°-225°	1.2	34.4	0.2	4.9
225°-240°	1.2	32.1	0.2	4.6
240°-255°	0.8	22.2	0.1	3.2
255°-270°	0.8	21.1	0.1	3.0
270°-285°	0.7	19.1	<0.1	2.7
285°-300°	0.6	14.6	<0.1	2.1
300°-315°	0.3	9.4	<0.1	1.3
315°-330°	0.4	8.4	<0.1	1.2
330°-345°	0.2	5.0	<0.1	0.7
345°-360°	0.2	7.4	<0.1	1.1



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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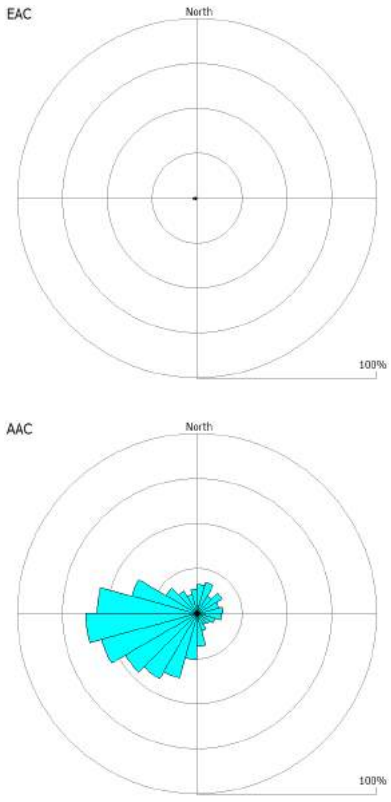
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-06 (No point description given)		
Date Out:	18-Jul-14	**Date In:**	25-Jul-14
Interval*:	7 days	**Our Ref:**	50524 / P-06 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.8
Absolute Area Coverage (AAC%) / interval = 24.1
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 3.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.6	16.3	<0.1	2.3
15°-30°	0.6	18.0	<0.1	2.6
30°-45°	0.3	11.1	<0.1	1.6
45°-60°	0.5	16.2	<0.1	2.3
60°-75°	0.4	12.8	<0.1	1.8
75°-90°	0.4	14.5	<0.1	2.1
90°-105°	0.4	13.9	<0.1	2.0
105°-120°	0.3	10.7	<0.1	1.5
120°-135°	0.3	8.0	<0.1	1.1
135°-150°	0.2	6.9	<0.1	1.0
150°-165°	0.3	10.1	<0.1	1.4
165°-180°	0.5	18.5	<0.1	2.6
180°-195°	0.8	25.7	0.1	3.7
195°-210°	1.3	37.4	0.2	5.3
210°-225°	1.5	42.1	0.2	6.0
225°-240°	1.7	46.2	0.2	6.6
240°-255°	2.1	55.2	0.3	7.9
255°-270°	2.5	61.8	0.4	8.8
270°-285°	2.0	55.9	0.3	8.0
285°-300°	1.3	37.8	0.2	5.4
300°-315°	0.7	20.0	0.1	2.9
315°-330°	0.5	14.8	<0.1	2.1
330°-345°	0.3	11.2	<0.1	1.6
345°-360°	0.4	13.8	<0.1	2.0



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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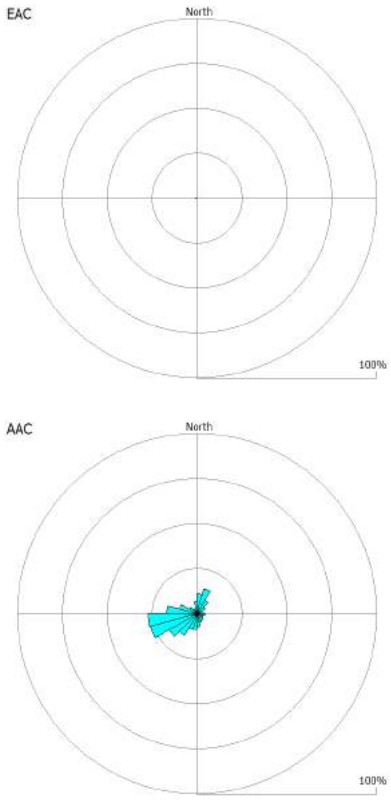
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-07 (No point description given)		
Date Out:	18-Jul-14	**Date In:**	25-Jul-14
Interval*:	7 days	**Our Ref:**	50525 / P-07 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.3
Absolute Area Coverage (AAC%) / interval = 9.5
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.3	11.3	<0.1	1.6
15°-30°	0.4	14.4	<0.1	2.1
30°-45°	0.6	8.7	<0.1	1.2
45°-60°	0.2	5.5	<0.1	0.8
60°-75°	<0.1	2.7	<0.1	0.4
75°-90°	0.1	3.8	<0.1	0.5
90°-105°	0.2	4.6	<0.1	0.7
105°-120°	<0.1	3.2	<0.1	0.5
120°-135°	0.1	4.3	<0.1	0.6
135°-150°	0.1	4.8	<0.1	0.7
150°-165°	0.1	5.1	<0.1	0.7
165°-180°	0.3	7.3	<0.1	1.0
180°-195°	0.3	9.3	<0.1	1.3
195°-210°	0.3	9.5	<0.1	1.4
210°-225°	0.4	14.3	<0.1	2.0
225°-240°	0.6	18.0	<0.1	2.6
240°-255°	0.8	27.1	0.1	3.9
255°-270°	0.8	27.3	0.1	3.9
270°-285°	0.6	17.0	<0.1	2.4
285°-300°	0.3	10.0	<0.1	1.4
300°-315°	0.2	5.2	<0.1	0.7
315°-330°	0.1	3.4	<0.1	0.5
330°-345°	0.1	3.5	<0.1	0.5
345°-360°	0.2	6.8	<0.1	1.0



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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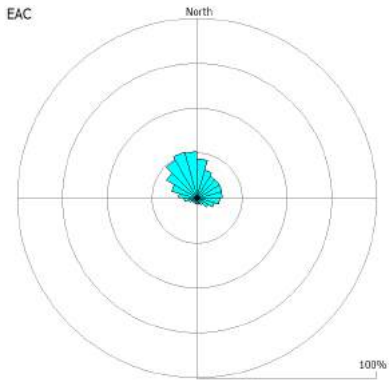
DS100 DIRECTIONAL DUST FLUX REPORT

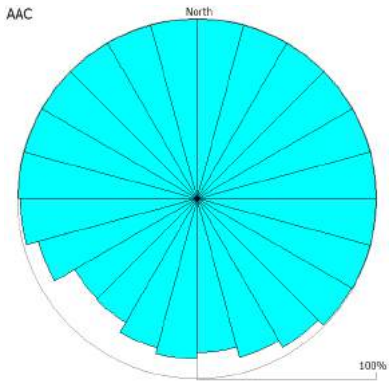
Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-08 (No point description given)		
Date Out:	18-Jul-14	**Date In:**	25-Jul-14
Interval*:	7 days	**Our Ref:**	50526 / P-08 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 11.9
Absolute Area Coverage (AAC%) / interval = 95.6
Effective Area Coverage (EAC%) / day = 1.7
Absolute Area Coverage (AAC%) / day = 13.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	22.0	100.0	3.1	14.3
15°-30°	16.1	100.0	2.3	14.3
30°-45°	14.6	100.0	2.1	14.3
45°-60°	14.4	100.0	2.1	14.3
60°-75°	14.6	100.0	2.1	14.3
75°-90°	14.0	100.0	2.0	14.3
90°-105°	12.7	100.0	1.8	14.3
105°-120°	10.3	100.0	1.5	14.3
120°-135°	7.5	99.4	1.1	14.2
135°-150°	4.6	95.5	0.7	13.6
150°-165°	3.7	91.4	0.5	13.1
165°-180°	3.0	85.7	0.4	12.2
180°-195°	3.4	89.2	0.5	12.7
195°-210°	3.6	85.9	0.5	12.3
210°-225°	3.1	79.3	0.4	11.3
225°-240°	3.2	78.9	0.5	11.3
240°-255°	4.9	91.8	0.7	13.1
255°-270°	7.5	98.4	1.1	14.1
270°-285°	10.7	100.0	1.5	14.3
285°-300°	14.7	100.0	2.1	14.3
300°-315°	19.9	100.0	2.8	14.3
315°-330°	24.6	100.0	3.5	14.3
330°-345°	26.4	100.0	3.8	14.3
345°-360°	25.7	100.0	3.7	14.3





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

DustScan Ltd
Dust Monitoring and Dust Consultancy Services

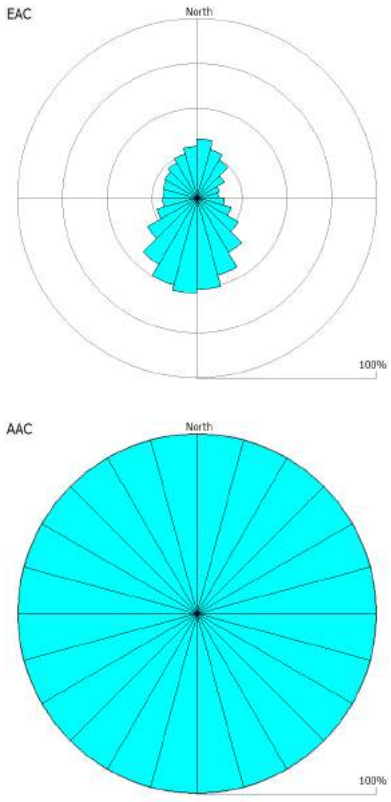
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-01 (No point description given)		
Date Out:	18-Jul-14	**Date In:**	25-Jul-14
Interval*:	7 days	**Our Ref:**	50527 / S-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 28.3
Absolute Area Coverage (AAC%) / interval = 100.0
Effective Area Coverage (EAC%) / day = 4.0
Absolute Area Coverage (AAC%) / day = 14.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	33.2	100.0	4.7	14.3
15°-30°	28.1	100.0	4.0	14.3
30°-45°	24.3	100.0	3.5	14.3
45°-60°	17.8	100.0	2.5	14.3
60°-75°	13.2	100.0	1.9	14.3
75°-90°	11.8	100.0	1.7	14.3
90°-105°	15.2	100.0	2.2	14.3
105°-120°	19.7	100.0	2.8	14.3
120°-135°	26.6	100.0	3.8	14.3
135°-150°	35.3	100.0	5.0	14.3
150°-165°	44.3	100.0	6.3	14.3
165°-180°	50.9	100.0	7.3	14.3
180°-195°	53.2	100.0	7.6	14.3
195°-210°	50.4	100.0	7.2	14.3
210°-225°	42.7	100.0	6.1	14.3
225°-240°	32.0	100.0	4.6	14.3
240°-255°	23.3	100.0	3.3	14.3
255°-270°	19.3	100.0	2.8	14.3
270°-285°	19.2	100.0	2.7	14.3
285°-300°	19.9	100.0	2.8	14.3
300°-315°	21.0	100.0	3.0	14.3
315°-330°	23.1	100.0	3.3	14.3
330°-345°	25.7	100.0	3.7	14.3
345°-360°	29.2	100.0	4.2	14.3



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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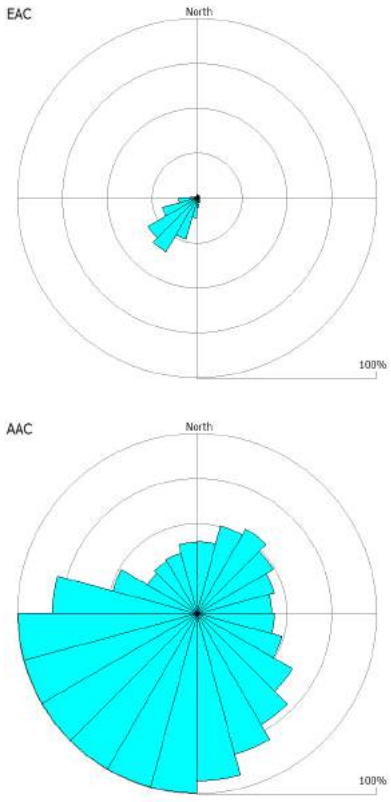
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-02 (No point description given)		
Date Out:	18-Jul-14	**Date In:**	25-Jul-14
Interval*:	7 days	**Our Ref:**	50528 / S-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 7.1
Absolute Area Coverage (AAC%) / interval = 64.5
Effective Area Coverage (EAC%) / day = 1.0
Absolute Area Coverage (AAC%) / day = 9.2

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	2.3	40.3	0.3	5.8
15°-30°	2.1	50.4	0.3	7.2
30°-45°	2.3	54.4	0.3	7.8
45°-60°	1.9	49.1	0.3	7.0
60°-75°	1.7	44.4	0.2	6.3
75°-90°	1.5	41.8	0.2	6.0
90°-105°	1.6	43.0	0.2	6.1
105°-120°	1.8	49.0	0.3	7.0
120°-135°	2.2	61.4	0.3	8.8
135°-150°	2.7	71.4	0.4	10.2
150°-165°	3.1	81.1	0.4	11.6
165°-180°	5.2	93.2	0.7	13.3
180°-195°	11.4	99.8	1.6	14.3
195°-210°	23.6	100.0	3.4	14.3
210°-225°	34.7	100.0	5.0	14.3
225°-240°	31.6	100.0	4.5	14.3
240°-255°	20.3	100.0	2.9	14.3
255°-270°	10.4	99.7	1.5	14.2
270°-285°	4.1	80.6	0.6	11.5
285°-300°	2.1	48.7	0.3	7.0
300°-315°	1.1	31.9	0.2	4.6
315°-330°	1.2	33.6	0.2	4.8
330°-345°	1.2	34.9	0.2	5.0
345°-360°	1.4	39.9	0.2	5.7



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

DustScan Ltd
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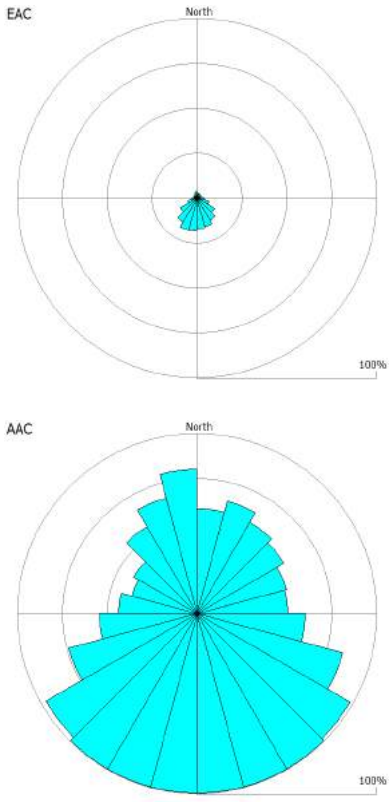
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-03 (No point description given)		
Date Out:	18-Jul-14	**Date In:**	25-Jul-14
Interval*:	7 days	**Our Ref:**	50529 / S-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 7.4
Absolute Area Coverage (AAC%) / interval = 72.2
Effective Area Coverage (EAC%) / day = 1.1
Absolute Area Coverage (AAC%) / day = 10.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	3.0	58.5	0.4	8.4
15°-30°	3.1	64.9	0.4	9.3
30°-45°	2.8	58.6	0.4	8.4
45°-60°	2.8	56.0	0.4	8.0
60°-75°	2.7	51.4	0.4	7.3
75°-90°	2.9	50.5	0.4	7.2
90°-105°	3.8	60.3	0.5	8.6
105°-120°	6.9	84.0	1.0	12.0
120°-135°	11.6	98.3	1.7	14.0
135°-150°	14.5	99.9	2.1	14.3
150°-165°	16.7	100.0	2.4	14.3
165°-180°	17.5	100.0	2.5	14.3
180°-195°	18.4	100.0	2.6	14.3
195°-210°	18.6	100.0	2.7	14.3
210°-225°	15.4	99.9	2.2	14.3
225°-240°	10.9	97.4	1.6	13.9
240°-255°	5.5	74.0	0.8	10.6
255°-270°	3.2	54.4	0.5	7.8
270°-285°	2.5	43.6	0.4	6.2
285°-300°	2.2	37.7	0.3	5.4
300°-315°	2.1	40.9	0.3	5.8
315°-330°	2.8	55.8	0.4	8.0
330°-345°	3.5	66.5	0.5	9.5
345°-360°	4.2	80.1	0.6	11.4



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

DustScan Ltd
Dust Monitoring and Dust Consultancy Services

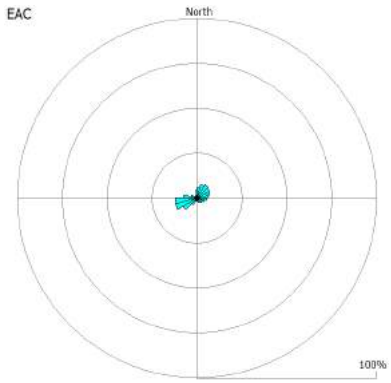
DS100 DIRECTIONAL DUST FLUX REPORT

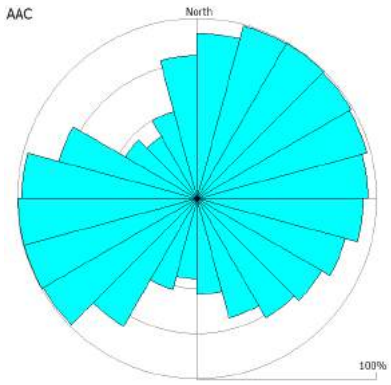
Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	A-01 (No point description given)		
Date Out:	12-Aug-14	**Date In:**	19-Aug-14
Interval*:	7 days	**Our Ref:**	51335 / A-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 5.4
Absolute Area Coverage (AAC%) / interval = 79.7
Effective Area Coverage (EAC%) / day = 0.8
Absolute Area Coverage (AAC%) / day = 11.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	6.0	92.0	0.9	13.1
15°-30°	8.1	99.6	1.2	14.2
30°-45°	8.7	99.7	1.2	14.2
45°-60°	8.1	99.2	1.2	14.2
60°-75°	7.3	98.1	1.0	14.0
75°-90°	6.3	95.2	0.9	13.6
90°-105°	5.4	92.6	0.8	13.2
105°-120°	4.3	85.6	0.6	12.2
120°-135°	3.8	80.2	0.5	11.5
135°-150°	3.5	76.6	0.5	10.9
150°-165°	2.8	68.9	0.4	9.8
165°-180°	2.0	53.4	0.3	7.6
180°-195°	1.6	44.9	0.2	6.4
195°-210°	2.0	52.4	0.3	7.5
210°-225°	4.4	82.1	0.6	11.7
225°-240°	9.3	99.2	1.3	14.2
240°-255°	12.8	100.0	1.8	14.3
255°-270°	12.3	100.0	1.8	14.3
270°-285°	7.7	97.8	1.1	14.0
285°-300°	3.9	79.7	0.6	11.4
300°-315°	1.7	46.4	0.2	6.6
315°-330°	1.4	39.7	0.2	5.7
330°-345°	1.8	50.1	0.3	7.2
345°-360°	4.4	79.5	0.6	11.4





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

DustScan Ltd
Dust Monitoring and Dust Consultancy Services

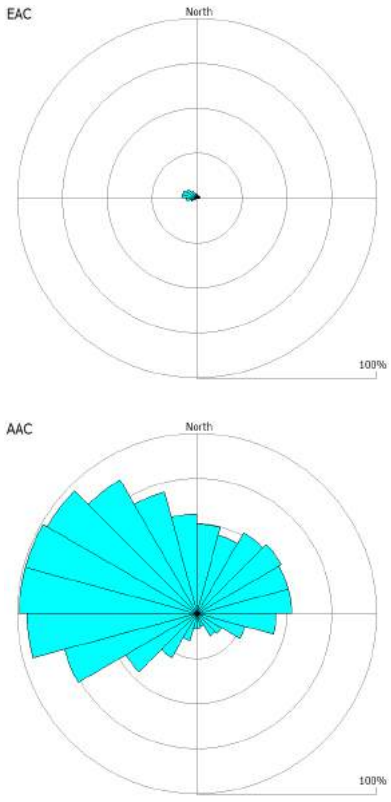
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-01 (No point description given)		
Date Out:	12-Aug-14	**Date In:**	19-Aug-14
Interval*:	7 days	**Our Ref:**	51336 / P-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 2.6
Absolute Area Coverage (AAC%) / interval = 50.1
Effective Area Coverage (EAC%) / day = 0.4
Absolute Area Coverage (AAC%) / day = 7.2

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	2.3	49.8	0.3	7.1
15°-30°	1.6	45.1	0.2	6.4
30°-45°	2.0	52.0	0.3	7.4
45°-60°	2.1	54.5	0.3	7.8
60°-75°	1.9	52.9	0.3	7.6
75°-90°	1.8	52.7	0.3	7.5
90°-105°	1.5	44.2	0.2	6.3
105°-120°	0.9	27.8	0.1	4.0
120°-135°	0.5	16.0	<0.1	2.3
135°-150°	0.4	14.5	<0.1	2.1
150°-165°	0.2	7.2	<0.1	1.0
165°-180°	0.2	8.4	<0.1	1.2
180°-195°	0.2	8.8	<0.1	1.3
195°-210°	0.5	15.4	<0.1	2.2
210°-225°	0.9	28.4	0.1	4.1
225°-240°	1.7	46.0	0.2	6.6
240°-255°	3.7	76.6	0.5	10.9
255°-270°	6.3	94.7	0.9	13.5
270°-285°	8.6	99.2	1.2	14.2
285°-300°	8.3	99.3	1.2	14.2
300°-315°	7.0	96.7	1.0	13.8
315°-330°	4.7	86.0	0.7	12.3
330°-345°	3.0	70.3	0.4	10.0
345°-360°	2.5	55.6	0.4	7.9



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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DustScan Ltd
Dust Monitoring and Dust Consultancy Services

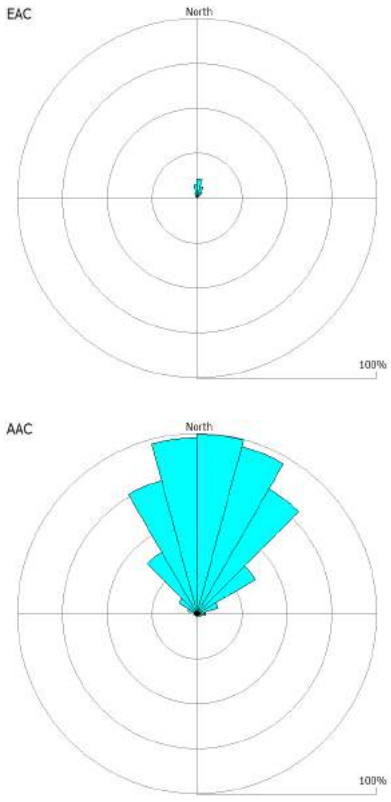
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-02 (No point description given)		
Date Out:	12-Aug-14	**Date In:**	19-Aug-14
Interval*:	7 days	**Our Ref:**	51337 / P-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.6
Absolute Area Coverage (AAC%) / interval = 24.6
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 3.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	10.7	99.7	1.5	14.2
15°-30°	7.1	96.4	1.0	13.8
30°-45°	4.1	80.3	0.6	11.5
45°-60°	1.4	37.8	0.2	5.4
60°-75°	0.4	12.2	<0.1	1.7
75°-90°	0.2	5.0	<0.1	0.7
90°-105°	0.2	4.8	<0.1	0.7
105°-120°	<0.1	2.7	<0.1	0.4
120°-135°	<0.1	2.7	<0.1	0.4
135°-150°	<0.1	1.9	<0.1	0.3
150°-165°	<0.1	1.4	<0.1	0.2
165°-180°	<0.1	1.5	<0.1	0.2
180°-195°	<0.1	1.9	<0.1	0.3
195°-210°	<0.1	1.6	<0.1	0.2
210°-225°	<0.1	1.4	<0.1	0.2
225°-240°	<0.1	1.6	<0.1	0.2
240°-255°	<0.1	2.3	<0.1	0.3
255°-270°	<0.1	1.4	<0.1	0.2
270°-285°	<0.1	2.0	<0.1	0.3
285°-300°	0.2	5.4	<0.1	0.8
300°-315°	0.3	11.9	<0.1	1.7
315°-330°	1.3	39.3	0.2	5.6
330°-345°	3.5	76.5	0.5	10.9
345°-360°	7.5	97.8	1.1	14.0



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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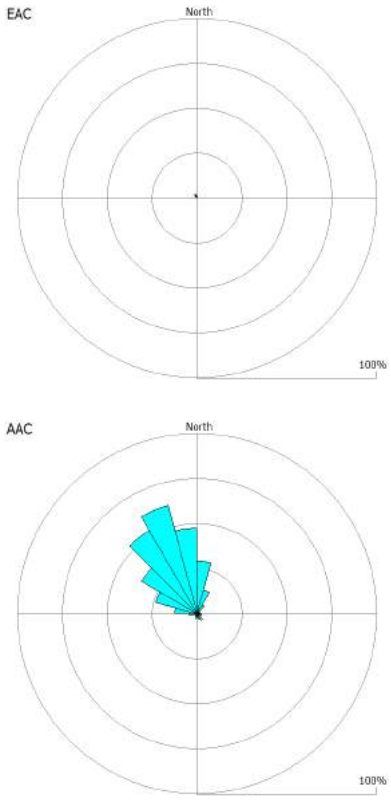
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-03 (No point description given)		
Date Out:	12-Aug-14	**Date In:**	19-Aug-14
Interval*:	7 days	**Our Ref:**	51338 / P-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.6
Absolute Area Coverage (AAC%) / interval = 13.4
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 1.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	1.2	29.6	0.2	4.2
15°-30°	0.5	13.9	<0.1	2.0
30°-45°	0.2	5.9	<0.1	0.8
45°-60°	<0.1	2.0	<0.1	0.3
60°-75°	<0.1	1.5	<0.1	0.2
75°-90°	<0.1	0.5	<0.1	<0.1
90°-105°	<0.1	2.2	<0.1	0.3
105°-120°	<0.1	2.7	<0.1	0.4
120°-135°	<0.1	2.7	<0.1	0.4
135°-150°	0.2	4.5	<0.1	0.6
150°-165°	0.1	3.5	<0.1	0.5
165°-180°	<0.1	2.1	<0.1	0.3
180°-195°	0.1	3.1	<0.1	0.4
195°-210°	0.1	2.7	<0.1	0.4
210°-225°	<0.1	1.2	<0.1	0.2
225°-240°	<0.1	1.2	<0.1	0.2
240°-255°	<0.1	2.1	<0.1	0.3
255°-270°	0.2	4.5	<0.1	0.6
270°-285°	0.6	12.8	<0.1	1.8
285°-300°	1.1	24.1	0.2	3.4
300°-315°	1.7	36.0	0.2	5.1
315°-330°	2.5	53.3	0.4	7.6
330°-345°	2.7	62.2	0.4	8.9
345°-360°	2.0	47.8	0.3	6.8



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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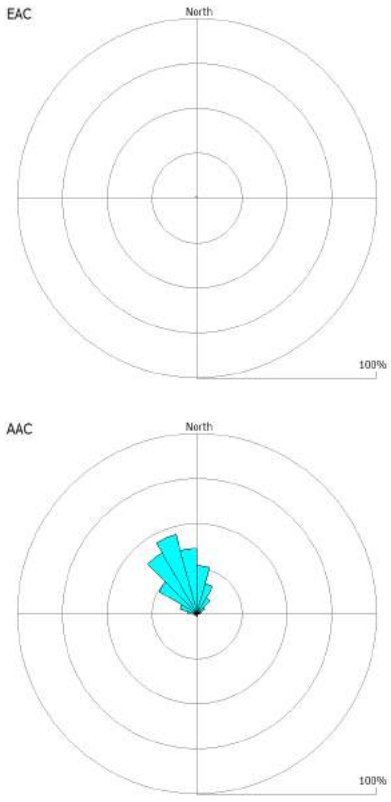
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-04 (No point description given)		
Date Out:	12-Aug-14	**Date In:**	19-Aug-14
Interval*:	7 days	**Our Ref:**	51339 / P-04 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.3
Absolute Area Coverage (AAC%) / interval = 10.1
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.7	26.5	0.1	3.8
15°-30°	0.5	17.3	<0.1	2.5
30°-45°	0.3	10.2	<0.1	1.5
45°-60°	0.1	5.1	<0.1	0.7
60°-75°	<0.1	2.6	<0.1	0.4
75°-90°	<0.1	2.2	<0.1	0.3
90°-105°	<0.1	1.6	<0.1	0.2
105°-120°	<0.1	1.3	<0.1	0.2
120°-135°	<0.1	1.0	<0.1	0.1
135°-150°	<0.1	1.0	<0.1	0.1
150°-165°	<0.1	1.2	<0.1	0.2
165°-180°	<0.1	1.7	<0.1	0.2
180°-195°	<0.1	1.9	<0.1	0.3
195°-210°	<0.1	1.4	<0.1	0.2
210°-225°	<0.1	0.9	<0.1	0.1
225°-240°	<0.1	1.3	<0.1	0.2
240°-255°	<0.1	2.4	<0.1	0.3
255°-270°	<0.1	1.8	<0.1	0.3
270°-285°	0.1	5.4	<0.1	0.8
285°-300°	0.2	9.8	<0.1	1.4
300°-315°	0.7	24.8	<0.1	3.5
315°-330°	1.2	38.9	0.2	5.6
330°-345°	1.3	45.5	0.2	6.5
345°-360°	1.0	36.4	0.1	5.2



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

DustScan Ltd
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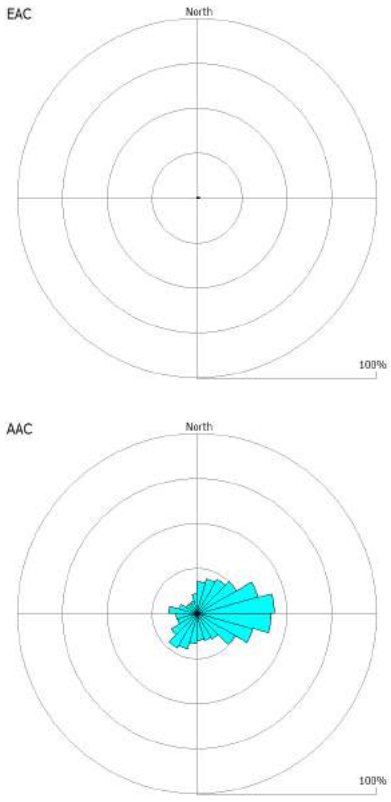
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-05 (No point description given)		
Date Out:	12-Aug-14	**Date In:**	19-Aug-14
Interval*:	7 days	**Our Ref:**	51340 / P-05 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.7
Absolute Area Coverage (AAC%) / interval = 19.5
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 2.8

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.6	17.7	<0.1	2.5
15°-30°	0.7	20.2	0.1	2.9
30°-45°	0.9	22.5	0.1	3.2
45°-60°	1.1	25.5	0.2	3.6
60°-75°	1.5	35.2	0.2	5.0
75°-90°	1.9	42.9	0.3	6.1
90°-105°	1.8	41.2	0.3	5.9
105°-120°	1.3	32.4	0.2	4.6
120°-135°	0.9	24.6	0.1	3.5
135°-150°	0.6	16.6	<0.1	2.4
150°-165°	0.6	15.5	<0.1	2.2
165°-180°	0.5	15.0	<0.1	2.1
180°-195°	0.5	16.5	<0.1	2.4
195°-210°	0.6	20.4	<0.1	2.9
210°-225°	0.7	22.5	<0.1	3.2
225°-240°	0.5	17.0	<0.1	2.4
240°-255°	0.4	11.5	<0.1	1.6
255°-270°	0.3	12.0	<0.1	1.7
270°-285°	0.5	16.0	<0.1	2.3
285°-300°	0.3	10.7	<0.1	1.5
300°-315°	0.2	7.2	<0.1	1.0
315°-330°	0.2	7.1	<0.1	1.0
330°-345°	0.2	7.4	<0.1	1.1
345°-360°	0.4	11.3	<0.1	1.6



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

DustScan Ltd
Dust Monitoring and Dust Consultancy Services

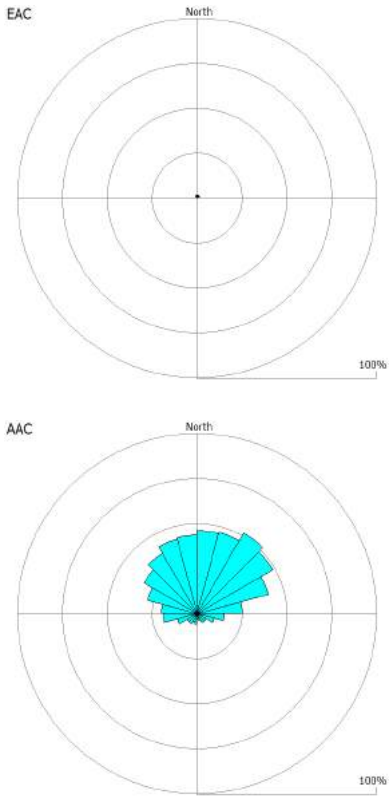
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-06 (No point description given)		
Date Out:	12-Aug-14	**Date In:**	19-Aug-14
Interval*:	7 days	**Our Ref:**	51341 / P-06 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.9
Absolute Area Coverage (AAC%) / interval = 23.7
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 3.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	1.9	46.3	0.3	6.6
15°-30°	1.9	47.0	0.3	6.7
30°-45°	2.0	51.9	0.3	7.4
45°-60°	1.8	48.9	0.3	7.0
60°-75°	1.5	41.2	0.2	5.9
75°-90°	0.8	25.2	0.1	3.6
90°-105°	0.4	15.2	<0.1	2.2
105°-120°	0.3	10.0	<0.1	1.4
120°-135°	0.2	5.9	<0.1	0.8
135°-150°	0.2	5.8	<0.1	0.8
150°-165°	0.1	4.1	<0.1	0.6
165°-180°	<0.1	2.9	<0.1	0.4
180°-195°	0.2	5.7	<0.1	0.8
195°-210°	0.2	5.2	<0.1	0.7
210°-225°	0.2	6.5	<0.1	0.9
225°-240°	0.2	6.7	<0.1	1.0
240°-255°	0.3	11.6	<0.1	1.7
255°-270°	0.6	19.3	<0.1	2.8
270°-285°	0.7	20.3	<0.1	2.9
285°-300°	1.0	28.6	0.1	4.1
300°-315°	1.3	34.4	0.2	4.9
315°-330°	1.6	38.6	0.2	5.5
330°-345°	1.9	43.1	0.3	6.2
345°-360°	1.8	43.9	0.3	6.3



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

DustScan Ltd
Dust Monitoring and Dust Consultancy Services

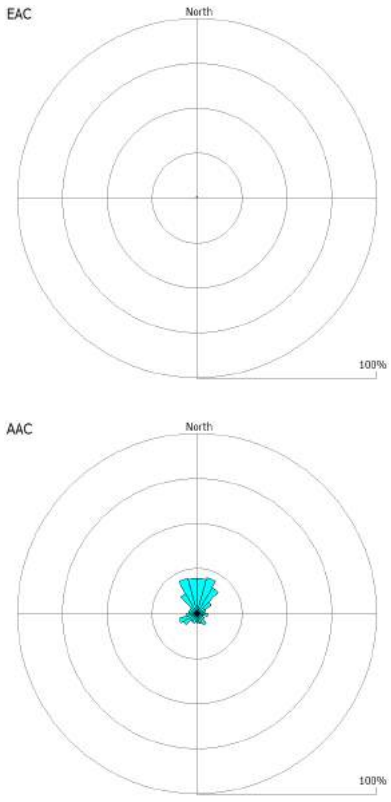
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-07 (No point description given)		
Date Out:	12-Aug-14	**Date In:**	19-Aug-14
Interval*:	7 days	**Our Ref:**	51342 / P-07 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.4
Absolute Area Coverage (AAC%) / interval = 9.1
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 1.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.7	19.8	<0.1	2.8
15°-30°	0.7	20.9	0.1	3.0
30°-45°	0.5	17.0	<0.1	2.4
45°-60°	0.3	9.3	<0.1	1.3
60°-75°	0.1	5.1	<0.1	0.7
75°-90°	0.1	4.1	<0.1	0.6
90°-105°	0.2	6.0	<0.1	0.9
105°-120°	0.1	3.5	<0.1	0.5
120°-135°	0.2	4.8	<0.1	0.7
135°-150°	0.3	7.2	<0.1	1.0
150°-165°	0.3	6.0	<0.1	0.9
165°-180°	0.3	5.2	<0.1	0.7
180°-195°	0.3	4.9	<0.1	0.7
195°-210°	0.3	5.6	<0.1	0.8
210°-225°	0.3	5.1	<0.1	0.7
225°-240°	0.4	8.7	<0.1	1.2
240°-255°	0.6	10.5	<0.1	1.5
255°-270°	0.3	6.0	<0.1	0.9
270°-285°	0.2	4.8	<0.1	0.7
285°-300°	0.2	4.8	<0.1	0.7
300°-315°	0.2	5.0	<0.1	0.7
315°-330°	0.5	13.2	<0.1	1.9
330°-345°	0.8	20.4	0.1	2.9
345°-360°	0.7	19.7	0.1	2.8



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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Dust Monitoring and Dust Consultancy Services

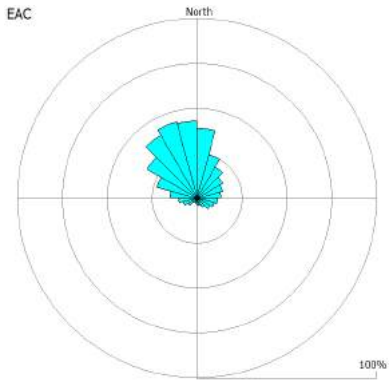
DS100 DIRECTIONAL DUST FLUX REPORT

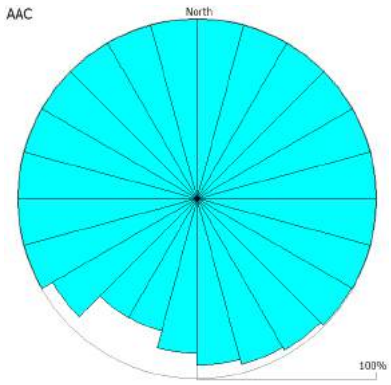
Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-08 (No point description given)		
Date Out:	12-Aug-14	**Date In:**	19-Aug-14
Interval*:	7 days	**Our Ref:**	51343 / P-08 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 16.9
Absolute Area Coverage (AAC%) / interval = 96.5
Effective Area Coverage (EAC%) / day = 2.4
Absolute Area Coverage (AAC%) / day = 13.8

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	39.0	100.0	5.6	14.3
15°-30°	25.3	100.0	3.6	14.3
30°-45°	20.1	100.0	2.9	14.3
45°-60°	16.6	100.0	2.4	14.3
60°-75°	14.8	100.0	2.1	14.3
75°-90°	13.3	100.0	1.9	14.3
90°-105°	11.7	100.0	1.7	14.3
105°-120°	10.3	100.0	1.5	14.3
120°-135°	8.3	99.5	1.2	14.2
135°-150°	5.8	97.4	0.8	13.9
150°-165°	4.4	95.6	0.6	13.7
165°-180°	3.7	92.8	0.5	13.3
180°-195°	3.3	85.8	0.5	12.3
195°-210°	2.9	76.2	0.4	10.9
210°-225°	3.4	76.6	0.5	10.9
225°-240°	6.0	93.2	0.9	13.3
240°-255°	8.1	99.9	1.2	14.3
255°-270°	10.5	100.0	1.5	14.3
270°-285°	15.3	100.0	2.2	14.3
285°-300°	23.4	100.0	3.3	14.3
300°-315°	32.4	100.0	4.6	14.3
315°-330°	40.4	100.0	5.8	14.3
330°-345°	44.1	100.0	6.3	14.3
345°-360°	43.0	100.0	6.1	14.3





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

DustScan Ltd
Dust Monitoring and Dust Consultancy Services

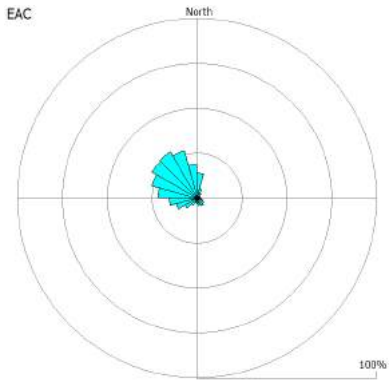
DS100 DIRECTIONAL DUST FLUX REPORT

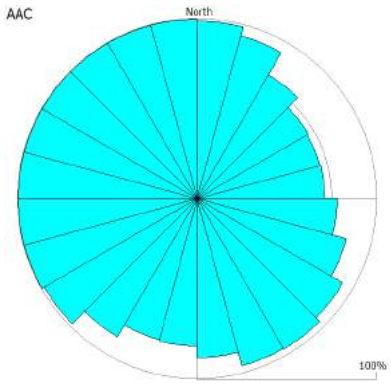
Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-01 (No point description given)		
Date Out:	12-Aug-14	**Date In:**	19-Aug-14
Interval*:	7 days	**Our Ref:**	51344 / S-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 10.5
Absolute Area Coverage (AAC%) / interval = 90.6
Effective Area Coverage (EAC%) / day = 1.5
Absolute Area Coverage (AAC%) / day = 12.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	14.3	98.8	2.0	14.1
15°-30°	5.6	93.6	0.8	13.4
30°-45°	3.4	79.4	0.5	11.3
45°-60°	2.0	71.5	0.3	10.2
60°-75°	1.8	70.8	0.3	10.1
75°-90°	2.0	71.4	0.3	10.2
90°-105°	2.4	78.0	0.3	11.1
105°-120°	3.3	86.1	0.5	12.3
120°-135°	4.3	93.9	0.6	13.4
135°-150°	5.0	96.7	0.7	13.8
150°-165°	4.5	96.1	0.6	13.7
165°-180°	3.3	88.4	0.5	12.6
180°-195°	2.6	82.1	0.4	11.7
195°-210°	3.0	81.4	0.4	11.6
210°-225°	4.8	88.7	0.7	12.7
225°-240°	8.1	98.3	1.2	14.0
240°-255°	12.3	99.9	1.8	14.3
255°-270°	15.6	100.0	2.2	14.3
270°-285°	21.8	100.0	3.1	14.3
285°-300°	26.1	100.0	3.7	14.3
300°-315°	29.2	100.0	4.2	14.3
315°-330°	29.7	100.0	4.2	14.3
330°-345°	27.2	100.0	3.9	14.3
345°-360°	19.1	100.0	2.7	14.3





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

DustScan Ltd
Dust Monitoring and Dust Consultancy Services

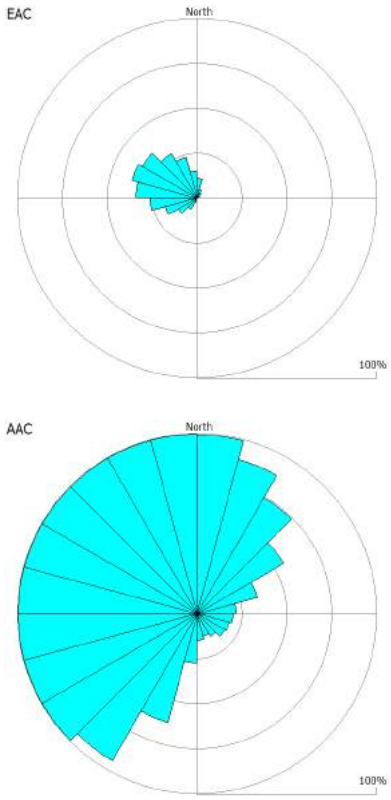
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-02 (No point description given)		
Date Out:	12-Aug-14	**Date In:**	19-Aug-14
Interval*:	7 days	**Our Ref:**	51345 / S-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 11.3
Absolute Area Coverage (AAC%) / interval = 65.0
Effective Area Coverage (EAC%) / day = 1.6
Absolute Area Coverage (AAC%) / day = 9.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	11.4	99.6	1.6	14.2
15°-30°	5.3	88.7	0.8	12.7
30°-45°	3.5	74.5	0.5	10.6
45°-60°	2.3	55.8	0.3	8.0
60°-75°	1.2	34.9	0.2	5.0
75°-90°	0.7	22.1	0.1	3.2
90°-105°	0.6	20.3	<0.1	2.9
105°-120°	0.6	18.9	<0.1	2.7
120°-135°	0.5	18.1	<0.1	2.6
135°-150°	0.4	14.7	<0.1	2.1
150°-165°	0.3	13.1	<0.1	1.9
165°-180°	0.5	14.8	<0.1	2.1
180°-195°	1.1	27.6	0.2	3.9
195°-210°	3.0	62.8	0.4	9.0
210°-225°	7.4	94.5	1.1	13.5
225°-240°	12.2	99.9	1.7	14.3
240°-255°	18.4	100.0	2.6	14.3
255°-270°	26.1	100.0	3.7	14.3
270°-285°	34.0	100.0	4.9	14.3
285°-300°	37.8	100.0	5.4	14.3
300°-315°	35.4	100.0	5.1	14.3
315°-330°	28.8	100.0	4.1	14.3
330°-345°	23.6	100.0	3.4	14.3
345°-360°	15.3	100.0	2.2	14.3



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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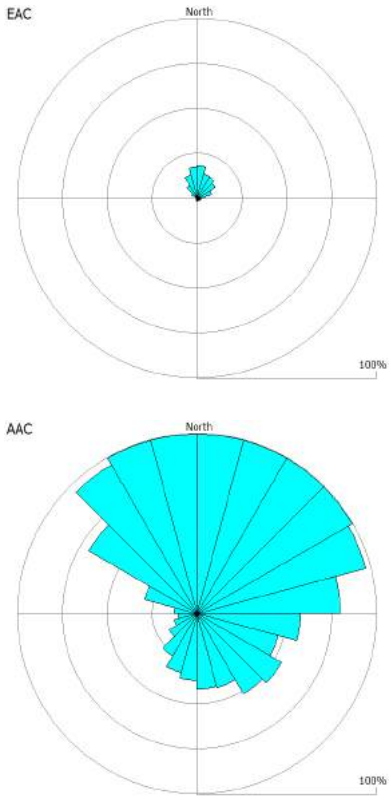
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-03 (No point description given)		
Date Out:	12-Aug-14	**Date In:**	19-Aug-14
Interval*:	7 days	**Our Ref:**	51346 / S-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 5.6
Absolute Area Coverage (AAC%) / interval = 59.3
Effective Area Coverage (EAC%) / day = 0.8
Absolute Area Coverage (AAC%) / day = 8.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	18.1	100.0	2.6	14.3
15°-30°	14.1	100.0	2.0	14.3
30°-45°	13.7	100.0	2.0	14.3
45°-60°	11.9	99.9	1.7	14.3
60°-75°	8.4	97.3	1.2	13.9
75°-90°	4.4	79.7	0.6	11.4
90°-105°	2.5	57.5	0.4	8.2
105°-120°	1.8	47.0	0.3	6.7
120°-135°	2.3	54.6	0.3	7.8
135°-150°	2.1	51.8	0.3	7.4
150°-165°	1.6	42.8	0.2	6.1
165°-180°	1.8	41.8	0.3	6.0
180°-195°	1.5	37.2	0.2	5.3
195°-210°	1.4	34.0	0.2	4.9
210°-225°	1.0	27.2	0.1	3.9
225°-240°	0.7	18.2	0.1	2.6
240°-255°	0.5	13.5	<0.1	1.9
255°-270°	0.5	10.8	<0.1	1.5
270°-285°	0.6	13.1	<0.1	1.9
285°-300°	1.3	30.5	0.2	4.4
300°-315°	3.8	69.7	0.5	10.0
315°-330°	8.3	95.7	1.2	13.7
330°-345°	13.4	100.0	1.9	14.3
345°-360°	17.3	100.0	2.5	14.3



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Dust Monitoring Results, October 2014 Sampling Event,
Burgard Industrial Park – SSI Area, Portland, Oregon
Bridgewater Group, 2014

BRIDGEWATER GROUP, INC.

Dust Monitoring Results
October 2014 Sampling Event
Burgard Industrial Park - SSI Area
Portland, Oregon

TO: Jim Orr/Oregon DEQ

CC: Mat Cusma/Schnitzer
Mark Bartee/Schnitzer

FROM: Ross Rieke/Bridgewater Group

DATE: November 10, 2014

This memorandum presents the results of the October 2014 dust monitoring event performed at the Schnitzer Steel (SSI) area of the Burgard Industrial Park (BIP) in Portland, Oregon (Figure 1, Figure 2). The dust monitoring was performed in accordance with the May 7, 2014 *Dust Monitoring Plan* (Dust Monitoring Plan), required as a Source Control Evaluation (SCE) effort pursuant to the terms of the June 13, 2000 *Voluntary Agreement for Remedial Investigation and Cleanup Measures* between Schnitzer and DEQ. The duration of the monitoring event was reduced from seven days to four days as proposed in the September 19, 2014 memorandum *Dust Monitoring Results, July and August 2014 Sampling Events* and as approved by DEQ in an October 6, 2014 email.

The purpose of the dust monitoring program is to support the evaluation of potential impacts to river and other offsite areas from airborne particulates. To accomplish this task, the Dust Monitoring Plan details the procedures to compare the dust levels at the perimeter of the SSI area relative to the dust levels at dust source areas within the SSI area and, as a result, assess the effectiveness of SSI dust control BMPs.

Dust Monitoring Methodology

The dust monitoring was performed using DustScan DS100 passive, directional dust gauges (Appendix A). Twelve monitoring pole stations were established within, around, and distant from the site (Figure 3). Photographs of the monitoring stations are provided in Appendix B. The approximate 3 ½-inch diameter by approximately 13-inches long cylindrical, sticky paper-covered gauges were placed on the station poles and then removed four days later. The gauge cylinders were taken into an enclosed office where the sticky paper was removed, mounted and sealed on transparent cover sheets, and shipped to the analytical laboratory. The analytical laboratory reports are provided in Appendix C.

The duration of the October 2014 dust monitoring event was four days. As noted above, DEQ approved reducing the duration from seven days to four days in an October 6, 2014 email. The October 2014 monitoring event was performed October 6, 2014 to October 10, 2014 with the gauges installed between 2 PM and 3 PM on October 6 and removed between 10:30 AM and Noon on October 10[1].

[1] The times of installation and removal were selected solely to meet personnel scheduling demands and are not expected to have had a material impact on the dust monitoring results.

Dust Monitoring Conditions

Weather Conditions

Weather conditions during the October 2014 event were monitored and recorded using the weather station established at the SSI site in early August 2014.

Figure 4 shows the wind rose during the October 2014 event. As shown on the wind rose, the winds were generally light (less than 5 miles per hour) and the predominant wind direction was from the northwest.

Figure 5 presents the daily temperature, humidity, and rainfall data for the October 2014 monitoring event. No measurable rainfall occurred during the October 2014 event. The last precipitation prior to the monitoring event was 0.14 inches occurring on September 30, 2014. Temperature during the October 2014 event ranged from a high of 82.5 degrees on October 6 to a low of 54.6 degrees on October 10. Humidity for the October 2014 event ranged from a high of 98 percent on October 10 to a low of 50 percent on October 6.

Operations During October 2014 Monitoring Event

The site operations were generally the same as for previous monitoring events and included normal scrap yard activities (scrap receiving, shredder, processed ferrous steel management, and paved and unpaved roadway traffic). Barge unloading (of unprocessed scrap metal) occurred during the October 2014 event. Ship loading (of processed ferrous steel) did not occur during the October 2014 event. Dust generating activities occurring in the area around the SSI site included vehicle traffic on Port of Portland Terminal 4, Northwest Pipe and Portland Container sites, and vehicle traffic on Burgard Way and Burgard Road.

Dust Monitoring Results

The dust monitoring analytical laboratory reports (Appendix C) present the dust monitoring data in two metrics: Absolute Area Coverage (AAC) and Effective Area Coverage (EAC). AAC values (expressed as a percentage) represent the amount of dust captured on the monitoring device and provide a direction-specific measure of the overall amount of dust flux over the monitoring period at the monitoring station. As such, the AAC provides the appropriate measurement to support the objective of the dust monitoring program. EAC values pertain to the color or opacity of the dust and therefore may provide an indication of the visual impact of dust generating activities, and possibly qualitative information on the presence of different sources of dust, but otherwise are not relevant to the dust monitoring objective.

Figure 6 presents the directional AAC values for the October 2014 monitoring event. Table 1 presents the maximum and average (around the circumference) AAC values for each station. Table 1 includes data from the previous July 2014 and August 2014 events[2]. Figure 7 presents a bar chart showing the relative AAC values for the source, perimeter[3], and background stations. Tables of directional AAC values are presented for each station in the analytical laboratory reports provided in Appendix C.

[2] The duration of the July 2014 and August 2014 monitoring events was seven days as compared to the four day duration of the October 2014 event. Thus, notwithstanding all other factors, the AAC values for the October 2014 would be expected to be less than those measured for the July 2014 and August 2014 events.

[3] Based on the relatively high AAC values, the dust flux direction indicated by the "dust rose" (from the north, see Figure 6), and the lack of SSI sources in the area, the dust levels at station P8 are clearly impacted by offsite activities, are not considered representative of dust generated from the SSI activities and are not included in comparison of perimeter and source dust measurements. The dust levels measured at station P8 are included in the discussion of background dust level (i.e., along with station A1 measurements).

The AAC values presented in the figures, table, and Appendix C are the result of a computer-based, optical analytical process that measures the relative amount of dust captured on the sticky paper placed on the monitoring cylinder. The AAC values are useful to compare with other AAC values in assessing the qualitative change in dust levels between monitoring stations, as well as the predominant direction(s) of dust flux at each station. AAC values do not represent any standard particulate measurement such as PM10 or dust concentration (e.g., mg/m^3) and a particular AAC value does not represent either "high" or "low" dust levels (other than as compared to other monitoring stations).

The results of the October 2014 dust monitoring events indicate the following:

- As noted on Table 1, there is an approximate 90 percent reduction in dust flux (as measured by the average AAC) at the SSI site perimeter relative to the dust flux at the SSI dust sources for the October 2014 event. This dramatic reduction in the dust levels from the sources to the site perimeter is consistent with the reductions observed in the July and August monitoring events.[4]
- The background stations (A1 and P8) indicate that non-SSI dust sources are present in the area around the SSI site and likely contribute to the dust levels measured on the SSI site and at the perimeter stations. As noted on Table 1, the average background dust flux was more than 150 percent of the average source dust flux in the October 2014 monitoring event. In other words, the dust fluxes at the background stations were 50 percent *greater* than the dust flux at the stations representative of dust emissions from targeted SSI activities. The relatively higher dust levels at the background locations relative to the SSI sources are consistent with the July 2014 and August 2014 monitoring event results.

Next Dust Monitoring Event

The next dust monitoring event is scheduled for January 2015.

Attachments:

Table 1 – Dust Monitoring Data
Figure 1 – Site Location Map
Figure 2 – Site Plan, Burgard Industrial Park
Figure 3 – Dust Monitoring Station Locations
Figure 4 – Wind Rose, October 2014 Dust Monitoring Event
Figure 5 – Daily Temperature, Humidity, and Rainfall, October 2014 Dust Monitoring Event
Figure 6 – AAC Values, October 2014 Dust Monitoring Event
Figure 7 – Average AAC Percentages
Appendix A – DustScan Manufacturer Literature
Appendix B - Dust Monitoring Station Photographs
Appendix C - Analytical Laboratory Reports

[4] The 90 percent reduction is greater than the 70 to 80 percent reduction noted for the July 2014 and August 2014 dust monitoring events results. However, the shortened October 2014 monitoring event duration provided greater resolution of the percent reduction as the longer duration for the July and August events resulted in saturation of the cylinders which, essentially, truncated or censored the percent reduction calculations for these events (See the September 19, 2014 Bridgewater Group memorandum presenting the July and August 2014 monitoring events results). Thus, the percent source-to-perimeter reductions actually occurring during the July and August events were likely greater than the reported 70 to 80 percent and closer to the 90 percent reduction noted for the October event using higher resolution analysis.

Table

Table 1
Dust Monitoring Data
Burgard Industrial Park - SSI

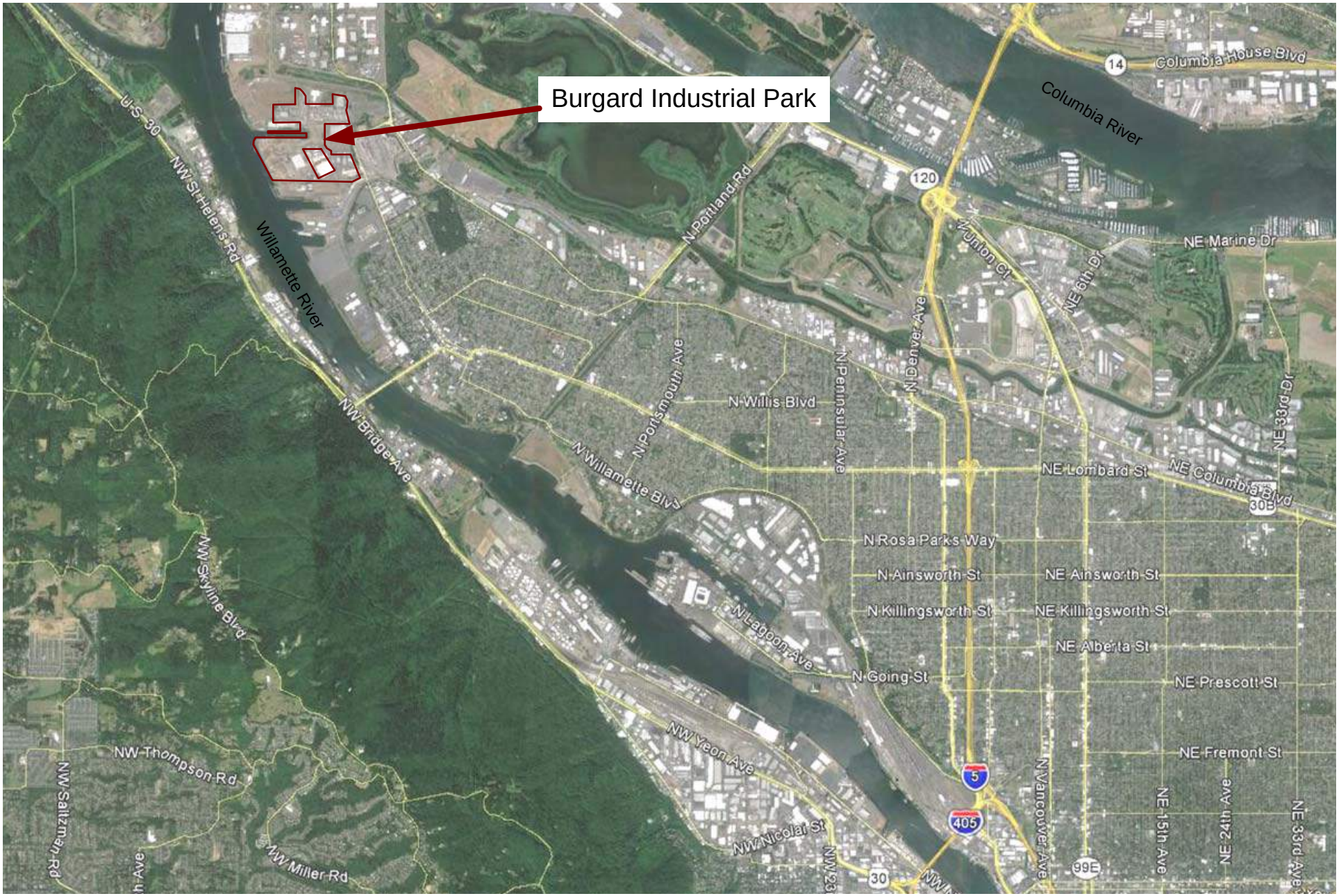
		AAC (Percent)[1]					
		Jul-14		Aug-14		Oct-14[2]	
Station	Location	Average	Max[3]	Average	Max[3]	Average	Max[3]
S1	Scrap pile construction/deconstruction	100.0	100.0	90.6	100.0	34.0	97.7
S2	Dock activities/shear (source)	64.5	100.0	65.0	100.0	48.9	100.0
S3	Shredder residue loading (source)	72.2	100.0	59.3	100.0	10.8	32.5
P1	South perimeter	32.6	61.9	50.1	99.3	1.6	6.7
P2	Southwest perimeter	9.4	23.3	24.6	99.7	4.5	9.5
P3	West perimeter	18.5	62.3	13.4	62.2	1.4	5.1
P4	Northwest perimeter	7.4	11.9	10.1	45.5	0.8	3.2
P5	North perimeter	24.2	39.3	19.5	42.9	1.0	3.3
P6	Northeast perimeter	24.1	61.8	23.7	51.9	7.0	26.7
P7	Northeast perimeter	9.5	27.3	9.1	20.9	3.3	11.4
P8	Northeast background	95.6	100.0	96.5	100.0	69.4	100.0
A1	West background	74.9	100.0	79.7	100.0	28.5	83.7
Average All Stations		44.4	65.7	45.1	76.9	17.6	40.0
Average Source		78.9	100.0	71.6	100.0	31.2	76.7
Average Perimeter		18.0	41.1	21.5	60.3	2.8	9.4
Average Background		85.3	100.0	88.1	100.0	48.9	91.9
Percent Reduction From Average Source to Average Perimeter		77%	59%	70%	40%	91%	88%
Average Background as Percent of Average Source		108%	100%	123%	100%	157%	120%

1 - See text, Appendix A, and Appendix C for description of Absolute Area Coverage (AAC).

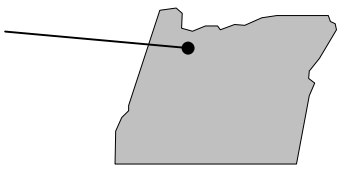
2 - The duration of the October 2014 event was four days while the duration of the July 2014 and August 2014 events were seven days. Thus, notwithstanding all other factors, the October 2014 AAC values would be expected to be less than the July 2014 and August 2014 AAC values.

3 - Given the presence of 100% values, calculations of averages, reductions, and comparisons using maximum AACs at bottom of table are approximate.

Figures



Portland, Oregon



N

Approximate Scale

5000 feet

Figure 1
Site Location Map
Burgard Industrial Park

BRIDGEWATER GROUP, INC.

Base photograph July 2014

Base photograph July 2014

N

Approximate Scale

400 Feet

Figure 2
Site Plan
Burgard Industrial Park
Portland, Oregon

BRIDGEWATER GROUP, INC.

Base photograph July 2014

Figure 3
Dust Monitoring Station Locations
Burgard Industrial Park - SSI
Portland, Oregon

BRIDGEWATER GROUP, INC.

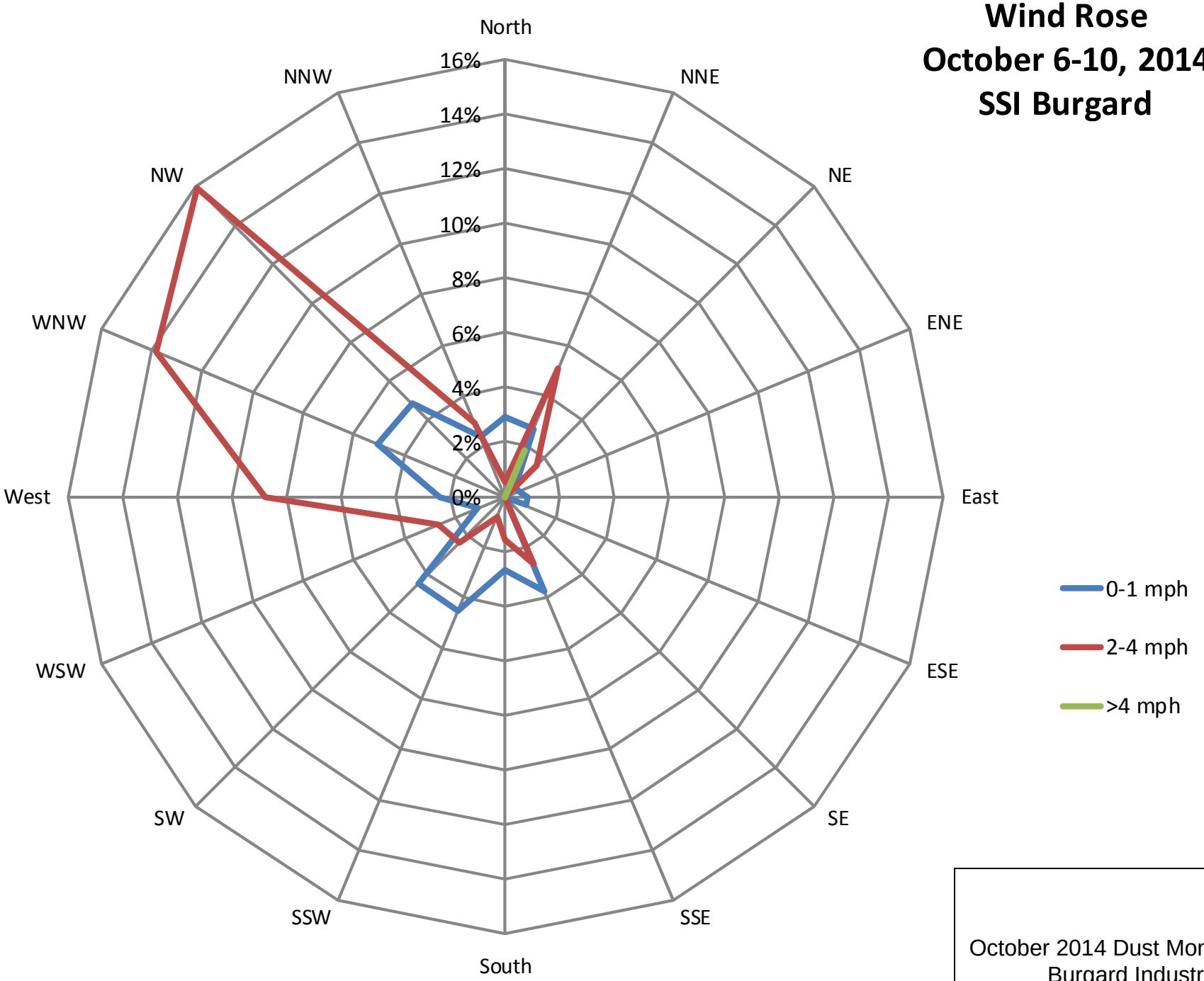
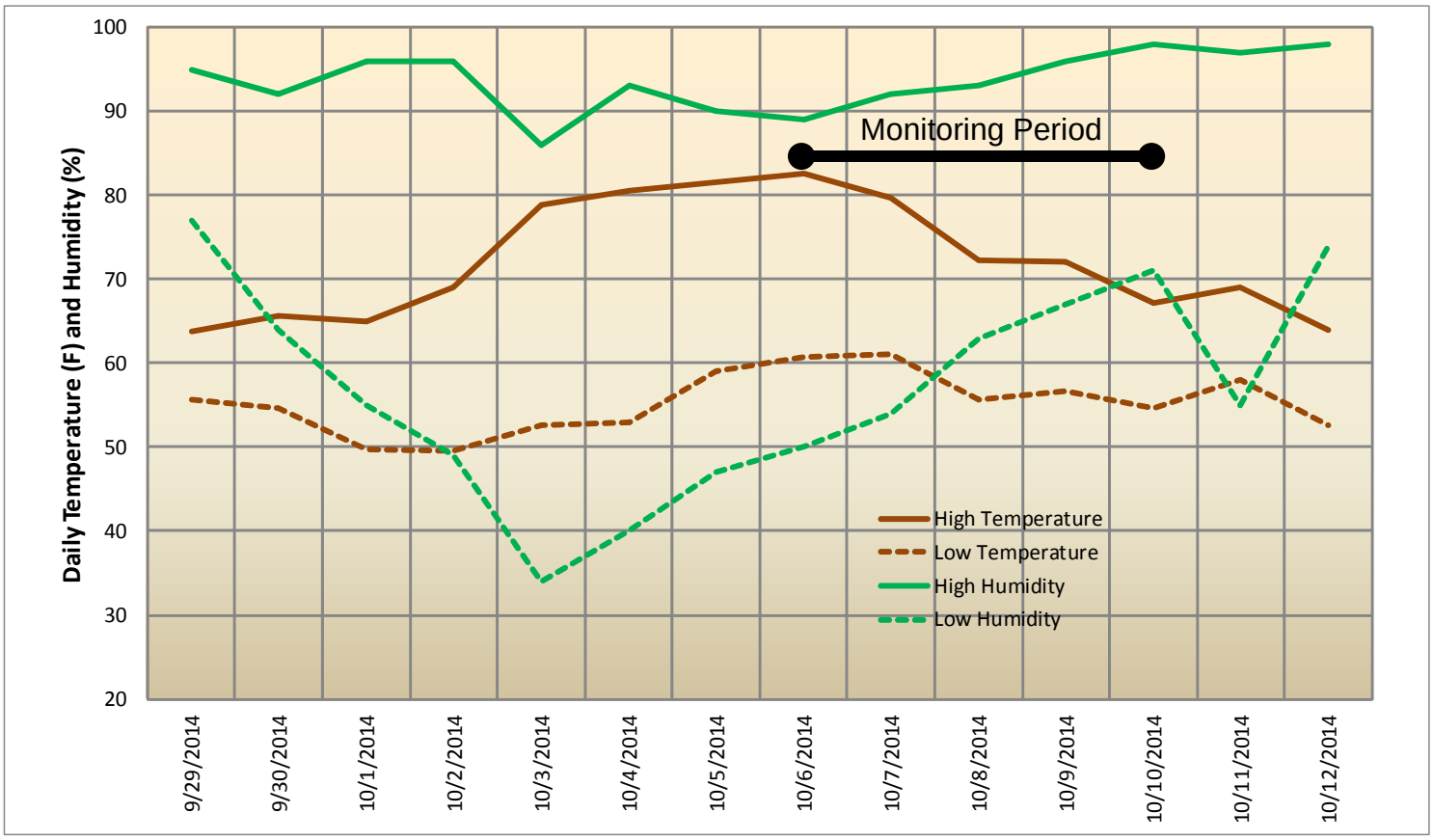


Figure 4
Wind Rose
October 2014 Dust Monitoring Event
Burgard Industrial Park - SSI

BRIDGEWATER GROUP, INC.



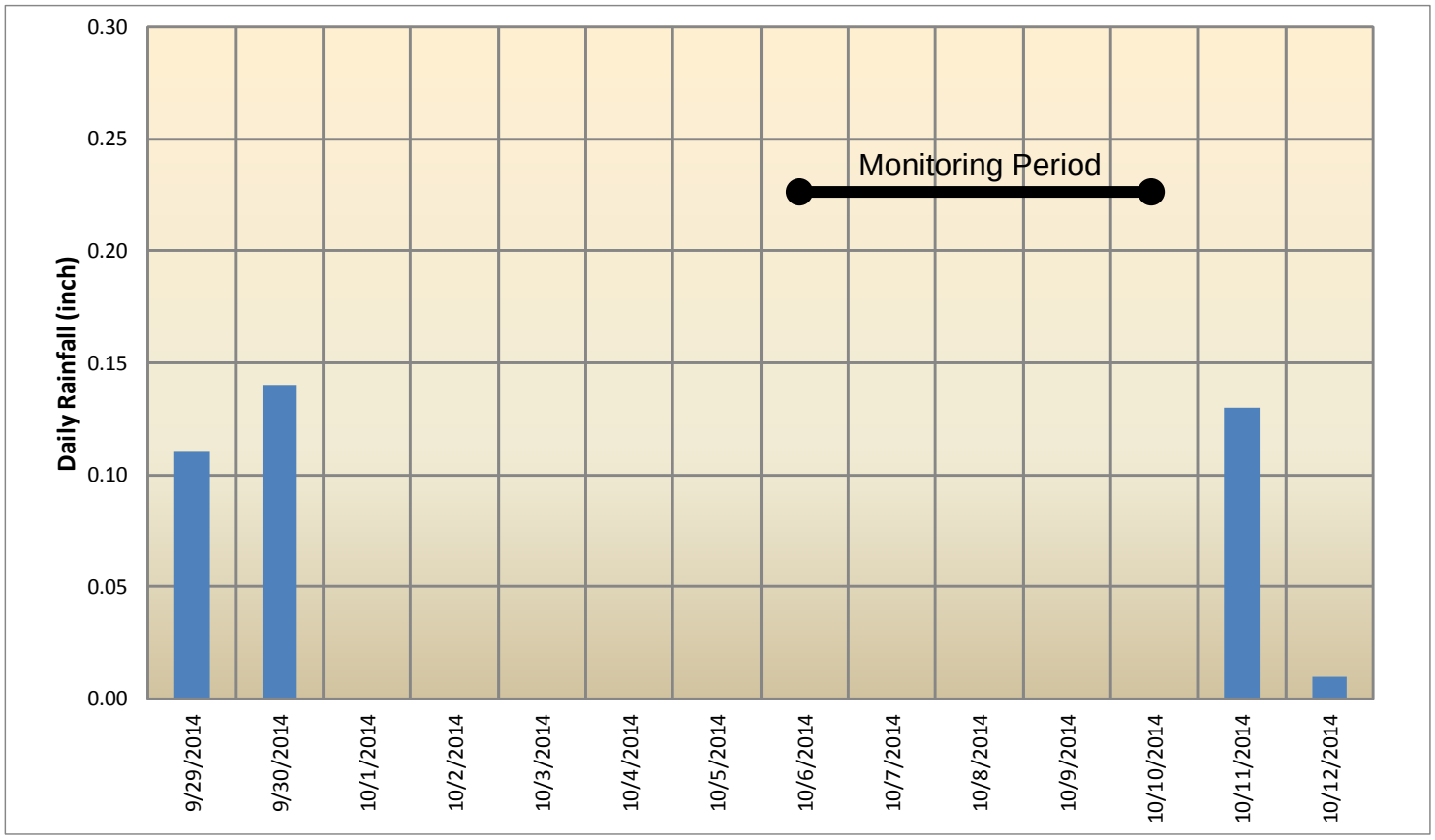


Figure 5
Daily Temperature, Humidity, and Rainfall
October 2014 Dust Monitoring Event
Burgard Industrial Park - SSI

BRIDGEWATER GROUP, INC.

Dust Monitoring Station

See text, Appendix A, and Appendix C for description of Absolute Area Coverage (AAC) parameter

N

Approximate Scale

250 Feet

Base photograph July 2014

Figure 6
AAC Values
October 2014 Dust Monitoring Event
Burgard Industrial Park - SSI
Portland, Oregon

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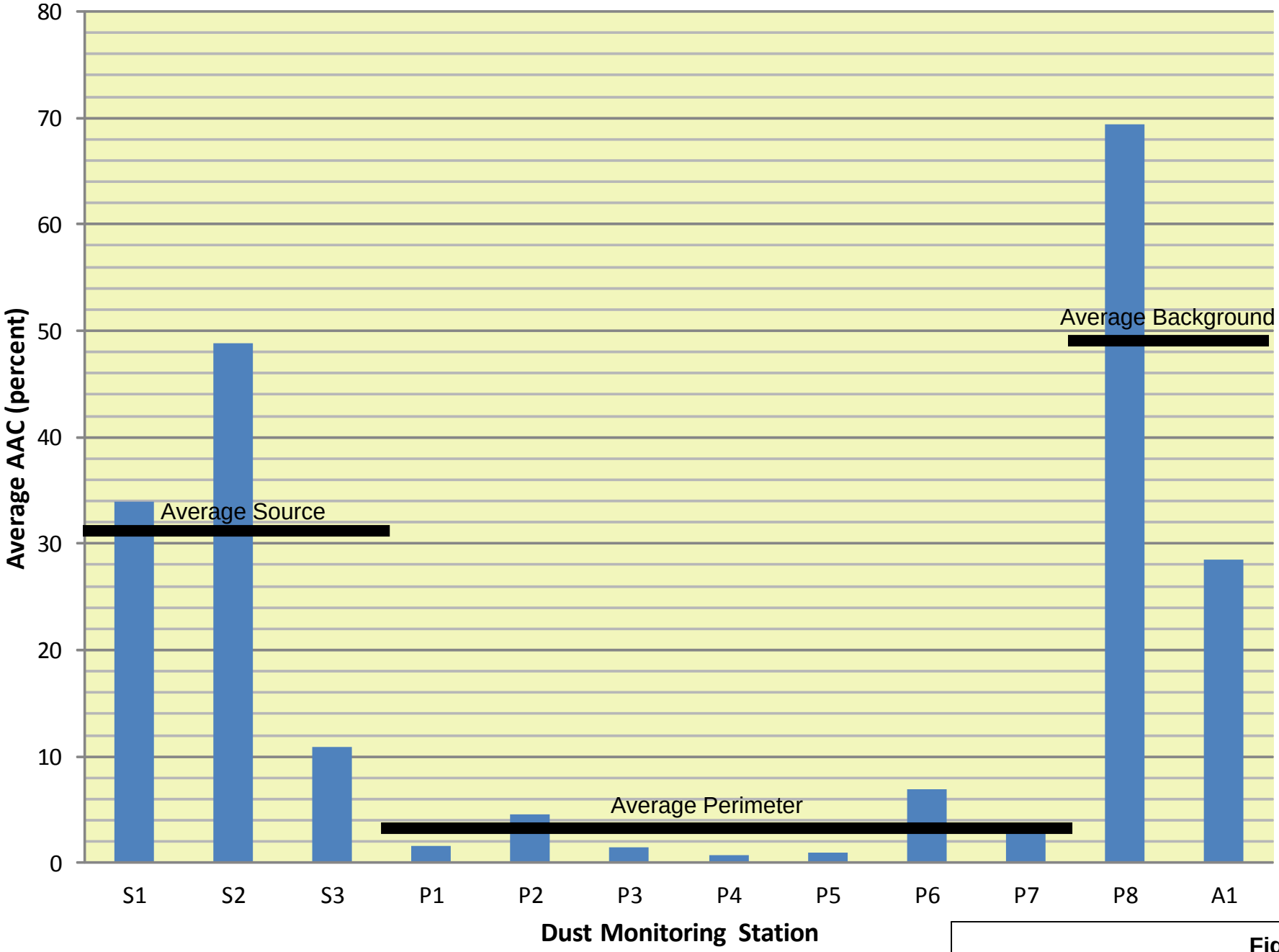

Figure 7
Average AAC Percentages
October 2014 Dust Monitoring Event
Burgard Industrial Park - SSI

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Appendix A – DustScan Manufacturer Literature

DustScan

Dust Monitoring and Dust Consultancy Services

Guidance Note No. 1: Nuisance Dust Monitoring

This guidance note is based on our experience in dust monitoring and consultancy. It is part of a series aiming to provide a basic guide to dust and dust monitoring.

DustScan Guidance Note No. 1 discusses 'nuisance dust': what it is, its significance and why, when, where and how it can be measured.

What is 'nuisance dust'?

'Dust' is a generic term used to describe particulate matter 1 – 75 µm (micron) in diameter, produced through the crushing and abrasion of materials. It is often considered in two categories:

a) The size fraction up to 10 µm (PM_{10}), which is used as an indicator of local air quality and forms part of National Air Quality Standards. PM_{10} are measured to agreed standards, and usually expressed as a concentration over time: mg/m^3/day.

b) Nuisance dust. There are no standard definitions, or universal monitoring methods, for nuisance dust. It is now becoming accepted that dust above10 µm may be considered nuisance dust. Nuisance dust can be long-term (or chronic) – such as the long-term soiling of paintwork – or short-term (acute) – such as a short-lived dust cloud. Dust nuisance is the *effect* caused by dust.

The effect of dust is a matter of human perception thus is difficult to quantify. How it is perceived varies according to characteristics of the dust such as its colour, contrast and rate of accumulation; and local factors such as socio-economic conditions and employment.

Why does nuisance dust matter?

Dust may be an inevitable consequence of primary industry such as quarrying and mineral processing. Other processes, such as landfill, demolition and agriculture can also lead to dust generation. Some activities, such as quarrying and waste management, are controlled by specific legislation and guidance. Specific guidance has been produced for particular industries, such as Minerals Policy Statement (MPS) 2, Annex 1: Dust (ODPM, 2005) and Technical Guidance Document M17: Monitoring of particulate matter in ambient air around waste facilities (Environment Agency, 2004).

The size range and amount of dust particles generated by different activities vary according to the processes taking place. Weak materials such as coal or chalk can crumble easily and produce dust, but dust may also be generated due to high energy activities such as drilling and blasting, or through the crushing of strongly cohesive materials.

At waste facilities, the types and amounts of dust generated can be very varied thus difficult to predict. Particle behaviour will be highly variable, and there is no simple correlation between particle size and deposition rate.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Guidance Note No. 1: Nuisance Dust Monitoring

For a site operator, the potential for dust nuisance can be addressed in consents and permits – permissions may have conditions like *"…the operation will not lead to excessive dust nuisance…"* or *"…the operation will not cause pollution beyond the site boundary …"*. MPS 2, Annex 1 states: *"… Where these effects [dust from surface mineral workings] cannot be adequately controlled or mitigated, planning permission should be refused. …"* (ODPM, 2005) and Technical Guidance Document (Monitoring) M17 states that: *"…measures must be taken to minimise nuisance arising from the landfill due to dust…".* (Environment Agency, 2004). So to establish the effectiveness of control measures, monitoring is required.

Consequently how nuisance dust is monitored and assessed can be critical to the smooth running of an operation.

When should nuisance dust be monitored?

Ideally, baseline conditions should be established before an operation commences. This is recommended as the first stage of a Dust Assessment Study at mineral workings, and as part of an air quality monitoring programme before a new waste facility is established. Furthermore, the most appropriate methods to use for baseline testing are the simplest and least expensive.

Dust monitoring should continue during operations both to observe site emissions and ensure compliance with planning conditions. Liaison with local authorities and other regulatory bodies may require longer periods or continual monitoring. Frequency of monitoring should be sufficient to take weather conditions and seasonality into account; and observe changes in site practice through regular operations.

Most low-cost dust monitoring systems are of the periodic, interval-based type. Equipment is typically left out for periods of between a few days and a month. To keep costs down, equipment should be straightforward for site staff to use.

Where should nuisance dust be measured?

Whilst dust nuisance can be seen to be the impact of dust settlement at receptors, it is generally measured on or near site boundaries – i.e. on pathways, at or near sources of dust. Consequently the type and position of dust gauges is of paramount importance – equipment that is best suited to monitoring at receptors might not be appropriate on pathways, and vice versa.

How can nuisance dust be measured?

Nuisance dust is monitored either directionally (dust flux) or non-directionally (dust settlement). Directional gauges sample dust that is suspended in an airstream, such as on the pathway from source to receptor. Non-directional gauges sample dust falling out of an airstream, such as at a receptor.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

DustScan

Dust Monitoring and Dust Consultancy Services

Guidance Note No. 1:
Nuisance Dust Monitoring

Directional and non-directional nuisance dust samples are quantified in one of two very different ways; either the mass deposition rate or the soiling effect. In the first case, the weight of material collected over a period of time is determined; in the second, changes in the optical properties of a surface (such as loss of gloss, or obscuration) are measured.

There are 'custom and practice' guidelines for dust flux and dust settlement, and for dust mass and dust soiling, although the units used by different methods are generally not interchangeable. Consequently care should be taken to apply the appropriate method for the monitoring requirement. Please refer to Guidance Note No. 3 "Directional Dust Data Assessment" for information on DustScan directional monitoring methodology.

What types of equipment are available for nuisance dust monitoring?

DustScan Ltd supply directional and non-directional dust monitoring equipment to measure both dust mass and dust soiling. Please contact us for more information or visit www.dustscan.co.uk.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Guidance Note No. 2:
Using the DustScan directional dust gauge

This guidance note sets out the methodology behind DustScan directional dust monitoring. It describes the DustScan directional dust monitoring methodology: how, and why, it works; what the results are and what they mean; and where and how to use the gauges.

The directional dust gauge is the principal component of DustScan dust monitoring equipment. DustScan is a ‘passive’ method that does not need a power supply. It samples all sizes of ambient dust and is ideal for nuisance dust monitoring. The directional gauge can be used in any location where dust movement occurs and can help to detect dust pathways and potential nuisance. Directional gauges are used at quarries, landfills, opencast coal sites, demolition and construction sites, remediation works, materials stockpiles and recycling plants.

DustScan gauges are discreet and unobtrusive, and are easy to install and operate. They can be installed and used by most site staff after basic training.

The photos above show the wide range of sites where our gauges can be used

DustScan directional gauges use a special adhesive dust collection slide (‘sticky pad’) which is mounted on a replaceable cylindrical monitoring head. The monitoring head fits onto a 2-metre stand. An alignment peg is provided as the gauge must be aligned to north when it is first installed. An alignment tool can be supplied to facilitate orientation. Correct alignment ensures repeatable dust sampling each time the dust monitoring heads are changed. The monitoring head collects fugitive dust coming from 360° around the gauge.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Guidance Note No. 2:
Using the DustScan directional dust gauge

Once the protective layer is removed the dust monitoring head samples continuously whilst exposed. It is normally left to sample for 1 to 2 weeks. At the end of the sampling period, the head is removed and placed in the protective carrying flask and a replacement head fitted. Used sampling heads are sent to the DustScan offices for computer analysis in the transport boxes provided.

For guidance on the DustDisc dust settlement gauge, the DS100-F combined Frisbee deposition and directional dust gauge and the DS500 combined PM_{10} and directional dust gauge, please refer to other Briefing Notes in this series.

What is the DustScan directional dust gauge?

The DustScan directional dust gauge measures the nuisance effect caused by dust in flux. Dust in flux is particulate matter that is suspended in an airstream on a pathway between its source and its potential receptors. In contrast, settlement gauges such as the DustDisc and the Frisbee deposition gauge measure dust deposition. Deposited dust has settled out of an airstream – wherever it is measured. Consequently dust in flux and deposited dust and are not necessarily the 'same' dust.

How does the DustScan directional gauge work?

DustScan is a 'passive' monitoring method, so it does not require a power supply. With the directional gauge, dust in flux impacts onto the exposed adhesive surface of the sampling cylinder for subsequent computer analysis by us. The sampling cylinder fits onto a monitoring head which is set to north when the gauge is installed, for repeatable directional sampling.

We recommend sampling intervals of 1 - 2 weeks. At the end of each sampling interval the cylinder and sample are sent back to us in the protective container provided. We seal the sample, scan it and measure the directional dusting on it using DustScan software.

Why use the DustScan directional dust gauge?

The directional gauge is ideal for monitoring both dust propagation and dust pathways. Potentially dusty activities on, or off, a site may lead to dust propagation. Dust pathways are also significant on site boundaries, as this is where dust leaving a site may lead to possible nuisance at an off-site receptor. Well-positioned DustScan gauges can help identify the location of dust sources and pathways on and off a site.

The DustScan directional dust gauge can be used to assess the direction, magnitude, and significance of dust pathways and the likelihood of complaint due to dust.

The directional information from DustScan monitoring can be used to identify and quantify sources of dust from various site activities. This can be used to evaluate the effectiveness of mitigation measures and assist site environmental management.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Guidance Note No. 2:
Using the DustScan directional dust gauge

What do the DustScan results mean?

Directional dust levels are reported as Absolute Area Coverage (AAC%) - the dust coverage irrespective of colour; and Effective Area Coverage (EAC%) - the soiling caused by that dust.

AAC% measures dusting irrespective of colour so all dust, dark or light, contributes to AAC%. Therefore it is an excellent method to identify and discriminate between dust sources – for example there may be more than one in a locality, such as an on-site process and off-site activities. Different AAC% levels from different directions can indicate the scale of these activities.

EAC% is used to measure the potential nuisance caused by dust soiling. As it relates to the darkness of dust, dark-coloured dusts such as coal will have a proportionately greater EAC% for any mass than light-coloured dusts, such as chalk. EAC% measures the likelihood of nuisance caused by dust soiling.

Nuisance criteria have been developed for use with these measures – please refer to Guidance Note No. 3 ‘Directional Dust Data Assessment’.

Where should DustScan directional dust gauges be used?

DustScan directional gauges are typically installed on site boundaries and should be well away from obstructions such as buildings, tall trees or overhanging vegetation. As with all flux-monitoring systems, there should be a clear air flow to the monitoring head.

The directional gauge must be securely fixed in a vertical position and is normally installed so that the protective rain guard is 2 metres from ground level. A rigid stand is supplied to enable fixing at the correct height – please refer to our installation instructions for more information.

How should DustScan directional dust gauges be used?

DustScan gauges can be used in a range of monitoring applications:

- During baseline studies to establish dust levels before a process, such as a quarry extension, takes place
- As part of an environmental monitoring strategy during the lifetime of a project
- In one-off monitoring programmes such as remediation works, demolition, blasting, etc

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Guidance Note No. 2:
Using the DustScan directional dust gauge

Boundary monitoring typically requires 4 gauges. Larger sites may need one or two more, and some sites need less. The number required depends on the level of information required and the size and complexity of the site. Please contact us to discuss your requirements.

- One DustScan gauge could be used to monitor dust near a single ‘point source’ such as a stockpile
- Two gauges could be used to monitor dust transit across a site – for example upwind and downwind
- Three or more gauges are required for boundary monitoring

DustScan can be used in conjunction with other monitoring methods. We have experience in other methods and can advise their suitability as required.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

Appendix B – Dust Monitoring Station Photographs

Monitoring Point S1

Monitoring Point S2

Monitoring Point S3

Monitoring Point P1

Monitoring Point P2

Monitoring Point P3

Monitoring Point P4

Monitoring Point P5

Monitoring Point P6

Monitoring Point P7

Monitoring Point P8

Monitoring Point A1

Appendix C – Analytical Laboratory Reports

DustScan Ltd
Dust Monitoring and Dust Consultancy Services

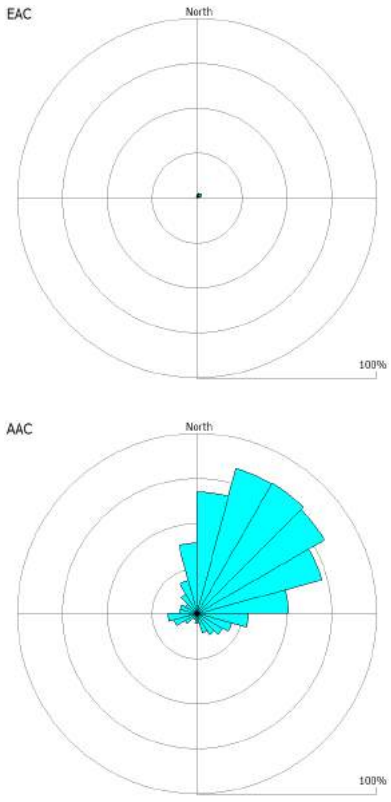
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	A-01 (No point description given)		
Date Out:	06-Oct-14	**Date In:**	10-Oct-14
Interval*:	4 days	**Our Ref:**	52942 / A-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.0
Absolute Area Coverage (AAC%) / interval = 28.5
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 7.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	2.4	67.8	0.6	16.9
15°-30°	3.2	83.4	0.8	20.8
30°-45°	3.3	83.7	0.8	20.9
45°-60°	3.3	81.9	0.8	20.5
60°-75°	2.7	71.9	0.7	18.0
75°-90°	1.7	50.8	0.4	12.7
90°-105°	0.9	28.9	0.2	7.2
105°-120°	0.6	20.0	0.1	5.0
120°-135°	0.5	16.8	0.1	4.2
135°-150°	0.4	13.7	<0.1	3.4
150°-165°	0.3	11.2	<0.1	2.8
165°-180°	0.1	5.0	<0.1	1.3
180°-195°	0.1	5.5	<0.1	1.4
195°-210°	<0.1	3.4	<0.1	0.9
210°-225°	<0.1	3.8	<0.1	0.9
225°-240°	0.2	8.0	<0.1	2.0
240°-255°	0.4	13.4	<0.1	3.3
255°-270°	0.4	16.1	0.1	4.0
270°-285°	0.3	10.1	<0.1	2.5
285°-300°	0.2	9.9	<0.1	2.5
300°-315°	0.2	7.6	<0.1	1.9
315°-330°	0.3	12.7	<0.1	3.2
330°-345°	0.5	19.2	0.1	4.8
345°-360°	1.1	39.6	0.3	9.9



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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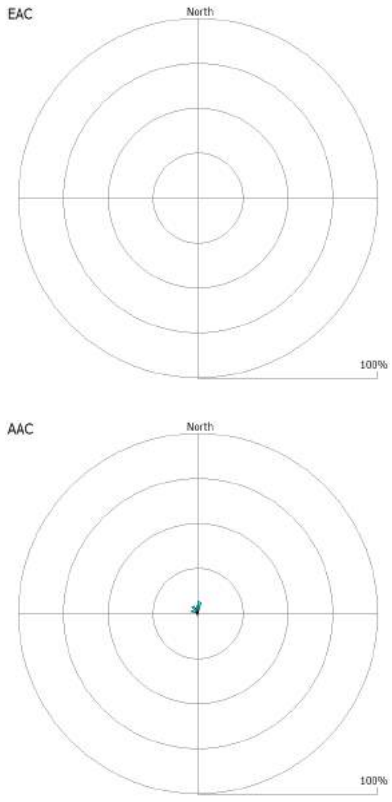
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-01 (No point description given)		
Date Out:	06-Oct-14	**Date In:**	10-Oct-14
Interval*:	4 days	**Our Ref:**	52943 / P-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.0
Absolute Area Coverage (AAC%) / interval = 1.5
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.2	6.7	<0.1	1.7
15°-30°	<0.1	0.6	<0.1	0.2
30°-45°	<0.1	0.7	<0.1	0.2
45°-60°	<0.1	0.6	<0.1	0.2
60°-75°	<0.1	0.7	<0.1	0.2
75°-90°	<0.1	0.2	<0.1	<0.1
90°-105°	<0.1	0.4	<0.1	0.1
105°-120°	<0.1	0.1	<0.1	<0.1
120°-135°	<0.1	0.1	<0.1	<0.1
135°-150°	<0.1	<0.1	<0.1	<0.1
150°-165°	<0.1	0.1	<0.1	<0.1
165°-180°	<0.1	0.6	<0.1	0.1
180°-195°	<0.1	1.6	<0.1	0.4
195°-210°	<0.1	0.5	<0.1	0.1
210°-225°	<0.1	0.7	<0.1	0.2
225°-240°	<0.1	0.7	<0.1	0.2
240°-255°	<0.1	0.7	<0.1	0.2
255°-270°	<0.1	1.2	<0.1	0.3
270°-285°	<0.1	0.8	<0.1	0.2
285°-300°	<0.1	4.0	<0.1	1.0
300°-315°	<0.1	1.6	<0.1	0.4
315°-330°	<0.1	5.3	<0.1	1.3
330°-345°	<0.1	3.6	<0.1	0.9
345°-360°	<0.1	4.4	<0.1	1.1



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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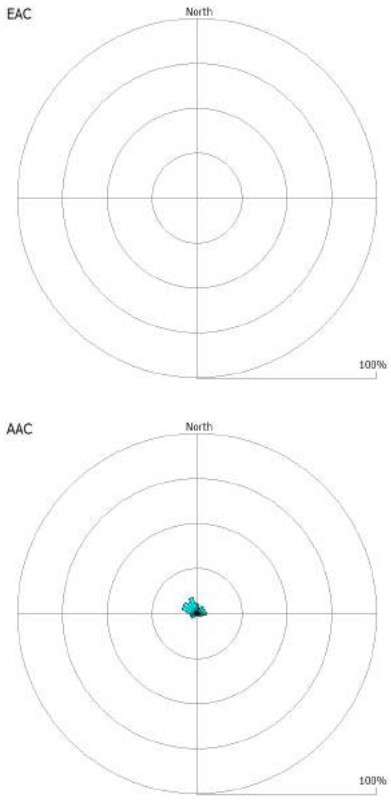
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-02 (No point description given)		
Date Out:	06-Oct-14	**Date In:**	10-Oct-14
Interval*:	4 days	**Our Ref:**	52944 / P-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.1
Absolute Area Coverage (AAC%) / interval = 4.5
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.1	5.0	<0.1	1.3
15°-30°	<0.1	3.8	<0.1	0.9
30°-45°	0.1	5.1	<0.1	1.3
45°-60°	0.1	4.8	<0.1	1.2
60°-75°	0.1	4.8	<0.1	1.2
75°-90°	0.1	5.2	<0.1	1.3
90°-105°	0.2	5.2	<0.1	1.3
105°-120°	<0.1	3.4	<0.1	0.9
120°-135°	<0.1	2.9	<0.1	0.7
135°-150°	<0.1	2.0	<0.1	0.5
150°-165°	<0.1	1.2	<0.1	0.3
165°-180°	<0.1	0.5	<0.1	0.1
180°-195°	<0.1	1.4	<0.1	0.4
195°-210°	<0.1	1.4	<0.1	0.4
210°-225°	<0.1	2.8	<0.1	0.7
225°-240°	<0.1	3.9	<0.1	1.0
240°-255°	0.1	4.2	<0.1	1.1
255°-270°	<0.1	3.7	<0.1	0.9
270°-285°	0.1	5.9	<0.1	1.5
285°-300°	0.2	8.9	<0.1	2.2
300°-315°	0.2	9.1	<0.1	2.3
315°-330°	0.2	7.5	<0.1	1.9
330°-345°	0.3	9.5	<0.1	2.4
345°-360°	0.2	6.3	<0.1	1.6



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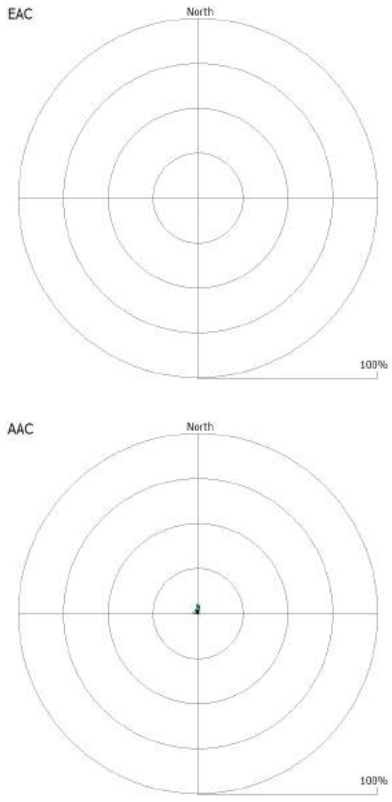
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-03 (No point description given)		
Date Out:	06-Oct-14	**Date In:**	10-Oct-14
Interval*:	4 days	**Our Ref:**	52945 / P-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.0
Absolute Area Coverage (AAC%) / interval = 1.2
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.1	4.5	<0.1	1.1
15°-30°	<0.1	1.9	<0.1	0.5
30°-45°	<0.1	0.4	<0.1	<0.1
45°-60°	<0.1	0.4	<0.1	0.1
60°-75°	<0.1	0.3	<0.1	<0.1
75°-90°	<0.1	0.9	<0.1	0.2
90°-105°	<0.1	<0.1	<0.1	<0.1
105°-120°	<0.1	1.1	<0.1	0.3
120°-135°	<0.1	0.8	<0.1	0.2
135°-150°	<0.1	0.2	<0.1	<0.1
150°-165°	<0.1	0.3	<0.1	<0.1
165°-180°	<0.1	0.2	<0.1	<0.1
180°-195°	<0.1	<0.1	<0.1	<0.1
195°-210°	<0.1	0.3	<0.1	<0.1
210°-225°	<0.1	0.5	<0.1	0.1
225°-240°	<0.1	<0.1	<0.1	<0.1
240°-255°	<0.1	1.0	<0.1	0.2
255°-270°	<0.1	0.5	<0.1	0.1
270°-285°	<0.1	3.1	<0.1	0.8
285°-300°	<0.1	1.7	<0.1	0.4
300°-315°	<0.1	1.4	<0.1	0.4
315°-330°	<0.1	3.2	<0.1	0.8
330°-345°	<0.1	2.0	<0.1	0.5
345°-360°	0.1	5.1	<0.1	1.3



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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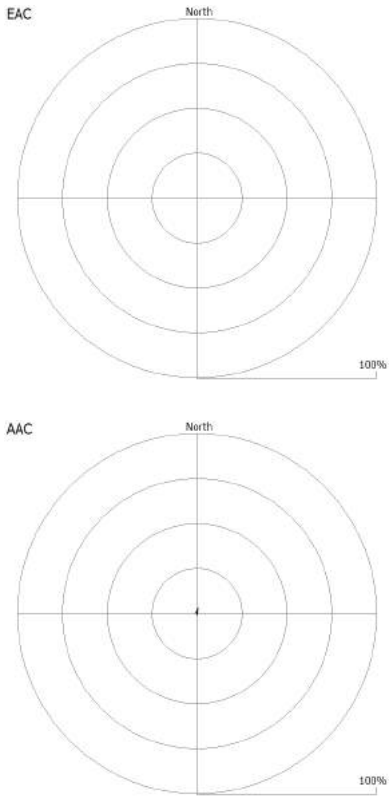
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-04 (No point description given)		
Date Out:	06-Oct-14	**Date In:**	10-Oct-14
Interval*:	4 days	**Our Ref:**	52946 / P-04 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.0
Absolute Area Coverage (AAC%) / interval = 0.7
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.2

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.2	3.2	<0.1	0.8
15°-30°	<0.1	0.4	<0.1	<0.1
30°-45°	<0.1	0.2	<0.1	<0.1
45°-60°	<0.1	0.8	<0.1	0.2
60°-75°	<0.1	0.6	<0.1	0.2
75°-90°	<0.1	0.2	<0.1	<0.1
90°-105°	<0.1	0.1	<0.1	<0.1
105°-120°	<0.1	0.4	<0.1	0.1
120°-135°	<0.1	0.2	<0.1	<0.1
135°-150°	<0.1	0.7	<0.1	0.2
150°-165°	<0.1	0.5	<0.1	0.1
165°-180°	<0.1	<0.1	<0.1	<0.1
180°-195°	<0.1	0.7	<0.1	0.2
195°-210°	<0.1	0.3	<0.1	<0.1
210°-225°	<0.1	0.2	<0.1	<0.1
225°-240°	<0.1	0.1	<0.1	<0.1
240°-255°	<0.1	<0.1	<0.1	<0.1
255°-270°	<0.1	0.9	<0.1	0.2
270°-285°	<0.1	0.7	<0.1	0.2
285°-300°	<0.1	0.8	<0.1	0.2
300°-315°	<0.1	1.2	<0.1	0.3
315°-330°	<0.1	1.3	<0.1	0.3
330°-345°	<0.1	1.8	<0.1	0.4
345°-360°	<0.1	1.6	<0.1	0.4



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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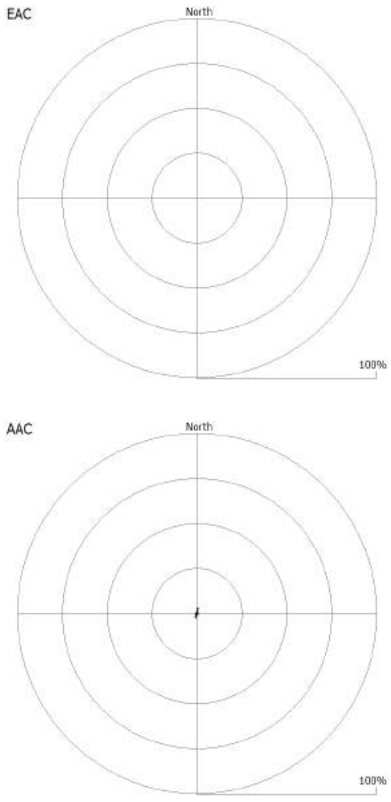
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-05 (No point description given)		
Date Out:	06-Oct-14	**Date In:**	10-Oct-14
Interval*:	4 days	**Our Ref:**	52947 / P-05 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.0
Absolute Area Coverage (AAC%) / interval = 1.0
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	<0.1	3.3	<0.1	0.8
15°-30°	<0.1	0.3	<0.1	<0.1
30°-45°	<0.1	0.7	<0.1	0.2
45°-60°	<0.1	0.2	<0.1	<0.1
60°-75°	<0.1	0.9	<0.1	0.2
75°-90°	<0.1	1.2	<0.1	0.3
90°-105°	<0.1	0.2	<0.1	<0.1
105°-120°	<0.1	0.6	<0.1	0.2
120°-135°	<0.1	1.3	<0.1	0.3
135°-150°	<0.1	0.8	<0.1	0.2
150°-165°	<0.1	0.3	<0.1	<0.1
165°-180°	<0.1	0.9	<0.1	0.2
180°-195°	<0.1	1.9	<0.1	0.5
195°-210°	<0.1	3.1	<0.1	0.8
210°-225°	<0.1	2.2	<0.1	0.6
225°-240°	<0.1	0.9	<0.1	0.2
240°-255°	<0.1	0.7	<0.1	0.2
255°-270°	<0.1	1.1	<0.1	0.3
270°-285°	<0.1	0.7	<0.1	0.2
285°-300°	<0.1	0.3	<0.1	<0.1
300°-315°	<0.1	0.1	<0.1	<0.1
315°-330°	<0.1	0.9	<0.1	0.2
330°-345°	<0.1	0.4	<0.1	<0.1
345°-360°	<0.1	1.2	<0.1	0.3



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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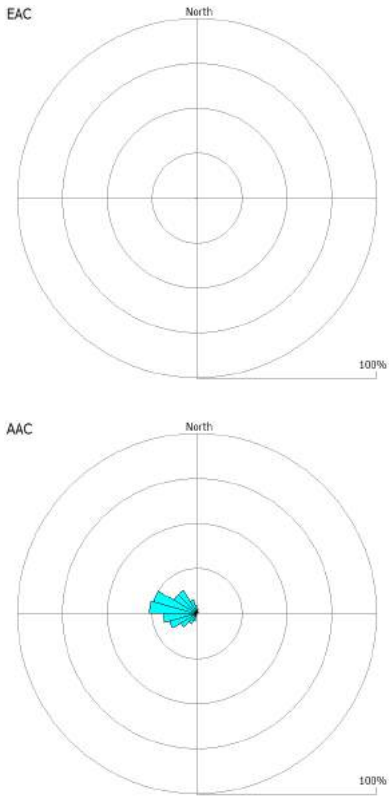
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-06 (No point description given)		
Date Out:	06-Oct-14	**Date In:**	10-Oct-14
Interval*:	4 days	**Our Ref:**	52948 / P-06 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.2
Absolute Area Coverage (AAC%) / interval = 6.7
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	<0.1	2.6	<0.1	0.7
15°-30°	<0.1	0.8	<0.1	0.2
30°-45°	<0.1	0.3	<0.1	<0.1
45°-60°	<0.1	1.5	<0.1	0.4
60°-75°	<0.1	0.5	<0.1	0.1
75°-90°	<0.1	0.5	<0.1	0.1
90°-105°	<0.1	0.2	<0.1	<0.1
105°-120°	<0.1	0.4	<0.1	<0.1
120°-135°	<0.1	0.1	<0.1	<0.1
135°-150°	<0.1	0.2	<0.1	<0.1
150°-165°	<0.1	<0.1	<0.1	<0.1
165°-180°	<0.1	0.7	<0.1	0.2
180°-195°	<0.1	0.7	<0.1	0.2
195°-210°	0.1	4.5	<0.1	1.1
210°-225°	0.1	6.7	<0.1	1.7
225°-240°	0.2	10.6	<0.1	2.7
240°-255°	0.4	15.8	0.1	3.9
255°-270°	0.5	19.3	0.1	4.8
270°-285°	0.8	26.7	0.2	6.7
285°-300°	0.7	25.3	0.2	6.3
300°-315°	0.4	15.3	<0.1	3.8
315°-330°	0.4	15.1	0.1	3.8
330°-345°	0.2	7.9	<0.1	2.0
345°-360°	0.1	4.8	<0.1	1.2



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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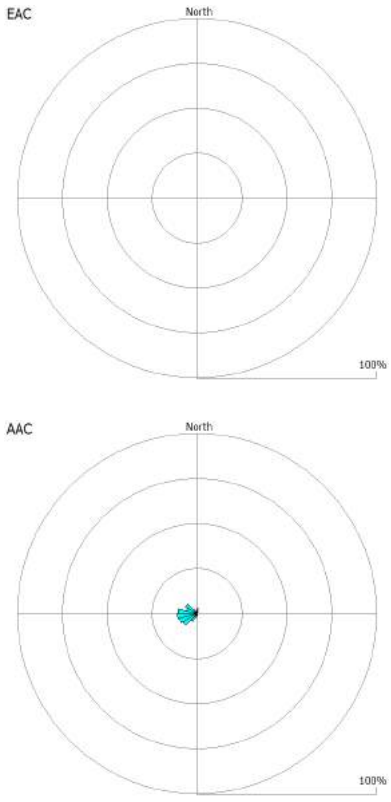
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-07 (No point description given)		
Date Out:	06-Oct-14	**Date In:**	10-Oct-14
Interval*:	4 days	**Our Ref:**	52949 / P-07 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.1
Absolute Area Coverage (AAC%) / interval = 3.3
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.8

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	<0.1	3.0	<0.1	0.7
15°-30°	<0.1	0.3	<0.1	<0.1
30°-45°	<0.1	0.6	<0.1	0.1
45°-60°	<0.1	0.6	<0.1	0.1
60°-75°	<0.1	1.3	<0.1	0.3
75°-90°	<0.1	0.2	<0.1	<0.1
90°-105°	<0.1	0.1	<0.1	<0.1
105°-120°	<0.1	0.6	<0.1	0.2
120°-135°	<0.1	0.5	<0.1	0.1
135°-150°	<0.1	0.1	<0.1	<0.1
150°-165°	<0.1	0.1	<0.1	<0.1
165°-180°	<0.1	1.2	<0.1	0.3
180°-195°	<0.1	2.3	<0.1	0.6
195°-210°	<0.1	2.3	<0.1	0.6
210°-225°	0.1	5.1	<0.1	1.3
225°-240°	0.2	9.2	<0.1	2.3
240°-255°	0.3	10.2	<0.1	2.5
255°-270°	0.3	11.4	<0.1	2.8
270°-285°	0.3	10.8	<0.1	2.7
285°-300°	0.1	6.4	<0.1	1.6
300°-315°	0.2	7.5	<0.1	1.9
315°-330°	<0.1	3.0	<0.1	0.7
330°-345°	<0.1	1.1	<0.1	0.3
345°-360°	<0.1	1.5	<0.1	0.4



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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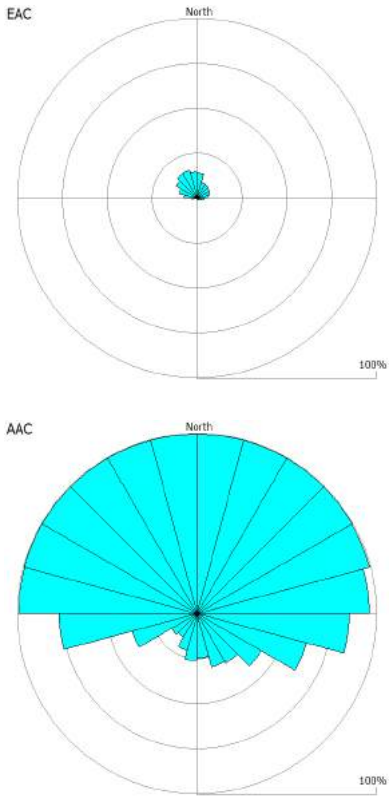
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-08 (No point description given)		
Date Out:	06-Oct-14	**Date In:**	10-Oct-14
Interval*:	4 days	**Our Ref:**	52950 / P-08 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 6.3
Absolute Area Coverage (AAC%) / interval = 69.4
Effective Area Coverage (EAC%) / day = 1.6
Absolute Area Coverage (AAC%) / day = 17.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	14.1	100.0	3.5	25.0
15°-30°	9.3	100.0	2.3	25.0
30°-45°	8.8	100.0	2.2	25.0
45°-60°	8.2	99.8	2.0	24.9
60°-75°	7.3	99.3	1.8	24.8
75°-90°	5.8	95.9	1.5	24.0
90°-105°	4.2	84.7	1.1	21.2
105°-120°	2.7	63.0	0.7	15.8
120°-135°	1.5	41.3	0.4	10.3
135°-150°	1.1	31.9	0.3	8.0
150°-165°	1.1	30.8	0.3	7.7
165°-180°	0.8	24.9	0.2	6.2
180°-195°	0.8	26.4	0.2	6.6
195°-210°	0.6	21.1	0.1	5.3
210°-225°	0.4	15.1	0.1	3.8
225°-240°	0.4	16.7	0.1	4.2
240°-255°	1.1	37.2	0.3	9.3
255°-270°	3.1	77.1	0.8	19.3
270°-285°	7.4	99.6	1.8	24.9
285°-300°	10.6	100.0	2.6	25.0
300°-315°	13.9	100.0	3.5	25.0
315°-330°	16.0	100.0	4.0	25.0
330°-345°	16.4	100.0	4.1	25.0
345°-360°	14.9	100.0	3.7	25.0



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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Dust Monitoring and Dust Consultancy Services

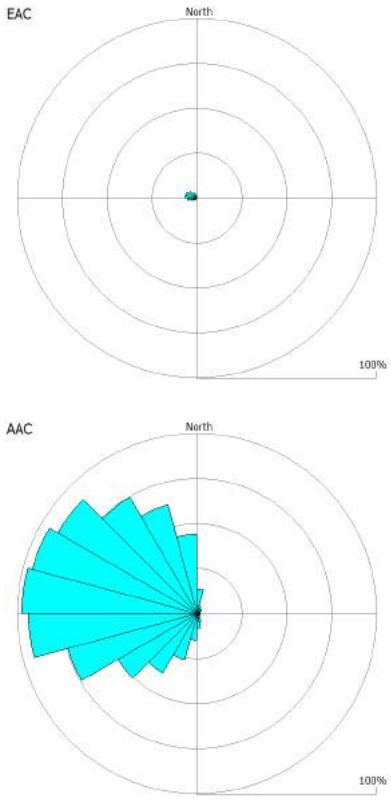
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-01 (No point description given)		
Date Out:	06-Oct-14	**Date In:**	10-Oct-14
Interval*:	4 days	**Our Ref:**	52951 / S-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.8
Absolute Area Coverage (AAC%) / interval = 34.0
Effective Area Coverage (EAC%) / day = 0.4
Absolute Area Coverage (AAC%) / day = 8.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.4	13.9	0.1	3.5
15°-30°	0.1	4.9	<0.1	1.2
30°-45°	<0.1	3.5	<0.1	0.9
45°-60°	<0.1	3.4	<0.1	0.8
60°-75°	<0.1	2.0	<0.1	0.5
75°-90°	<0.1	1.8	<0.1	0.4
90°-105°	<0.1	2.1	<0.1	0.5
105°-120°	<0.1	1.7	<0.1	0.4
120°-135°	<0.1	2.2	<0.1	0.6
135°-150°	<0.1	3.0	<0.1	0.7
150°-165°	0.1	4.7	<0.1	1.2
165°-180°	0.2	8.4	<0.1	2.1
180°-195°	0.4	14.8	0.1	3.7
195°-210°	0.9	26.6	0.2	6.6
210°-225°	1.3	38.5	0.3	9.6
225°-240°	2.0	50.8	0.5	12.7
240°-255°	3.5	74.5	0.9	18.6
255°-270°	5.7	94.0	1.4	23.5
270°-285°	6.9	97.7	1.7	24.4
285°-300°	6.7	95.2	1.7	23.8
300°-315°	5.6	89.9	1.4	22.5
315°-330°	3.7	74.7	0.9	18.7
330°-345°	2.8	62.6	0.7	15.7
345°-360°	1.7	44.1	0.4	11.0



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

DustScan Ltd
Dust Monitoring and Dust Consultancy Services

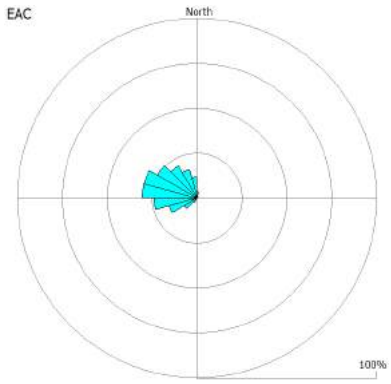
DS100 DIRECTIONAL DUST FLUX REPORT

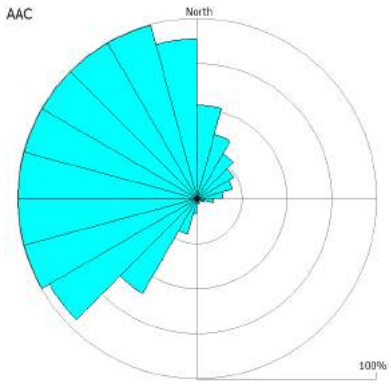
Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-02 (No point description given)		
Date Out:	06-Oct-14	**Date In:**	10-Oct-14
Interval*:	4 days	**Our Ref:**	52952 / S-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 8.3
Absolute Area Coverage (AAC%) / interval = 48.9
Effective Area Coverage (EAC%) / day = 2.1
Absolute Area Coverage (AAC%) / day = 12.2

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	3.9	52.1	1.0	13.0
15°-30°	1.4	36.8	0.4	9.2
30°-45°	1.1	28.6	0.3	7.1
45°-60°	0.9	23.6	0.2	5.9
60°-75°	0.7	20.6	0.2	5.1
75°-90°	0.5	14.6	0.1	3.6
90°-105°	0.3	9.6	<0.1	2.4
105°-120°	0.1	4.5	<0.1	1.1
120°-135°	<0.1	2.6	<0.1	0.6
135°-150°	<0.1	1.2	<0.1	0.3
150°-165°	<0.1	3.4	<0.1	0.9
165°-180°	<0.1	1.4	<0.1	0.4
180°-195°	0.3	8.6	<0.1	2.2
195°-210°	0.7	20.6	0.2	5.1
210°-225°	3.0	61.0	0.8	15.2
225°-240°	8.4	95.0	2.1	23.8
240°-255°	16.3	100.0	4.1	25.0
255°-270°	24.0	100.0	6.0	25.0
270°-285°	31.0	100.0	7.8	25.0
285°-300°	30.8	100.0	7.7	25.0
300°-315°	26.1	100.0	6.5	25.0
315°-330°	21.0	100.0	5.2	25.0
330°-345°	16.6	100.0	4.2	25.0
345°-360°	12.1	88.7	3.0	22.2





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

DustScan Ltd
Dust Monitoring and Dust Consultancy Services

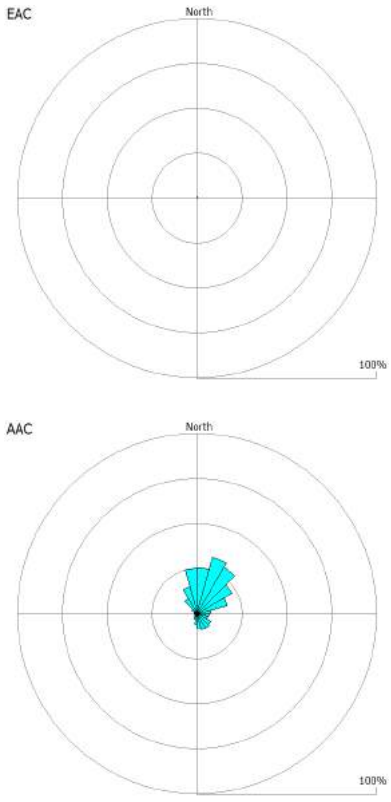
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-03 (No point description given)		
Date Out:	06-Oct-14	**Date In:**	10-Oct-14
Interval*:	4 days	**Our Ref:**	52953 / S-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.3
Absolute Area Coverage (AAC%) / interval = 10.8
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 2.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.8	25.6	0.2	6.4
15°-30°	1.0	32.5	0.2	8.1
30°-45°	0.9	29.8	0.2	7.5
45°-60°	0.6	22.8	0.2	5.7
60°-75°	0.5	17.2	0.1	4.3
75°-90°	0.2	7.7	<0.1	1.9
90°-105°	0.2	6.6	<0.1	1.6
105°-120°	0.2	6.3	<0.1	1.6
120°-135°	0.3	8.9	<0.1	2.2
135°-150°	0.3	9.3	<0.1	2.3
150°-165°	0.3	9.3	<0.1	2.3
165°-180°	0.2	8.3	<0.1	2.1
180°-195°	0.2	6.4	<0.1	1.6
195°-210°	0.1	3.8	<0.1	0.9
210°-225°	0.1	3.0	<0.1	0.7
225°-240°	<0.1	1.7	<0.1	0.4
240°-255°	<0.1	2.0	<0.1	0.5
255°-270°	<0.1	1.2	<0.1	0.3
270°-285°	<0.1	1.5	<0.1	0.4
285°-300°	<0.1	2.0	<0.1	0.5
300°-315°	<0.1	3.8	<0.1	1.0
315°-330°	0.3	9.9	<0.1	2.5
330°-345°	0.4	15.4	0.1	3.9
345°-360°	0.7	25.1	0.2	6.3



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

DustScan is a registered trademark and a trading name of DustScan Ltd

Dust Monitoring Results, January 2015 Sampling Event,
Burgard Industrial Park – SSI Area, Portland, Oregon
Bridgewater Group, 2015

BRIDGEWATER GROUP, INC.

Dust Monitoring Results
January 2015 Monitoring Event
Burgard Industrial Park - SSI Area
Portland, Oregon

TO: Jim Orr/Oregon DEQ

CC: Mat Cusma/Schnitzer
Mark Bartee/Schnitzer

FROM: Ross Rieke/Bridgewater Group

DATE: March 11, 2015

This memorandum presents the results of the January 2015 dust monitoring event performed at the Schnitzer Steel (SSI) area of the Burgard Industrial Park (BIP) in Portland, Oregon (Figure 1, Figure 2). The dust monitoring was performed in accordance with the May 7, 2014 *Dust Monitoring Plan* (Dust Monitoring Plan), and was the final of four monitoring events required as a Source Control Evaluation (SCE) effort pursuant to the terms of the June 13, 2000 *Voluntary Agreement for Remedial Investigation and Cleanup Measures* between Schnitzer and DEQ. The duration of the monitoring event was reduced from seven days to four days as proposed in the September 19, 2014 memorandum *Dust Monitoring Results, July and August 2014 Sampling Events* and as approved by DEQ in an October 6, 2014 email.

The purpose of the dust monitoring program is to support the evaluation of potential impacts to river and other offsite areas from airborne particulates. To accomplish this task, the Dust Monitoring Plan details the procedures to compare the dust levels at the perimeter of the SSI area relative to the dust levels at targeted activities within the SSI area and, as a result, assess the effectiveness of SSI dust control Best Management Practices (BMPs).

Dust Monitoring Methodology

Dust monitoring was performed using DustScan DS100 passive, directional dust gauges (Appendix A). Twelve monitoring pole stations were established within, around, and distant from the site (Figure 3). Photographs of the monitoring stations are provided in Appendix B. The approximate 3 ½-inch diameter by approximately 13-inches long cylindrical, sticky paper-covered gauges were placed on the station poles and then removed four days later. The gauge cylinders were taken into an enclosed office where the sticky paper was removed, mounted and sealed with transparent cover sheets, and shipped to the analytical laboratory. The analytical laboratory reports are provided in Appendix C.

The duration of the January 2015 dust monitoring event was four days. As noted above, DEQ approved reducing the duration from seven days to four days in an October 6, 2014 email. The January 2015 monitoring event was performed January 19, 2015 to January 23, 2015 with the gauges installed between 12:30 PM and 2:30 PM on January 19, 2015 and removed between 1:00 PM and 2:30 PM on January 23, 2015[1].

[1] The times of installation and removal were selected to meet personnel scheduling demands and are not expected to have had a material impact on the dust monitoring results.

Dust Monitoring Conditions

Weather Conditions

Weather conditions during the January 2015 event were monitored and recorded using the weather station established at the SSI site in early August 2014.

Figure 4 shows the wind rose during the January 2015 event. As shown on the wind rose, the winds were light and generally from the southeast. Relative to the previous monitoring events, the wind speeds were somewhat lower. Previous events generally noted prevailing winds from the west to northwest.

Figure 5 presents the daily temperature, humidity, and rainfall data for the January 2015 monitoring event. About 0.10 inch of rainfall occurred during the January 2015 event. About 2.08 inches of rain occurred in the three days preceding the monitoring event. Temperature during the January 2015 event ranged from a high of 52.1 degrees on January 19 to a low of 31.4 degrees on January 21. Humidity for the January 2015 event ranged from a high of 99 percent on January 21 to a low of 63 percent on January 21. Consistent with the seasons, these temperatures were less and the humidity generally greater, than those noted during the July 2014, August 2014, and October 2014 events.

Operations During January 2015 Monitoring Event

The site operations were generally the same as for previous monitoring events and included normal scrap yard activities (scrap receiving, shredder, processed ferrous steel management, and paved and unpaved roadway traffic). Barge unloading (of unprocessed scrap metal) occurred during the January 2015 event. Ship loading (of processed ferrous steel) did not occur during the January 2015 event. Dust generating activities occurring in the area around the SSI site included vehicle traffic on Port of Portland Terminal 4, Northwest Pipe and Portland Container sites, and vehicle traffic on Burgard Way and Burgard Road.

Dust Monitoring Results

The dust monitoring analytical laboratory report (Appendix C) presents the dust monitoring data in two metrics: Absolute Area Coverage (AAC) and Effective Area Coverage (EAC). AAC values (expressed as a percentage) represent the amount of dust captured on the monitoring device and provide a direction-specific measure of the overall amount of dust flux over the monitoring period at the monitoring station. As such, the AAC provides the appropriate measurement to support the objective of the dust monitoring program. EAC values pertain to the color or opacity of the dust and therefore may provide an indication of the visual impact of dust generating activities, and possibly qualitative information on the presence of different sources of dust, but otherwise are not relevant to the dust monitoring objective.

Figure 6 presents the directional AAC values for the January 2015 monitoring event. Table 1 presents the maximum and average (around the circumference) AAC values for each station. Table 1 includes data from the previous July 2014, August 2014, and October 2014 events[2]. Figure 7 presents a bar chart showing the relative AAC values for the targeted activities, perimeter[3], and background stations for the January 2015 event. Tables of directional AAC

[2] The duration of the July 2014 and August 2014 monitoring events was seven days as compared to the four day duration of the October 2014 and January 2015 events. Thus, notwithstanding all other factors, the AAC values for the October 2014 and January 2015 events would be expected to be less than those measured for the July 2014 and August 2014 events. This change in monitoring duration was made in order to reduce the saturation of the samplers with dust, thereby allowing better resolution for the measurements of dust flux at each station.

[3] Based on the relatively high AAC values, the dust flux direction indicated by the "dust rose" (from the southeast, see Figure 6), and the lack of SSI sources in the area, the dust levels at station P8 are clearly impacted by offsite activities, are not considered representative of dust generated from the SSI activities and are

values are presented for each station in the analytical laboratory reports provided in Appendix C.

The AAC values presented in the figures, tables, and Appendix C are the result of a computer-based, optical analytical process that measures the relative amount of dust captured on the sticky paper placed on the monitoring cylinder. The AAC values are useful to compare with other AAC values in assessing the qualitative differences in dust levels between monitoring stations, as well as the predominant direction(s) of dust flux at each station. AAC values do not represent any standard particulate measurement such as PM10 or dust concentration (e.g., mg/m^3) and a particular AAC value does not represent either "high" or "low" dust levels (other than as compared to other monitoring stations).

The results of the January 2015 dust monitoring events indicate the following (see Table 1):

- There is an approximate 77 percent difference in dust flux (as measured by the average AAC) at the SSI site perimeter relative to the dust flux at the SSI targeted activities for the January 2015 event. This difference in the dust levels from the targeted activities to the site perimeter is somewhat less than the differences observed in the July, August, and October 2014 monitoring events.

- The average dust flux at the targeted activity monitoring stations was almost 70 percent less during the January 2015 monitoring event relative to the October 2014 event (as measured by the average AAC in all of the monitoring stations). The reduced dust levels are likely due to the seasonally cooler and wetter weather preceding and during the monitoring period. Wind levels, although relatively low during both monitoring periods, were somewhat less during the January 2015 event compared to the October 2014 monitoring event.

- The dramatic reduction in the dust flux at the targeted activities discussed in the above bullet was not reflected in similar reductions at the site perimeter dust monitoring stations. While some of the perimeter stations noted slightly increased AAC values and others showed slightly decreased values, the overall average perimeter ACC values were essentially unchanged between the October 2014 and January 2015 events. Thus, consistent with previous monitoring events, the January 2015 data indicates that dust levels at the SSI site perimeter monitoring stations are independent of the dust flux at the targeted SSI activities. Given that the perimeter monitoring stations are located between the targeted activity stations and background stations and that a consistent reduction in ACC values at the background stations was not observed between the October 2014 and January 2015 sampling events (as was observed at the targeted activity locations) dust levels at the background monitoring stations also appear to be independent of the dust flux at the targeted SSI activities.

- The background stations (A1 and P8) indicate that non-SSI dust sources are present in the area around the SSI site and likely contribute to the dust levels measured on the SSI site and at the perimeter stations. As noted on Table 1, the average background dust flux was about *375 percent* of the average targeted activity dust flux in the January 2015 monitoring event. The dust level at Station A1 near the intersection of Burgard Road and North Lombard Avenue noted a dust flux almost *five times* the average dust flux at the targeted activity monitoring stations targeting SSI activities. The dramatically higher dust flux levels at the background locations relative to the SSI targeted activity locations (and, even more so, relative to perimeter monitoring stations) are consistent with the previous dust monitoring event results.

not included in comparison of perimeter and source dust measurements. The dust levels measured at station P8 are included in the discussion of background dust level (i.e., along with station A1 measurements).

Conclusion of Overall Dust Monitoring Program

As noted on Table 2 and in Figure 7, the four dust monitoring events have consistently noted that dust levels at the perimeter of the SSI site are mostly influenced by dust flux from offsite sources in the area around the SSI property and not from activities on the SSI site. Over the course of all four of the monitoring events, the background dust flux has ranged from 108 percent to 375 percent of the dust flux at the SSI targeted activities. Notwithstanding the fact that dust levels in the overall Burgard Industrial Park area appear to be primarily caused by sources other than SSI activities, the average dust flux at the perimeter of the SSI site was about 80 to 90 percent less than the dust flux at the targeted SSI activities across the four monitoring events. Finally, the average background dust flux was almost *seven times* the average dust flux at the SSI perimeter.

In summary, the dust control BMPs being implemented by SSI are effective and activities at the SSI site are not materially contributing to the dust levels in the area around the SSI site, in the overall Burgard Industrial Park, nor to the Willamette River.

Attachments:

Table 1 – Dust Monitoring Data
Table 2 – Dust Monitoring Data, Comparison of All Events
Figure 1 – Site Location Map
Figure 2 – Site Plan, Burgard Industrial Park
Figure 3 – Dust Monitoring Station Locations
Figure 4 – Wind Rose, January 2015 Dust Monitoring Event
Figure 5 – Daily Temperature, Humidity, and Rainfall, January 2015 Dust Monitoring Event
Figure 6 – AAC Directional Plots, January 2015 Dust Monitoring Event
Figure 7 – AAC Values Comparison, January 2015 Dust Monitoring Event
Figure 8 - AAC Values Comparison, All Dust Monitoring Events
Appendix A – DustScan Manufacturer Literature
Appendix B - Dust Monitoring Station Photographs
Appendix C - Analytical Laboratory Reports

Tables

Table 1
Dust Monitoring Data
Burgard Industrial Park - SSI

		AAC (Percent)[1]							
		Jul-14		Aug-14		Oct-14[2]		Jan-15[2]	
Station	Location	Average	Max[3]	Average	Max[3]	Average	Max[3]	Average	Max[3]
S1	Scrap pile construction/deconstruction	100.0	100.0	90.6	100.0	34.0	97.7	17.1	40.9
S2	Dock activities/shear	64.5	100.0	65.0	100.0	48.9	100.0	10.5	61.0
S3	Shredder residue loading	72.2	100.0	59.3	100.0	10.8	32.5	4.0	9.2
P1	South perimeter	32.6	61.9	50.1	99.3	1.6	6.7	4.9	7.5
P2	Southwest perimeter	9.4	23.3	24.6	99.7	4.5	9.5	2.4	4.8
P3	West perimeter	18.5	62.3	13.4	62.2	1.4	5.1	2.3	6.6
P4	Northwest perimeter	7.4	11.9	10.1	45.5	0.8	3.2	1.8	5.0
P5	North perimeter	24.2	39.3	19.5	42.9	1.0	3.3	2.0	4.7
P6	Northeast perimeter	24.1	61.8	23.7	51.9	7.0	26.7	1.8	7.3
P7	Northeast perimeter	9.5	27.3	9.1	20.9	3.3	11.4	1.4	5.2
P8	Northeast background	95.6	100.0	96.5	100.0	69.4	100.0	28.4	66.9
A1	West background	74.9	100.0	79.7	100.0	28.5	83.7	50.7	100.0
Average All Stations		44.4	65.7	45.1	76.9	17.6	40.0	10.6	26.6
Average Target Activities (S1 through S3 stations)		78.9	100.0	71.6	100.0	31.2	76.7	10.5	37.0
Average Perimeter (P1 through P7 stations)		18.0	41.1	21.5	60.3	2.8	9.4	2.4	5.9
Average Background (P8 and A1 stations)		85.3	100.0	88.1	100.0	48.9	91.9	39.5	83.5
Percent Reduction From Average Target Activities to Average Perimeter		77%	59%	70%	40%	91%	88%	77%	84%
Average Background as Percent of Average Target Activities		108%	100%	123%	100%	157%	120%	375%	225%

1 - See text, Appendix A, and Appendix C for description of Absolute Area Coverage (AAC).

2 - The duration of the October 2014 and January 2015 events were four days while the duration of the July 2014 and August 2014 events were seven days. Thus, notwithstanding all other factors, the October 2014 and January 2015 AAC values would be expected to be less than the July 2014 and August 2014 AAC values.

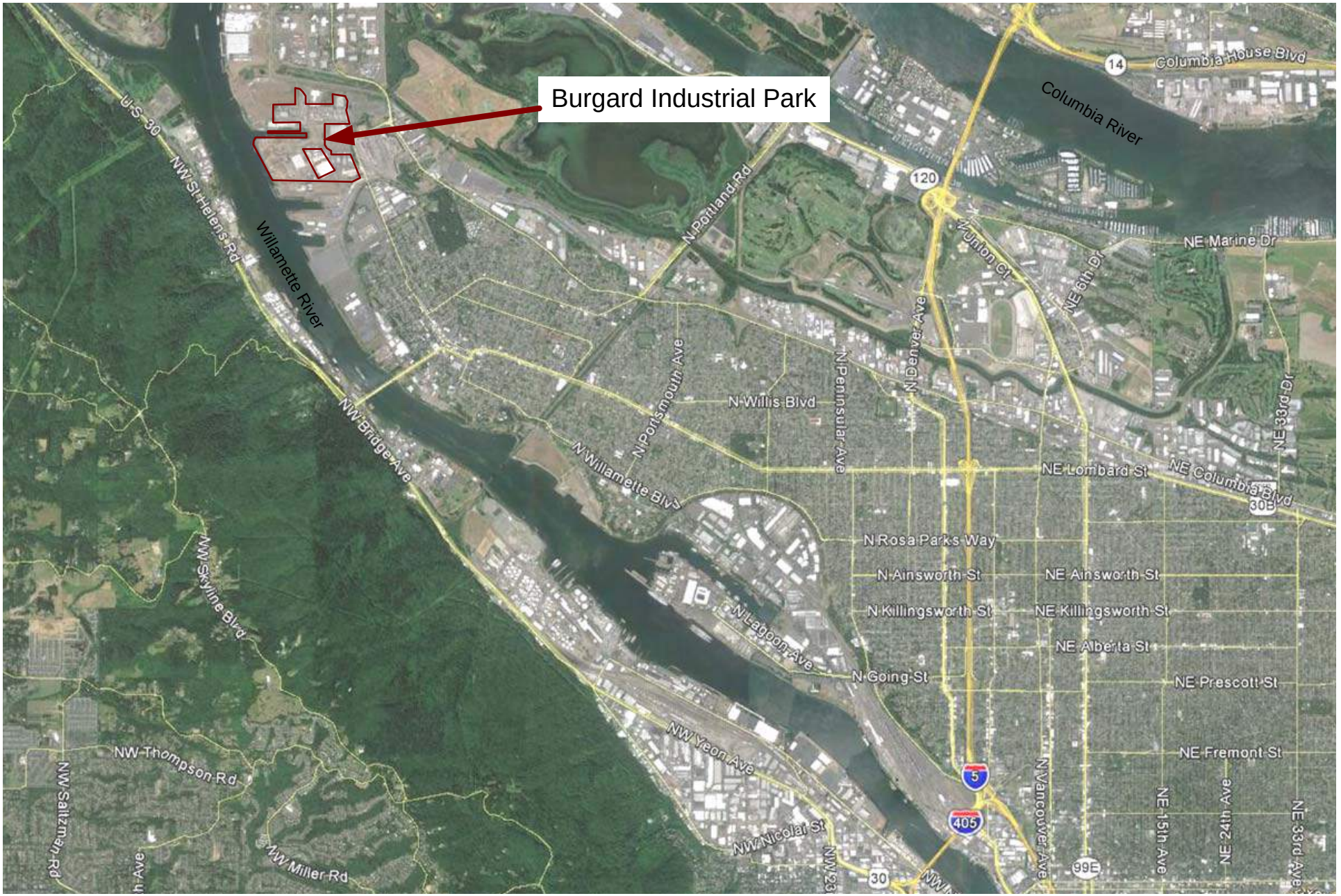
3 - Given the presence of 100% values, calculations of averages, reductions, and comparisons using maximum AACs at bottom of table are approximate.

Table 2
Dust Monitoring Data - Comparison of All Events
Burgard Industrial Park - SSI

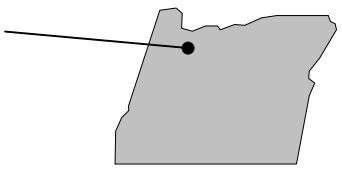
Station	Location	AAC (Percent)[1] Jul-14	Aug-14	Oct-14	Jan-15	Ave All
S1	Scrap pile construction/deconstruction	100.0	90.6	59.4	30.0	70.0
S2	Dock activities/shear	64.5	65.0	85.5	18.3	58.4
S3	Shredder residue loading	72.2	59.3	19.0	7.1	39.4
P1	South perimeter	32.6	50.1	2.7	8.5	23.5
P2	Southwest perimeter	9.4	24.6	7.9	4.2	11.5
P3	West perimeter	18.5	13.4	2.5	4.0	9.6
P4	Northwest perimeter	7.4	10.1	1.3	3.1	5.5
P5	North perimeter	24.2	19.5	1.8	3.6	12.3
P6	Northeast perimeter	24.1	23.7	12.2	3.2	15.8
P7	Northeast perimeter	9.5	9.1	5.8	2.5	6.7
P8	Northeast background	95.6	96.5	121.4	49.7	90.8
A1	West background	74.9	79.7	49.9	88.7	73.3
Average All Stations		44.4	45.1	30.8	18.6	34.7
Average Target Activities (S1 through S3 stations)		78.9	71.6	54.6	18.5	55.9
Average Perimeter (P1 through P7 stations)		18.0	21.5	4.9	4.2	12.1
Average Background (P8 and A1 stations)		85.3	88.1	85.6	69.2	82.1
Percent Reduction From Average Target Activities to Average Perimeter		77%	70%	91%	77%	78%
Average Background as Percent of Average Target Activities		108%	123%	157%	375%	147%

1 - October 2014 and January 2015 AAC values scaled up by 7/4 to reflect shorter monitoring period during these events (4 days) relative to July 2014 and August 2014 events (7 days).

Figures



Portland, Oregon



N

Approximate Scale

5000 feet

Figure 1
Site Location Map
Burgard Industrial Park

BRIDGEWATER GROUP, INC.

Base photograph July 2014

Base photograph July 2014

N

Approximate Scale

400 Feet

Figure 2
Site Plan
Burgard Industrial Park
Portland, Oregon

BRIDGEWATER GROUP, INC.

Base photograph July 2014

Figure 3
Dust Monitoring Station Locations
Burgard Industrial Park - SSI
Portland, Oregon

BRIDGEWATER GROUP, INC.

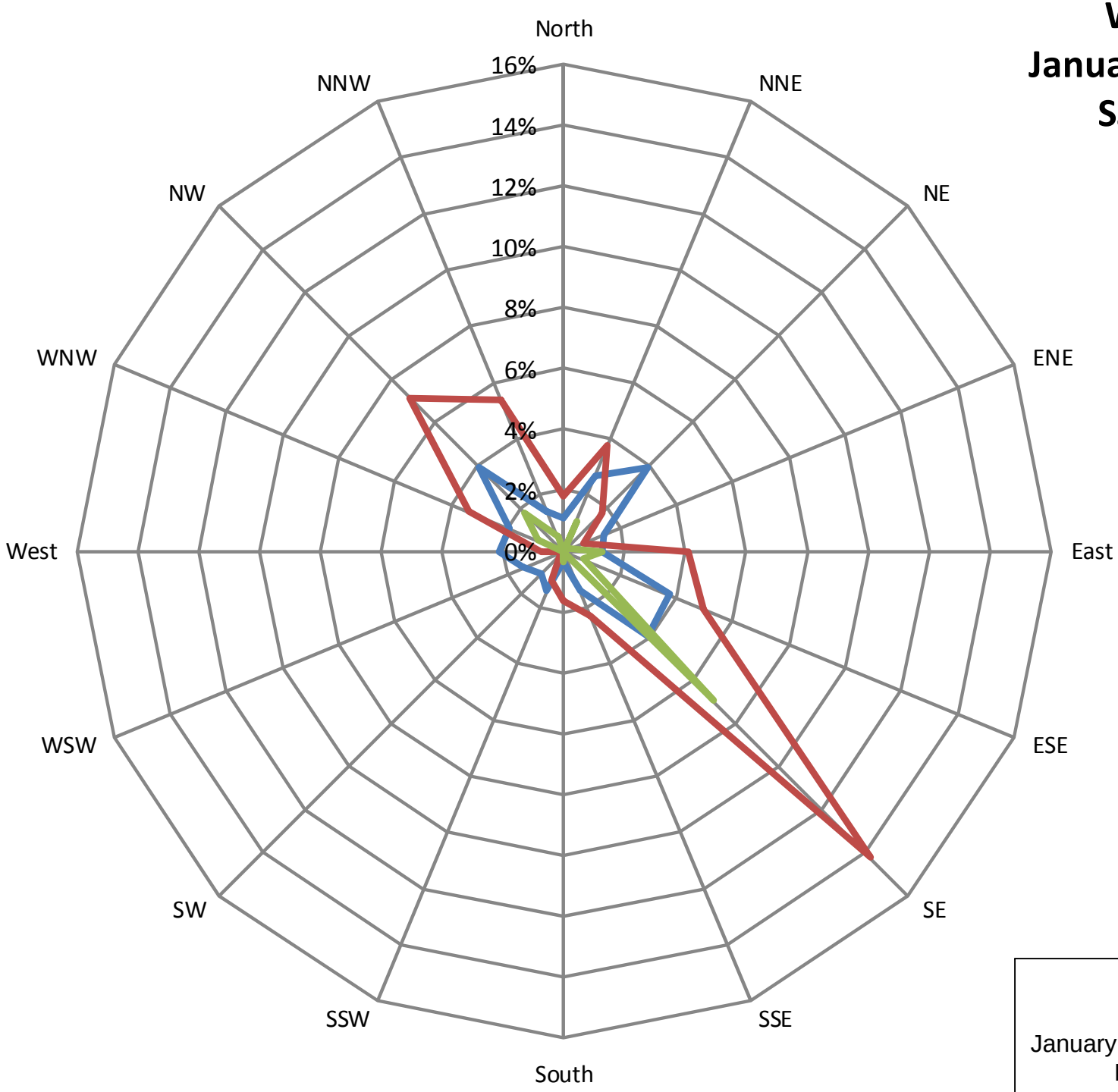
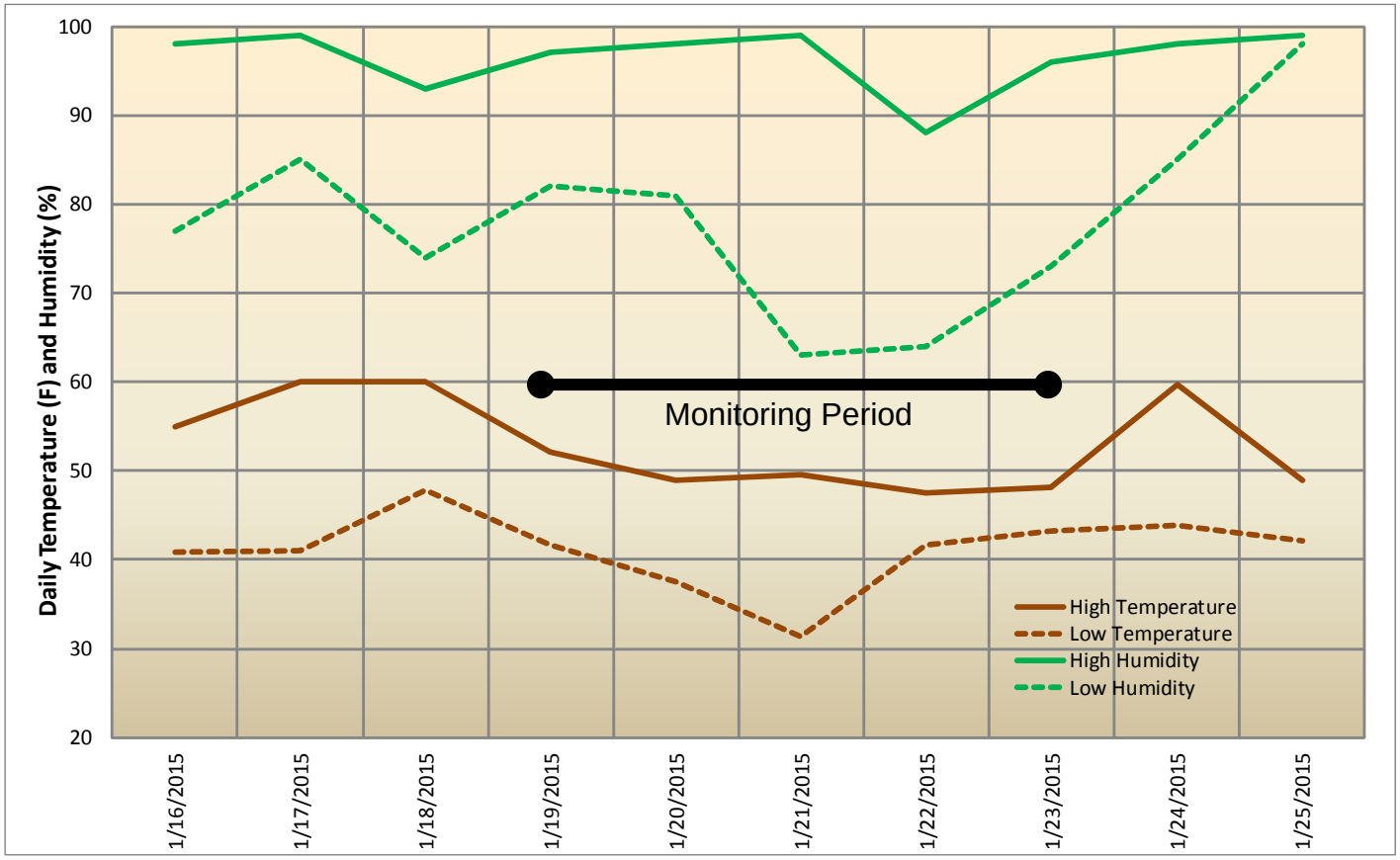


Figure 4
Wind Rose
January 2015 Dust Monitoring Event
Burgard Industrial Park - SSI

BRIDGEWATER GROUP, INC.



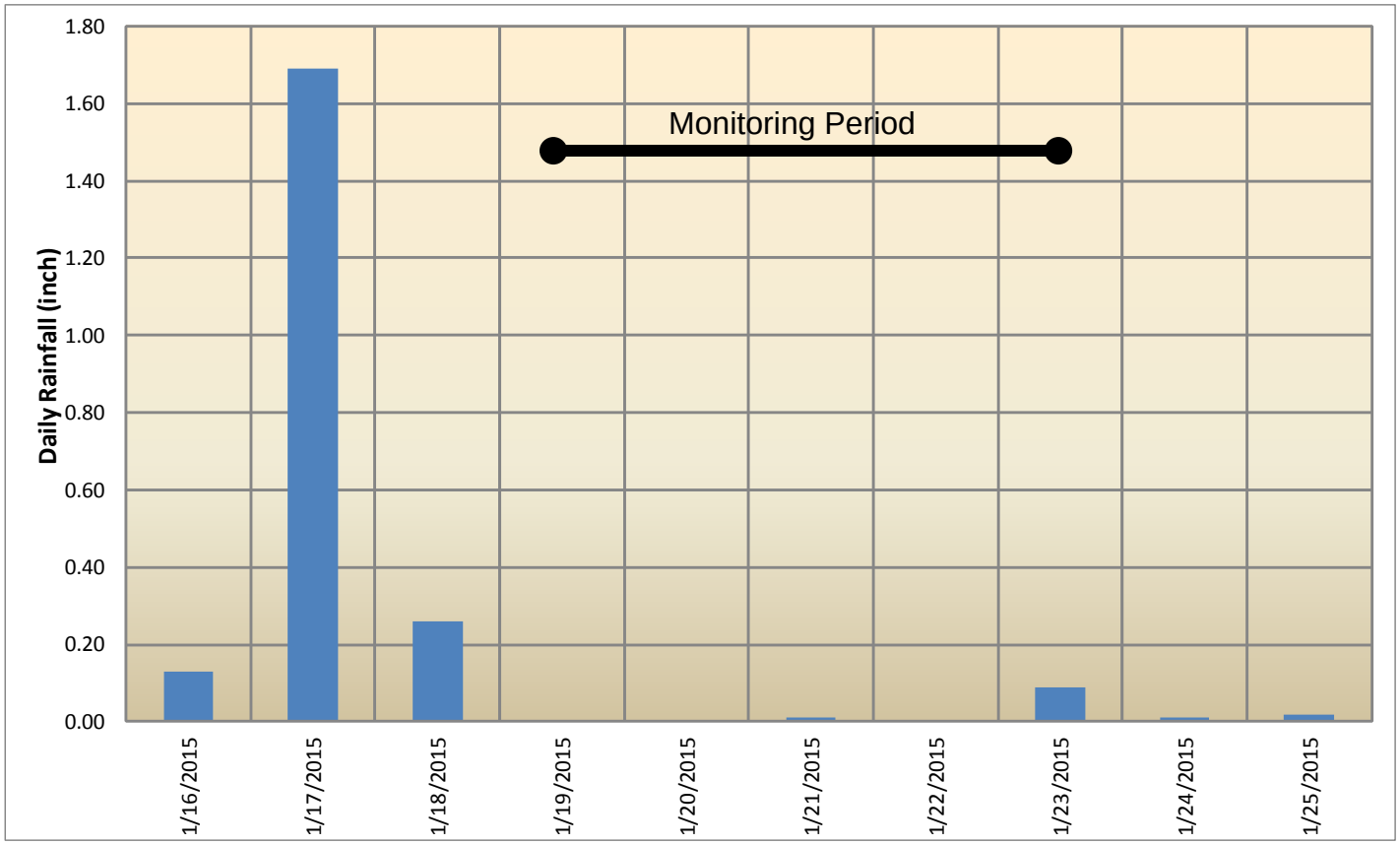


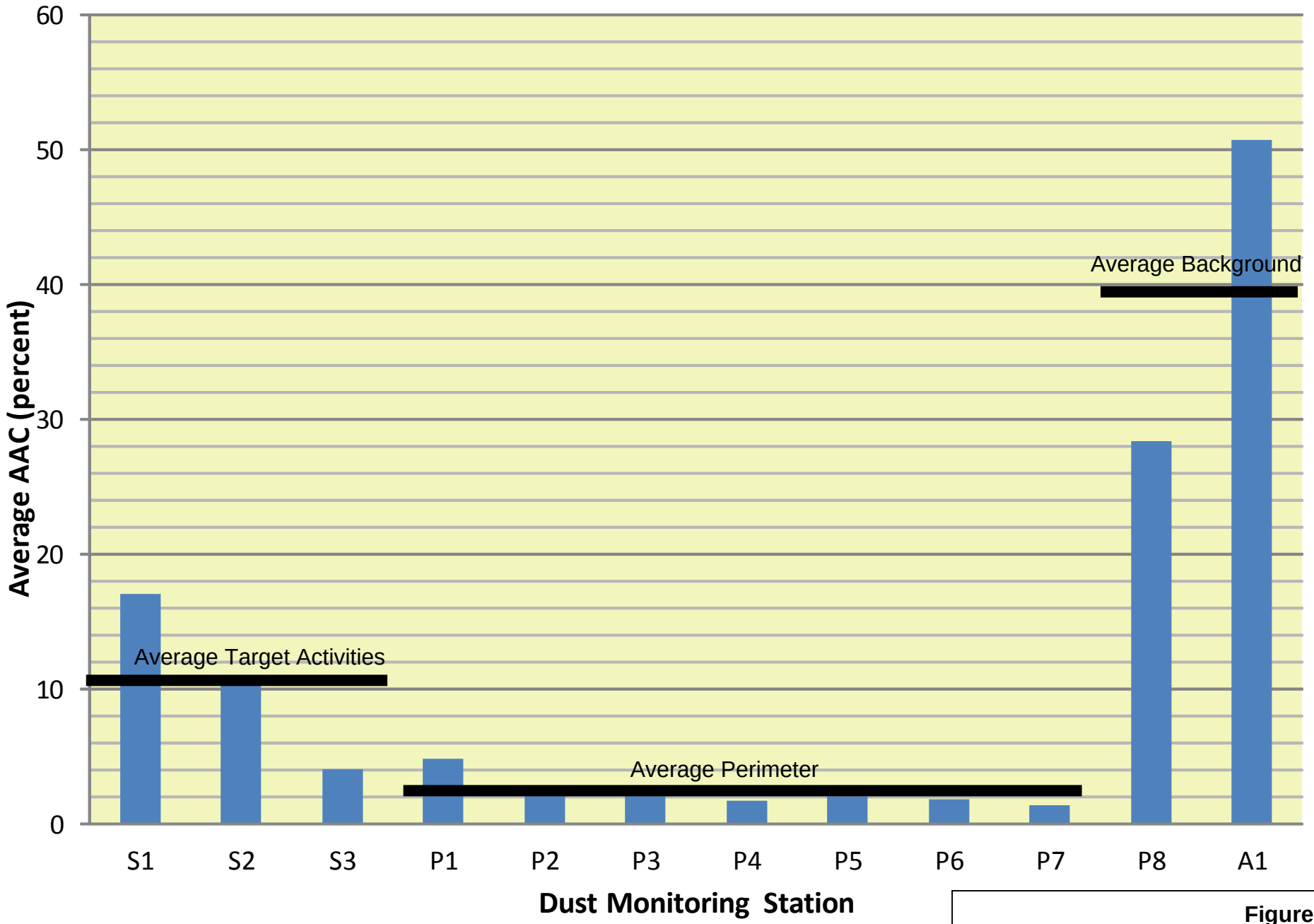
Figure 5
Daily Temperature, Humidity, and Rainfall
January 2015 Dust Monitoring Event
Burgard Industrial Park - SSI

BRIDGEWATER GROUP, INC.

Base photograph July 2014

Figure 6
AAC Directional Plots
January 2015 Dust Monitoring Event
Burgard Industrial Park - SSI
Portland, Oregon

BRIDGEWATER GROUP, INC.



Note – October 2014 and January 2015 AAC values scaled up by 7/4 to reflect shorter monitoring period during these events (4 days) relative to July 2014 and August 2014 events (7 days).

Figure 7
AAC Values Comparison
January 2015 Dust Monitoring Event
Burgard Industrial Park - SSI

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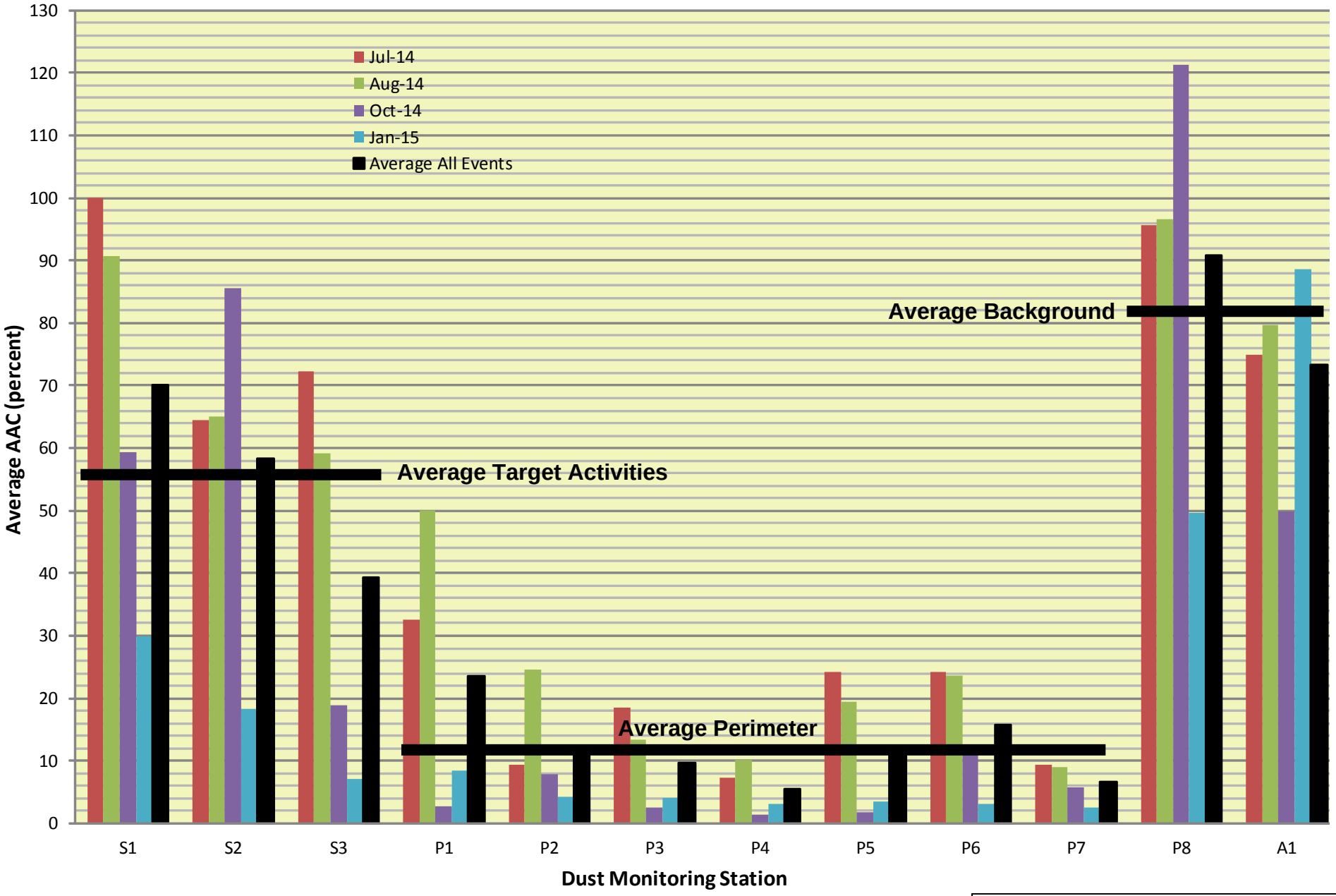

Note – October 2014 and January 2015 AAC values scaled up by 7/4 to reflect shorter monitoring period during these events (4 days) relative to July 2014 and August 2014 events (7 days).

Figure 8
AAC Values Comparison
All Dust Monitoring Events
Burgard Industrial Park - SSI

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Appendix A – DustScan Manufacturer Literature

DustScan

Dust Monitoring and Dust Consultancy Services

Guidance Note No. 1: Nuisance Dust Monitoring

This guidance note is based on our experience in dust monitoring and consultancy. It is part of a series aiming to provide a basic guide to dust and dust monitoring.

DustScan Guidance Note No. 1 discusses 'nuisance dust': what it is, its significance and why, when, where and how it can be measured.

What is 'nuisance dust'?

'Dust' is a generic term used to describe particulate matter 1 – 75 µm (micron) in diameter, produced through the crushing and abrasion of materials. It is often considered in two categories:

a) The size fraction up to 10 µm (PM_{10}), which is used as an indicator of local air quality and forms part of National Air Quality Standards. PM_{10} are measured to agreed standards, and usually expressed as a concentration over time: mg/m^3/day.

b) Nuisance dust. There are no standard definitions, or universal monitoring methods, for nuisance dust. It is now becoming accepted that dust above10 µm may be considered nuisance dust. Nuisance dust can be long-term (or chronic) – such as the long-term soiling of paintwork – or short-term (acute) – such as a short-lived dust cloud. Dust nuisance is the *effect* caused by dust.

The effect of dust is a matter of human perception thus is difficult to quantify. How it is perceived varies according to characteristics of the dust such as its colour, contrast and rate of accumulation; and local factors such as socio-economic conditions and employment.

Why does nuisance dust matter?

Dust may be an inevitable consequence of primary industry such as quarrying and mineral processing. Other processes, such as landfill, demolition and agriculture can also lead to dust generation. Some activities, such as quarrying and waste management, are controlled by specific legislation and guidance. Specific guidance has been produced for particular industries, such as Minerals Policy Statement (MPS) 2, Annex 1: Dust (ODPM, 2005) and Technical Guidance Document M17: Monitoring of particulate matter in ambient air around waste facilities (Environment Agency, 2004).

The size range and amount of dust particles generated by different activities vary according to the processes taking place. Weak materials such as coal or chalk can crumble easily and produce dust, but dust may also be generated due to high energy activities such as drilling and blasting, or through the crushing of strongly cohesive materials.

At waste facilities, the types and amounts of dust generated can be very varied thus difficult to predict. Particle behaviour will be highly variable, and there is no simple correlation between particle size and deposition rate.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Guidance Note No. 1: Nuisance Dust Monitoring

For a site operator, the potential for dust nuisance can be addressed in consents and permits – permissions may have conditions like *"…the operation will not lead to excessive dust nuisance…"* or *"…the operation will not cause pollution beyond the site boundary …"*. MPS 2, Annex 1 states: *"… Where these effects [dust from surface mineral workings] cannot be adequately controlled or mitigated, planning permission should be refused. …"* (ODPM, 2005) and Technical Guidance Document (Monitoring) M17 states that: *"…measures must be taken to minimise nuisance arising from the landfill due to dust…".* (Environment Agency, 2004). So to establish the effectiveness of control measures, monitoring is required.

Consequently how nuisance dust is monitored and assessed can be critical to the smooth running of an operation.

When should nuisance dust be monitored?

Ideally, baseline conditions should be established before an operation commences. This is recommended as the first stage of a Dust Assessment Study at mineral workings, and as part of an air quality monitoring programme before a new waste facility is established. Furthermore, the most appropriate methods to use for baseline testing are the simplest and least expensive.

Dust monitoring should continue during operations both to observe site emissions and ensure compliance with planning conditions. Liaison with local authorities and other regulatory bodies may require longer periods or continual monitoring. Frequency of monitoring should be sufficient to take weather conditions and seasonality into account; and observe changes in site practice through regular operations.

Most low-cost dust monitoring systems are of the periodic, interval-based type. Equipment is typically left out for periods of between a few days and a month. To keep costs down, equipment should be straightforward for site staff to use.

Where should nuisance dust be measured?

Whilst dust nuisance can be seen to be the impact of dust settlement at receptors, it is generally measured on or near site boundaries – i.e. on pathways, at or near sources of dust. Consequently the type and position of dust gauges is of paramount importance – equipment that is best suited to monitoring at receptors might not be appropriate on pathways, and vice versa.

How can nuisance dust be measured?

Nuisance dust is monitored either directionally (dust flux) or non-directionally (dust settlement). Directional gauges sample dust that is suspended in an airstream, such as on the pathway from source to receptor. Non-directional gauges sample dust falling out of an airstream, such as at a receptor.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Guidance Note No. 1:
Nuisance Dust Monitoring

Directional and non-directional nuisance dust samples are quantified in one of two very different ways; either the mass deposition rate or the soiling effect. In the first case, the weight of material collected over a period of time is determined; in the second, changes in the optical properties of a surface (such as loss of gloss, or obscuration) are measured.

There are 'custom and practice' guidelines for dust flux and dust settlement, and for dust mass and dust soiling, although the units used by different methods are generally not interchangeable. Consequently care should be taken to apply the appropriate method for the monitoring requirement. Please refer to Guidance Note No. 3 "Directional Dust Data Assessment" for information on DustScan directional monitoring methodology.

What types of equipment are available for nuisance dust monitoring?

DustScan Ltd supply directional and non-directional dust monitoring equipment to measure both dust mass and dust soiling. Please contact us for more information or visit www.dustscan.co.uk.

Griffin House, Market Street,
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Tel: (44) 1608 810110
Fax: (44) 1608 810227
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Guidance Note No. 2:
Using the DustScan directional dust gauge

This guidance note sets out the methodology behind DustScan directional dust monitoring. It describes the DustScan directional dust monitoring methodology: how, and why, it works; what the results are and what they mean; and where and how to use the gauges.

The directional dust gauge is the principal component of DustScan dust monitoring equipment. DustScan is a ‘passive’ method that does not need a power supply. It samples all sizes of ambient dust and is ideal for nuisance dust monitoring. The directional gauge can be used in any location where dust movement occurs and can help to detect dust pathways and potential nuisance. Directional gauges are used at quarries, landfills, opencast coal sites, demolition and construction sites, remediation works, materials stockpiles and recycling plants.

DustScan gauges are discreet and unobtrusive, and are easy to install and operate. They can be installed and used by most site staff after basic training.

The photos above show the wide range of sites where our gauges can be used

DustScan directional gauges use a special adhesive dust collection slide (‘sticky pad’) which is mounted on a replaceable cylindrical monitoring head. The monitoring head fits onto a 2-metre stand. An alignment peg is provided as the gauge must be aligned to north when it is first installed. An alignment tool can be supplied to facilitate orientation. Correct alignment ensures repeatable dust sampling each time the dust monitoring heads are changed. The monitoring head collects fugitive dust coming from 360° around the gauge.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
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Guidance Note No. 2:
Using the DustScan directional dust gauge

Once the protective layer is removed the dust monitoring head samples continuously whilst exposed. It is normally left to sample for 1 to 2 weeks. At the end of the sampling period, the head is removed and placed in the protective carrying flask and a replacement head fitted. Used sampling heads are sent to the DustScan offices for computer analysis in the transport boxes provided.

For guidance on the DustDisc dust settlement gauge, the DS100-F combined Frisbee deposition and directional dust gauge and the DS500 combined PM_{10} and directional dust gauge, please refer to other Briefing Notes in this series.

What is the DustScan directional dust gauge?

The DustScan directional dust gauge measures the nuisance effect caused by dust in flux. Dust in flux is particulate matter that is suspended in an airstream on a pathway between its source and its potential receptors. In contrast, settlement gauges such as the DustDisc and the Frisbee deposition gauge measure dust deposition. Deposited dust has settled out of an airstream – wherever it is measured. Consequently dust in flux and deposited dust and are not necessarily the 'same' dust.

How does the DustScan directional gauge work?

DustScan is a 'passive' monitoring method, so it does not require a power supply. With the directional gauge, dust in flux impacts onto the exposed adhesive surface of the sampling cylinder for subsequent computer analysis by us. The sampling cylinder fits onto a monitoring head which is set to north when the gauge is installed, for repeatable directional sampling.

We recommend sampling intervals of 1 - 2 weeks. At the end of each sampling interval the cylinder and sample are sent back to us in the protective container provided. We seal the sample, scan it and measure the directional dusting on it using DustScan software.

Why use the DustScan directional dust gauge?

The directional gauge is ideal for monitoring both dust propagation and dust pathways. Potentially dusty activities on, or off, a site may lead to dust propagation. Dust pathways are also significant on site boundaries, as this is where dust leaving a site may lead to possible nuisance at an off-site receptor. Well-positioned DustScan gauges can help identify the location of dust sources and pathways on and off a site.

The DustScan directional dust gauge can be used to assess the direction, magnitude, and significance of dust pathways and the likelihood of complaint due to dust.

The directional information from DustScan monitoring can be used to identify and quantify sources of dust from various site activities. This can be used to evaluate the effectiveness of mitigation measures and assist site environmental management.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
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Guidance Note No. 2:
Using the DustScan directional dust gauge

What do the DustScan results mean?

Directional dust levels are reported as Absolute Area Coverage (AAC%) - the dust coverage irrespective of colour; and Effective Area Coverage (EAC%) - the soiling caused by that dust.

AAC% measures dusting irrespective of colour so all dust, dark or light, contributes to AAC%. Therefore it is an excellent method to identify and discriminate between dust sources – for example there may be more than one in a locality, such as an on-site process and off-site activities. Different AAC% levels from different directions can indicate the scale of these activities.

EAC% is used to measure the potential nuisance caused by dust soiling. As it relates to the darkness of dust, dark-coloured dusts such as coal will have a proportionately greater EAC% for any mass than light-coloured dusts, such as chalk. EAC% measures the likelihood of nuisance caused by dust soiling.

Nuisance criteria have been developed for use with these measures – please refer to Guidance Note No. 3 ‘Directional Dust Data Assessment’.

Where should DustScan directional dust gauges be used?

DustScan directional gauges are typically installed on site boundaries and should be well away from obstructions such as buildings, tall trees or overhanging vegetation. As with all flux-monitoring systems, there should be a clear air flow to the monitoring head.

The directional gauge must be securely fixed in a vertical position and is normally installed so that the protective rain guard is 2 metres from ground level. A rigid stand is supplied to enable fixing at the correct height – please refer to our installation instructions for more information.

How should DustScan directional dust gauges be used?

DustScan gauges can be used in a range of monitoring applications:

- During baseline studies to establish dust levels before a process, such as a quarry extension, takes place
- As part of an environmental monitoring strategy during the lifetime of a project
- In one-off monitoring programmes such as remediation works, demolition, blasting, etc

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
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Guidance Note No. 2:
Using the DustScan directional dust gauge

Boundary monitoring typically requires 4 gauges. Larger sites may need one or two more, and some sites need less. The number required depends on the level of information required and the size and complexity of the site. Please contact us to discuss your requirements.

- One DustScan gauge could be used to monitor dust near a single ‘point source’ such as a stockpile
- Two gauges could be used to monitor dust transit across a site – for example upwind and downwind
- Three or more gauges are required for boundary monitoring

DustScan can be used in conjunction with other monitoring methods. We have experience in other methods and can advise their suitability as required.

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Tel: (44) 1608 810110
Fax: (44) 1608 810227
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www.DustScan.co.uk

Appendix B – Dust Monitoring Station Photographs

Monitoring Point S1

Monitoring Point S2

Monitoring Point S3

Monitoring Point P1

Monitoring Point P2

Monitoring Point P3

Monitoring Point P4

Monitoring Point P5

Monitoring Point P6

Monitoring Point P7

Monitoring Point P8

Monitoring Point A1

Appendix C – Analytical Laboratory Reports

DustScan Ltd
Dust Monitoring and Dust Consultancy Services

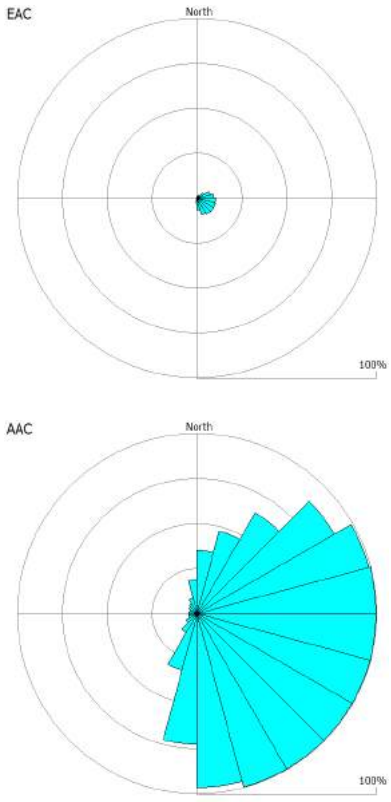
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	A-01 (No point description given)		
Date Out:	19-Jan-15	**Date In:**	23-Jan-15
Interval*:	4 days	**Our Ref:**	55195 / A-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.8
Absolute Area Coverage (AAC%) / interval = 50.7
Effective Area Coverage (EAC%) / day = 1.0
Absolute Area Coverage (AAC%) / day = 12.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	1.0	35.1	0.2	8.8
15°-30°	1.5	47.6	0.4	11.9
30°-45°	2.4	64.9	0.6	16.2
45°-60°	4.4	88.4	1.1	22.1
60°-75°	7.5	99.0	1.9	24.7
75°-90°	9.5	100.0	2.4	25.0
90°-105°	10.5	100.0	2.6	25.0
105°-120°	11.0	100.0	2.8	25.0
120°-135°	11.0	100.0	2.8	25.0
135°-150°	10.6	100.0	2.7	25.0
150°-165°	9.7	100.0	2.4	25.0
165°-180°	6.7	96.7	1.7	24.2
180°-195°	3.0	72.5	0.8	18.1
195°-210°	1.0	32.8	0.2	8.2
210°-225°	0.3	12.2	<0.1	3.0
225°-240°	0.2	7.5	<0.1	1.9
240°-255°	<0.1	5.1	<0.1	1.3
255°-270°	<0.1	4.7	<0.1	1.2
270°-285°	<0.1	4.9	<0.1	1.2
285°-300°	<0.1	4.5	<0.1	1.1
300°-315°	<0.1	5.6	<0.1	1.4
315°-330°	0.1	6.8	<0.1	1.7
330°-345°	0.2	9.1	<0.1	2.3
345°-360°	0.4	19.2	0.1	4.8



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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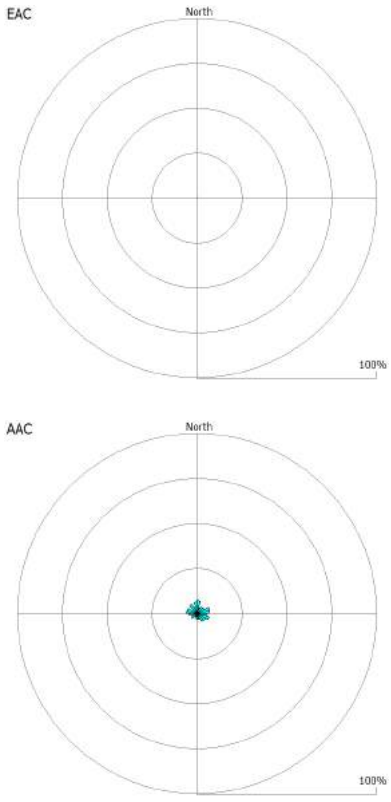
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-01 (No point description given)		
Date Out:	19-Jan-15	**Date In:**	23-Jan-15
Interval*:	4 days	**Our Ref:**	55196 / P-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.1
Absolute Area Coverage (AAC%) / interval = 4.9
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.2

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.4	7.5	<0.1	1.9
15°-30°	<0.1	3.8	<0.1	0.9
30°-45°	<0.1	4.4	<0.1	1.1
45°-60°	<0.1	5.0	<0.1	1.2
60°-75°	0.2	7.2	<0.1	1.8
75°-90°	0.1	6.5	<0.1	1.6
90°-105°	0.1	5.3	<0.1	1.3
105°-120°	0.1	7.0	<0.1	1.7
120°-135°	0.1	5.7	<0.1	1.4
135°-150°	<0.1	5.2	<0.1	1.3
150°-165°	<0.1	3.2	<0.1	0.8
165°-180°	<0.1	3.4	<0.1	0.9
180°-195°	<0.1	3.1	<0.1	0.8
195°-210°	<0.1	2.2	<0.1	0.5
210°-225°	<0.1	2.8	<0.1	0.7
225°-240°	<0.1	4.0	<0.1	1.0
240°-255°	<0.1	2.6	<0.1	0.7
255°-270°	<0.1	4.6	<0.1	1.1
270°-285°	0.1	6.3	<0.1	1.6
285°-300°	0.1	5.8	<0.1	1.5
300°-315°	<0.1	3.9	<0.1	1.0
315°-330°	0.1	6.4	<0.1	1.6
330°-345°	<0.1	4.2	<0.1	1.1
345°-360°	0.1	6.5	<0.1	1.6



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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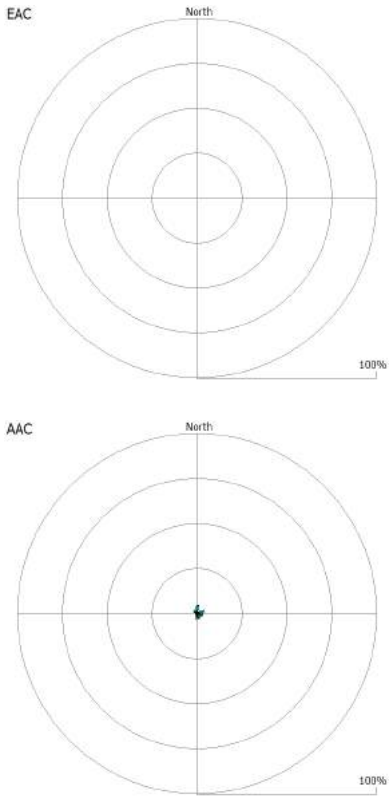
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-02 (No point description given)		
Date Out:	19-Jan-15	**Date In:**	23-Jan-15
Interval*:	4 days	**Our Ref:**	55197 / P-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.0
Absolute Area Coverage (AAC%) / interval = 2.4
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	<0.1	4.8	<0.1	1.2
15°-30°	<0.1	1.2	<0.1	0.3
30°-45°	<0.1	1.5	<0.1	0.4
45°-60°	<0.1	2.6	<0.1	0.6
60°-75°	<0.1	4.4	<0.1	1.1
75°-90°	<0.1	3.3	<0.1	0.8
90°-105°	<0.1	3.2	<0.1	0.8
105°-120°	<0.1	3.4	<0.1	0.9
120°-135°	<0.1	3.0	<0.1	0.7
135°-150°	<0.1	3.1	<0.1	0.8
150°-165°	<0.1	3.5	<0.1	0.9
165°-180°	<0.1	2.4	<0.1	0.6
180°-195°	<0.1	3.3	<0.1	0.8
195°-210°	<0.1	2.0	<0.1	0.5
210°-225°	<0.1	1.3	<0.1	0.3
225°-240°	<0.1	0.5	<0.1	0.1
240°-255°	<0.1	0.3	<0.1	<0.1
255°-270°	<0.1	1.2	<0.1	0.3
270°-285°	<0.1	0.9	<0.1	0.2
285°-300°	<0.1	1.8	<0.1	0.5
300°-315°	<0.1	2.8	<0.1	0.7
315°-330°	<0.1	2.6	<0.1	0.7
330°-345°	<0.1	1.1	<0.1	0.3
345°-360°	<0.1	4.0	<0.1	1.0



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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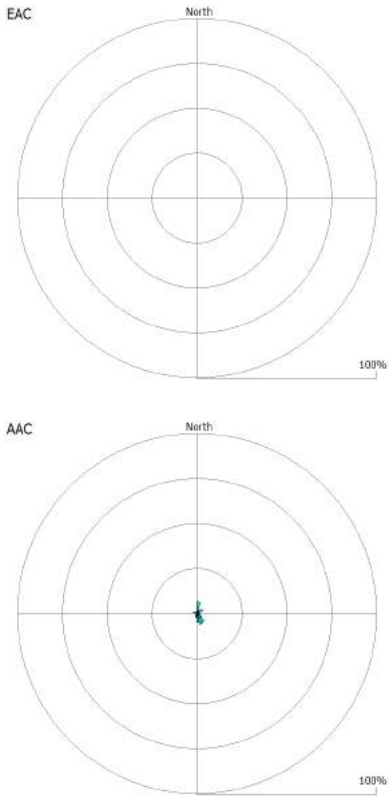
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-03 (No point description given)		
Date Out:	19-Jan-15	**Date In:**	23-Jan-15
Interval*:	4 days	**Our Ref:**	55198 / P-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.0
Absolute Area Coverage (AAC%) / interval = 2.3
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.1	6.6	<0.1	1.6
15°-30°	<0.1	0.9	<0.1	0.2
30°-45°	<0.1	2.6	<0.1	0.6
45°-60°	<0.1	3.8	<0.1	0.9
60°-75°	<0.1	1.7	<0.1	0.4
75°-90°	<0.1	1.2	<0.1	0.3
90°-105°	<0.1	1.0	<0.1	0.3
105°-120°	<0.1	1.6	<0.1	0.4
120°-135°	<0.1	3.5	<0.1	0.9
135°-150°	<0.1	5.7	<0.1	1.4
150°-165°	<0.1	6.1	<0.1	1.5
165°-180°	<0.1	4.9	<0.1	1.2
180°-195°	<0.1	2.6	<0.1	0.7
195°-210°	<0.1	2.3	<0.1	0.6
210°-225°	<0.1	1.6	<0.1	0.4
225°-240°	<0.1	0.5	<0.1	0.1
240°-255°	<0.1	0.7	<0.1	0.2
255°-270°	<0.1	0.5	<0.1	0.1
270°-285°	<0.1	1.6	<0.1	0.4
285°-300°	<0.1	2.7	<0.1	0.7
300°-315°	<0.1	0.5	<0.1	0.1
315°-330°	<0.1	0.9	<0.1	0.2
330°-345°	<0.1	0.4	<0.1	<0.1
345°-360°	<0.1	1.2	<0.1	0.3



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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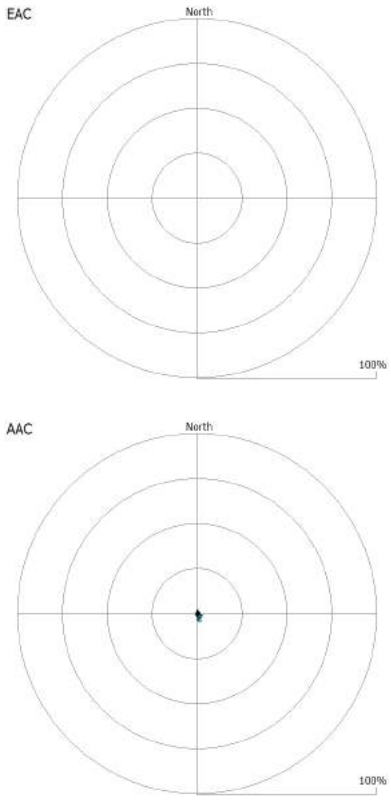
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-04 (No point description given)		
Date Out:	19-Jan-15	**Date In:**	23-Jan-15
Interval*:	4 days	**Our Ref:**	55199 / P-04 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.0
Absolute Area Coverage (AAC%) / interval = 1.8
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	<0.1	2.3	<0.1	0.6
15°-30°	<0.1	2.4	<0.1	0.6
30°-45°	<0.1	0.4	<0.1	0.1
45°-60°	<0.1	1.4	<0.1	0.4
60°-75°	<0.1	1.8	<0.1	0.4
75°-90°	<0.1	1.9	<0.1	0.5
90°-105°	<0.1	1.7	<0.1	0.4
105°-120°	<0.1	3.3	<0.1	0.8
120°-135°	<0.1	3.5	<0.1	0.9
135°-150°	<0.1	3.5	<0.1	0.9
150°-165°	<0.1	5.0	<0.1	1.2
165°-180°	<0.1	3.9	<0.1	1.0
180°-195°	<0.1	1.5	<0.1	0.4
195°-210°	<0.1	1.1	<0.1	0.3
210°-225°	<0.1	1.0	<0.1	0.2
225°-240°	<0.1	1.5	<0.1	0.4
240°-255°	<0.1	1.2	<0.1	0.3
255°-270°	<0.1	0.4	<0.1	<0.1
270°-285°	<0.1	0.4	<0.1	<0.1
285°-300°	<0.1	0.9	<0.1	0.2
300°-315°	<0.1	0.8	<0.1	0.2
315°-330°	<0.1	1.0	<0.1	0.2
330°-345°	<0.1	0.8	<0.1	0.2
345°-360°	<0.1	1.3	<0.1	0.3



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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Dust Monitoring and Dust Consultancy Services

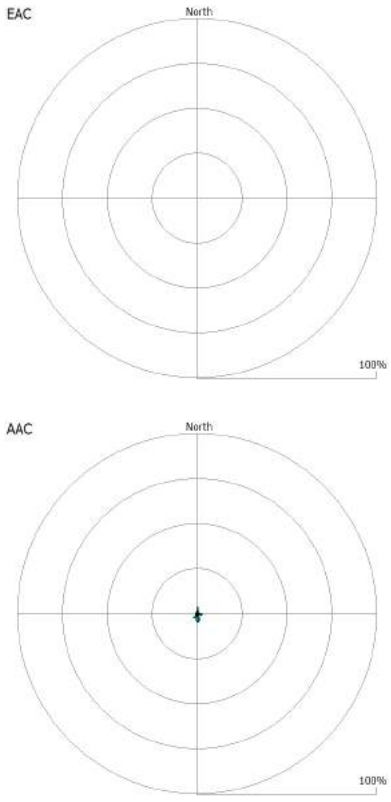
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-05 (No point description given)		
Date Out:	19-Jan-15	**Date In:**	23-Jan-15
Interval*:	4 days	**Our Ref:**	55200 / P-05 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.0
Absolute Area Coverage (AAC%) / interval = 2.0
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	<0.1	3.7	<0.1	0.9
15°-30°	<0.1	2.3	<0.1	0.6
30°-45°	<0.1	1.3	<0.1	0.3
45°-60°	<0.1	1.4	<0.1	0.3
60°-75°	<0.1	1.0	<0.1	0.3
75°-90°	<0.1	1.8	<0.1	0.4
90°-105°	<0.1	3.1	<0.1	0.8
105°-120°	<0.1	2.9	<0.1	0.7
120°-135°	<0.1	1.7	<0.1	0.4
135°-150°	<0.1	2.2	<0.1	0.6
150°-165°	<0.1	4.1	<0.1	1.0
165°-180°	<0.1	4.7	<0.1	1.2
180°-195°	<0.1	4.1	<0.1	1.0
195°-210°	<0.1	3.2	<0.1	0.8
210°-225°	<0.1	3.4	<0.1	0.8
225°-240°	<0.1	1.5	<0.1	0.4
240°-255°	<0.1	0.6	<0.1	0.2
255°-270°	<0.1	1.1	<0.1	0.3
270°-285°	<0.1	1.2	<0.1	0.3
285°-300°	<0.1	0.9	<0.1	0.2
300°-315°	<0.1	0.7	<0.1	0.2
315°-330°	<0.1	0.9	<0.1	0.2
330°-345°	<0.1	0.2	<0.1	<0.1
345°-360°	<0.1	1.1	<0.1	0.3



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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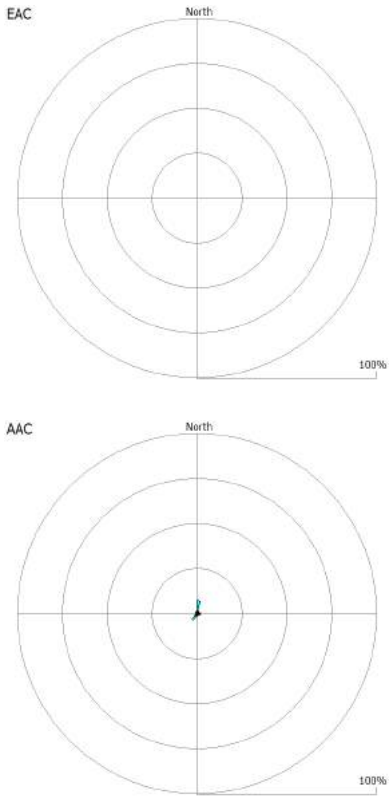
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-06 (No point description given)		
Date Out:	19-Jan-15	**Date In:**	23-Jan-15
Interval*:	4 days	**Our Ref:**	55201 / P-06 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.0
Absolute Area Coverage (AAC%) / interval = 1.8
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.1	7.3	<0.1	1.8
15°-30°	<0.1	1.4	<0.1	0.4
30°-45°	<0.1	2.1	<0.1	0.5
45°-60°	<0.1	1.7	<0.1	0.4
60°-75°	<0.1	0.7	<0.1	0.2
75°-90°	<0.1	2.2	<0.1	0.5
90°-105°	<0.1	1.7	<0.1	0.4
105°-120°	<0.1	2.5	<0.1	0.6
120°-135°	<0.1	1.8	<0.1	0.4
135°-150°	<0.1	1.6	<0.1	0.4
150°-165°	<0.1	1.6	<0.1	0.4
165°-180°	<0.1	1.1	<0.1	0.3
180°-195°	<0.1	1.8	<0.1	0.5
195°-210°	<0.1	2.2	<0.1	0.5
210°-225°	<0.1	4.4	<0.1	1.1
225°-240°	<0.1	1.8	<0.1	0.5
240°-255°	<0.1	0.3	<0.1	<0.1
255°-270°	<0.1	0.2	<0.1	<0.1
270°-285°	<0.1	1.1	<0.1	0.3
285°-300°	<0.1	0.8	<0.1	0.2
300°-315°	<0.1	1.5	<0.1	0.4
315°-330°	<0.1	1.2	<0.1	0.3
330°-345°	<0.1	0.7	<0.1	0.2
345°-360°	<0.1	1.7	<0.1	0.4



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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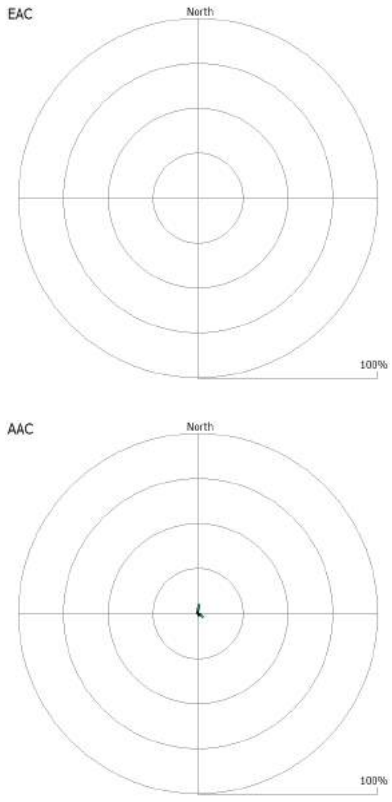
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-07 (No point description given)		
Date Out:	19-Jan-15	**Date In:**	23-Jan-15
Interval*:	4 days	**Our Ref:**	55202 / P-07 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.0
Absolute Area Coverage (AAC%) / interval = 1.4
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	<0.1	5.2	<0.1	1.3
15°-30°	<0.1	1.2	<0.1	0.3
30°-45°	<0.1	0.4	<0.1	0.1
45°-60°	<0.1	0.4	<0.1	0.1
60°-75°	<0.1	0.8	<0.1	0.2
75°-90°	<0.1	0.5	<0.1	0.1
90°-105°	<0.1	0.9	<0.1	0.2
105°-120°	<0.1	2.4	<0.1	0.6
120°-135°	<0.1	3.6	<0.1	0.9
135°-150°	<0.1	2.1	<0.1	0.5
150°-165°	<0.1	1.8	<0.1	0.4
165°-180°	<0.1	1.5	<0.1	0.4
180°-195°	<0.1	0.2	<0.1	<0.1
195°-210°	<0.1	0.4	<0.1	0.1
210°-225°	<0.1	0.4	<0.1	<0.1
225°-240°	<0.1	0.7	<0.1	0.2
240°-255°	<0.1	0.6	<0.1	0.1
255°-270°	<0.1	1.1	<0.1	0.3
270°-285°	<0.1	1.2	<0.1	0.3
285°-300°	<0.1	0.7	<0.1	0.2
300°-315°	<0.1	0.9	<0.1	0.2
315°-330°	<0.1	2.1	<0.1	0.5
330°-345°	<0.1	1.7	<0.1	0.4
345°-360°	<0.1	3.3	<0.1	0.8



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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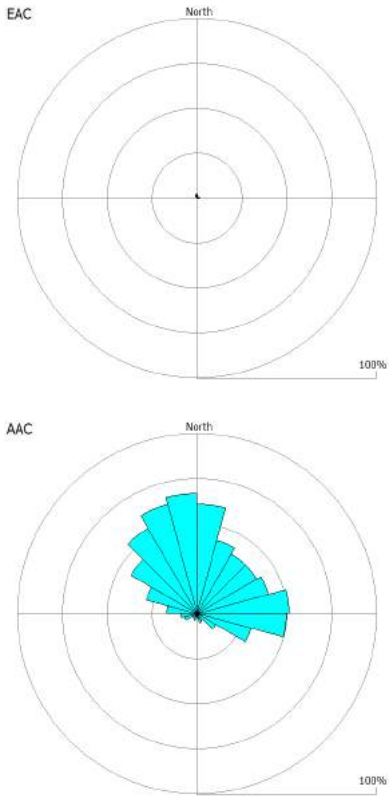
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-08 (No point description given)		
Date Out:	19-Jan-15	**Date In:**	23-Jan-15
Interval*:	4 days	**Our Ref:**	55203 / P-08 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.9
Absolute Area Coverage (AAC%) / interval = 28.4
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 7.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	2.4	60.8	0.6	15.2
15°-30°	1.3	42.3	0.3	10.6
30°-45°	1.2	38.4	0.3	9.6
45°-60°	1.2	38.6	0.3	9.6
60°-75°	1.3	41.2	0.3	10.3
75°-90°	1.6	51.2	0.4	12.8
90°-105°	1.6	49.9	0.4	12.5
105°-120°	0.9	31.1	0.2	7.8
120°-135°	0.3	12.3	<0.1	3.1
135°-150°	<0.1	4.9	<0.1	1.2
150°-165°	<0.1	5.5	<0.1	1.4
165°-180°	<0.1	2.8	<0.1	0.7
180°-195°	<0.1	2.1	<0.1	0.5
195°-210°	<0.1	3.9	<0.1	1.0
210°-225°	<0.1	2.9	<0.1	0.7
225°-240°	<0.1	3.3	<0.1	0.8
240°-255°	0.2	7.4	<0.1	1.8
255°-270°	0.2	9.1	<0.1	2.3
270°-285°	0.4	17.0	0.1	4.2
285°-300°	0.8	29.6	0.2	7.4
300°-315°	1.3	42.7	0.3	10.7
315°-330°	1.9	54.7	0.5	13.7
330°-345°	2.3	63.0	0.6	15.7
345°-360°	2.5	66.9	0.6	16.7



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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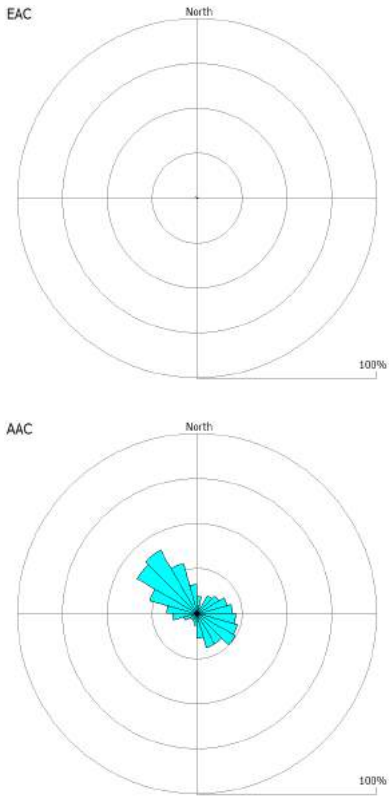
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-01 (No point description given)		
Date Out:	19-Jan-15	**Date In:**	23-Jan-15
Interval*:	4 days	**Our Ref:**	55204 / S-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.5
Absolute Area Coverage (AAC%) / interval = 17.1
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 4.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.2	9.9	<0.1	2.5
15°-30°	0.1	4.8	<0.1	1.2
30°-45°	0.3	11.7	<0.1	2.9
45°-60°	0.4	14.2	<0.1	3.6
60°-75°	0.5	17.3	0.1	4.3
75°-90°	0.5	19.7	0.1	4.9
90°-105°	0.6	21.6	0.2	5.4
105°-120°	0.7	23.3	0.2	5.8
120°-135°	0.8	24.9	0.2	6.2
135°-150°	0.5	19.3	0.1	4.8
150°-165°	0.5	19.7	0.1	4.9
165°-180°	0.4	13.6	<0.1	3.4
180°-195°	0.1	6.7	<0.1	1.7
195°-210°	<0.1	4.7	<0.1	1.2
210°-225°	<0.1	4.1	<0.1	1.0
225°-240°	<0.1	4.7	<0.1	1.2
240°-255°	0.2	7.5	<0.1	1.9
255°-270°	0.4	13.7	<0.1	3.4
270°-285°	0.5	17.1	0.1	4.3
285°-300°	0.8	27.3	0.2	6.8
300°-315°	1.3	38.9	0.3	9.7
315°-330°	1.3	40.9	0.3	10.2
330°-345°	0.8	29.1	0.2	7.3
345°-360°	0.3	16.2	<0.1	4.0



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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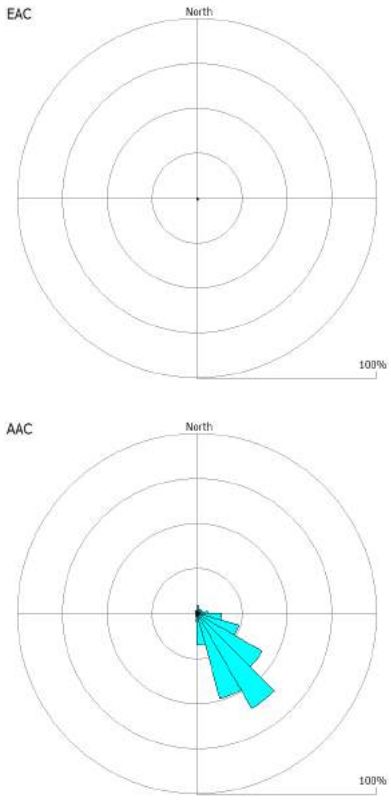
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-02 (No point description given)		
Date Out:	19-Jan-15	**Date In:**	23-Jan-15
Interval*:	4 days	**Our Ref:**	55205 / S-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.3
Absolute Area Coverage (AAC%) / interval = 10.5
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 2.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	<0.1	4.4	<0.1	1.1
15°-30°	<0.1	2.3	<0.1	0.6
30°-45°	<0.1	3.2	<0.1	0.8
45°-60°	<0.1	3.3	<0.1	0.8
60°-75°	<0.1	3.4	<0.1	0.9
75°-90°	0.1	6.4	<0.1	1.6
90°-105°	0.3	13.9	<0.1	3.5
105°-120°	0.6	24.3	0.2	6.1
120°-135°	1.3	42.1	0.3	10.5
135°-150°	1.8	61.0	0.4	15.3
150°-165°	1.5	49.1	0.4	12.3
165°-180°	0.4	17.6	0.1	4.4
180°-195°	<0.1	4.6	<0.1	1.1
195°-210°	<0.1	1.9	<0.1	0.5
210°-225°	<0.1	1.7	<0.1	0.4
225°-240°	<0.1	1.1	<0.1	0.3
240°-255°	<0.1	1.1	<0.1	0.3
255°-270°	<0.1	0.5	<0.1	0.1
270°-285°	<0.1	0.6	<0.1	0.1
285°-300°	<0.1	0.9	<0.1	0.2
300°-315°	<0.1	1.7	<0.1	0.4
315°-330°	<0.1	2.4	<0.1	0.6
330°-345°	<0.1	1.7	<0.1	0.4
345°-360°	<0.1	2.4	<0.1	0.6



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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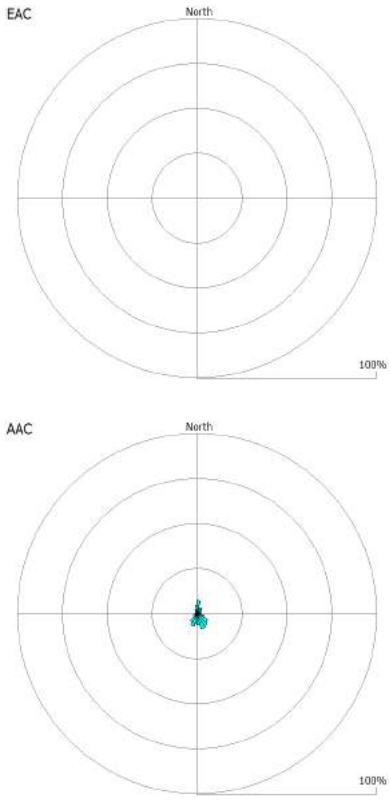
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-03 (No point description given)		
Date Out:	19-Jan-15	**Date In:**	23-Jan-15
Interval*:	4 days	**Our Ref:**	55206 / S-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.1
Absolute Area Coverage (AAC%) / interval = 4.0
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.0

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day
00°-15°	0.2	7.5	<0.1	1.9
15°-30°	<0.1	3.5	<0.1	0.9
30°-45°	<0.1	4.0	<0.1	1.0
45°-60°	<0.1	3.5	<0.1	0.9
60°-75°	<0.1	2.6	<0.1	0.6
75°-90°	<0.1	2.0	<0.1	0.5
90°-105°	<0.1	2.4	<0.1	0.6
105°-120°	<0.1	4.1	<0.1	1.0
120°-135°	0.1	6.9	<0.1	1.7
135°-150°	0.2	8.1	<0.1	2.0
150°-165°	0.2	9.2	<0.1	2.3
165°-180°	0.1	6.3	<0.1	1.6
180°-195°	0.1	5.7	<0.1	1.4
195°-210°	0.2	7.3	<0.1	1.8
210°-225°	0.1	5.6	<0.1	1.4
225°-240°	<0.1	2.8	<0.1	0.7
240°-255°	<0.1	1.6	<0.1	0.4
255°-270°	<0.1	1.6	<0.1	0.4
270°-285°	<0.1	0.6	<0.1	0.2
285°-300°	<0.1	0.4	<0.1	<0.1
300°-315°	<0.1	1.4	<0.1	0.3
315°-330°	<0.1	2.0	<0.1	0.5
330°-345°	<0.1	3.0	<0.1	0.7
345°-360°	<0.1	4.7	<0.1	1.2



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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Dust Monitoring Results, August 2015, September 2015, October 2015, and January 2016 Monitoring Events, Burgard Industrial Park – SSI Area, Portland, Oregon

Bridgewater Group, 2016

BRIDGEWATER GROUP, INC.

Dust Monitoring Results
August 2015, September 2015, October 2015, and January 2016 Monitoring Events
Burgard Industrial Park - SSI Area
Portland, Oregon

TO:	Jim Orr/Oregon DEQ
CC:	Mat Cusma/Schnitzer Mark Bartee/Schnitzer
FROM:	Ross Rieke/Bridgewater Group
DATE:	March 11, 2016

This memorandum presents the results of the August 2015, September 2015, October 2015, and January 2016 dust monitoring events performed at the Burgard Industrial Park (BIP) in Portland, Oregon (Figure 1, Figure 2). Earlier Bridgewater Group memoranda have presented the results of the four previous dust monitoring events (July 2014, August 2014, October 2014, and January 2015).

- *Dust Monitoring Results, July and August 2014 Monitoring Events,* September 19, 2014;
- *Dust Monitoring Results, October 2014 Sampling Event,* November 10, 2014; and
- *Dust Monitoring Results, January 2015 Monitoring Ev*ent, March 11, 2015.

DEQ requested in a July 8, 2015 letter that Schnitzer perform four additional dust monitoring events. This memorandum presents the results of the requested four events. This memorandum also presents a summary of all of the dust monitoring events completed the past two years.

The dust monitoring was performed in accordance with the May 7, 2014 *Dust Monitoring Plan* (Dust Monitoring Plan) and as a Source Control Evaluation (SCE) effort pursuant to the terms of the June 13, 2000 *Voluntary Agreement for Remedial Investigation and Cleanup Measures* between Schnitzer and DEQ. After the July and August 2014 monitoring events, the duration of the monitoring events were reduced from seven days to four days as proposed in the September 19, 2014 memorandum *Dust Monitoring Results, July and August 2014 Sampling Events* and as approved by DEQ in an October 6, 2014 email.

The purpose of the dust monitoring program is to support the evaluation of potential impacts to the river and other offsite areas from airborne particulates. To accomplish this task, the Dust Monitoring Plan details the procedures to compare the dust levels at the perimeter of the SSI area relative to the dust levels at targeted activities within the SSI area and, as a result, assess the effectiveness of SSI dust control Best Management Practices (BMPs).

Dust Monitoring Methodology

Dust monitoring was performed using DustScan DS100 passive, directional dust gauges (Appendix A). Twelve monitoring pole stations were established within, around, and distant from the site (Figure 3). Photographs of the monitoring stations are provided in Appendix B. The approximate 3 ½-inch diameter by approximately 13-inches long cylindrical, sticky paper-

covered gauges were placed on the station poles and then removed four days later. The gauge cylinders were taken into an enclosed office where the sticky paper was removed, mounted and sealed with transparent cover sheets, and shipped to the analytical laboratory. The analytical laboratory reports are provided in Appendix C.

The duration of each of the dust monitoring events was four days. As noted above, DEQ approved reducing the duration from seven days to four days in an October 6, 2014 email. The detailed period of monitoring for each event was as follows[1]:

- August 2015 monitoring event: August 10-14, 2015 with the gauges installed between 10:30 AM and 1:25 PM on August 10, 2015 and removed between 11:55 AM and 1:30 PM on August 14, 2015.
- September 2015 monitoring event: September 14-18, 2015 with the gauges installed between 12:35 PM and 1:50 PM on September 14, 2015 and removed between 11:05 AM and 1:25 PM on September 18, 2015.
- October 2015 monitoring event: October 19-23, 2015 with the gauges installed between 11:15 AM and 1:55 PM on October 19, 2015 and removed between 12:20 PM and 1:35 PM on October 23, 2015.
- January 2016 monitoring event: January 18-22, 2016 with the gauges installed between 10:40 AM and 12:25 PM on January 18, 2016 and removed between 11:05 AM and 12:30 PM on January 22, 2016.

No unusual events or conditions were noted during the installation and retrieval of the dust monitoring devices.

Dust Monitoring Conditions

Weather Conditions

Weather conditions during the monitoring events were recorded using the weather station established at the SSI site in early August 2014.

Figure 4a, Figure 4b, Figure 4c, and Figure 5d present the daily temperature, humidity, and rainfall data for the August 2015, September 2015, October 2015, and January 2016 events, respectively. The temperature, humidity, and rainfall for the monitoring events were as follows:

August 2015 - About 0.01 inch of rainfall occurred in the last couple of hours of the August 2015 event. No rain occurred the week prior to the dust monitoring event. Temperature during the August 2015 event ranged from a high of 91.1 degrees on August 12 to a low of 63.0 degrees on August 11. Humidity for the August 2015 event ranged from a high of 88 percent on August 13 to a low of 32 percent on August 10.

September 2015 – About 0.8 inch of rainfall occurred during the September 2015 event with most of the rain falling on September 17. No rain occurred the week prior to the monitoring event. Temperature during the September 2015 event ranged from a high of 69.7 degrees on September 16 to a low of 49.9 degrees on September 15. Humidity for the September 2015 event ranged from a high of 95 percent on September 18 to a low of 43 percent on September 16.

October 2015 – About 0.01 inch of rainfall occurred in the first couple of hours of the

[1] The times of installation and removal were selected to meet personnel scheduling demands and are not expected to have had a material impact on the dust monitoring results.

October 2015 event. About 0.1 inch of rain occurred the week prior to the dust monitoring event. Temperature during the October 2015 event ranged from a high of 65.2 degrees on October 20 to a low of 46.6 degrees on October 23. Humidity for the October 2015 event ranged from a high of 98 percent on October 21 to a low of 53 percent on October 22.

January 2016 - About 1.8 inch of rainfall occurred during the January 2016 event with rain falling on every day during the monitoring period. Over 4 inches of rain occurred the week prior to the monitoring event. Temperature during the January 2016 event ranged from a high of 57.4 degrees on January 22 to a low of 40.0 degrees on January 18. Humidity for the January 2016 event ranged from a high of 97 percent on January 18 to a low of 65 percent on January 22.

Figure 5a, Figure 5b, Figure 5c, and Figure 5d show the wind roses during the August 2015, September 2015, October 2015, and January 2016 events, respectively. As shown on the wind roses, the wind conditions during the sampling events were as follows:

August 2015 - The winds were modest and generally from the northwest to north-northeast.

September 2015 – The winds were modest with varying wind direction. The relatively higher wind speeds noted during this monitoring event tended to be from the southeast.

October 2015 – The winds were modest with the predominant wind coming from the northwest.

January 2016 – Relatively greater wind speeds were noted during this event with the winds coming primarily from the southeast

In general, consistent with typical weather patterns, rainfall and wind were generally greater during the January event than during the summer and fall events in August, September, and October. Drier and warmer weather were noted during the summer and fall events.

Operations During Monitoring Events

The site operations during the four monitoring events were consistent with previous monitoring events and included normal scrap yard activities (scrap receiving, shredder, processed ferrous steel management, and paved and unpaved roadway traffic). Barge unloading (of unprocessed scrap metal) occurred during the September 2015 monitoring event. Ship loading (of processed ferrous steel) did not occur during the August 2015, September 2015, October 2015, and January 2016 events. Dust generating activities occurring in the area around the SSI site included vehicle traffic on Port of Portland Terminal 4, Northwest Pipe and Portland Container sites, and vehicle traffic on Burgard Way and Burgard Road. In particular, track-out of soil from the Portland Container site resulted in heavy dust generation from traffic on Burgard Way.

Dust Monitoring Results

The dust monitoring analytical laboratory reports (Appendix C) present the dust monitoring data in two metrics: Absolute Area Coverage (AAC) and Effective Area Coverage (EAC). AAC values (expressed as a percentage) represent the amount of dust captured on the monitoring device and provide a direction-specific measure of the overall amount of dust flux over the monitoring period at the monitoring station. As such, the AAC provides the appropriate measurement to support the objective of the dust monitoring program. EAC values pertain to the color or opacity of the dust and therefore may provide an indication of the visual impact of dust generating activities, and possibly qualitative information on the presence of different sources of dust, but

otherwise are not relevant to the dust monitoring objective.

Figure 5a, Figure 5b, Figure 5c, and Figure 5d present the directional AAC plots for the August 2015, September 2015, October 2015, and January 2016 monitoring events, respectively. Table 1[2] presents the maximum and average (around the circumference) AAC values for each station. Table 2 presents the average ACC values with the values adjusted for the difference in event durations (see footnote 2). Table 1 and Table 2 include data from the previous events. Figure 7a, Figure 7b, Figure 7c, and Figure 7d present bar charts showing the relative AAC values for the targeted activities, perimeter[3], and background stations for the August 2015, September 2015, October 2015, and January 2016 monitoring events, respectively. Figure 8 presents an overall summary and comparison of the ACC values for all events. Tables of directional AAC values for each station are presented in the analytical laboratory reports provided in Appendix C.

The AAC values presented in the figures, tables, and Appendix C are the result of a computer-based, optical analytical process that measures the relative amount of dust captured on the sticky paper placed on the monitoring cylinder. The AAC values are useful to compare with other AAC values in assessing the qualitative differences in dust levels between monitoring stations, as well as the predominant direction(s) of dust flux at each station. AAC values do not represent any standard particulate measurement such as PM10 or dust concentration (e.g., mg/m^3) and a particular AAC value does not represent either “high” or “low” dust levels (other than in relative comparison to other monitoring stations).

The results of the August 2015, September 2015, October 2015, and January 2016 dust monitoring events indicate the following (see Table 1):

- The dust flux (as measured by the average AAC) at the SSI site perimeter was 58 percent to 74 percent less than the dust flux at the SSI targeted activities during the August 2015, September 2015, October 2015, and January 2016 events. This difference in the dust levels from the targeted activities to the site perimeter is somewhat less than the differences observed in the July 2014, August 2014, October 2014, and January 2015 monitoring events (70 percent to 91 percent)
- The average dust flux at the monitoring stations in the river (P2, P3 and P4) was 67 percent to 86 percent less than the dust flux measured at the targeted activities.
- The dust flux during the October 2015 and January 2016 events was less than during the August 2015 and September 2015 events. These relatively lower dust flux values are consistent with what was observed during the Summer/Fall 2014 and January 2015 events and is likely the result of the wetter/cooler January weather. Note that there was significant rainfall leading into the October 2015 event, and every day during the January 2016 event.
- The dust flux was generally greater at all stations during the August 2015 and September 2015 events relative to the dust flux noted during all other monitoring events. There were no apparent climatic conditions (relative to other summer and early fall monitoring events) or operational changes that explain these relatively greater dust fluxes during the August 2015

[2] The duration of the July 2014 and August 2014 monitoring events was seven days as compared to the four-day duration of the other events. Thus, all other factors being equal, the AAC values on Table 1 for the July 2014 and August 2014 events would be expected to be greater than those measured the other events. This change in monitoring duration was made in order to reduce the saturation of the samplers with dust, thereby allowing better resolution for the measurements of dust flux at each station. The ACC values on Table 2 are adjusted for this difference in event duration.

[3] Based on the relatively high AAC values, the dust flux direction indicated by the “dust rose” (predominant dust flux consistently from the north, see Figures 5a-d), and the minimal SSI activities in the area, the dust levels at station P8 are clearly impacted by offsite activities (traffic on North Burgard Way and possibly activities on parcels to the north), are not representative of dust generated from SSI activities and results from this station are not appropriate for comparison as a perimeter station. The dust levels measured at station P8 are included in the discussion of background dust level (i.e., along with station A1 measurements).

and September 2015 events. The background stations experienced similar unexpectedly high values, suggesting that the increased dust flux measured during the August 2015 and September 2015 events appear to be the result of generally increased dust levels throughout the site area.

- The background stations (A1 and P8) indicate that non-SSI dust sources are present in the area around the SSI site and likely contribute to the dust levels measured on the SSI site and at the perimeter stations. The average background dust flux values were about *118 to 415 percent* of the average targeted activity dust flux values in the August 2015, September 2015, October 2015, and January 2016 monitoring events. In other words, the background monitoring stations are measuring greater dust flux from offsite activities than the stations specifically sited to capture the SSI activities expected to have the highest dust impact. The dramatically higher dust flux levels at the background locations relative to the SSI targeted activity locations (and, even more so, relative to perimeter monitoring stations) are consistent with the previous dust monitoring event results.
- Station P4 and Station P7, located on the northern edge of the SSI site, noted dust flux from the north (i.e., off the SSI site). These results provide further evidence that dust from offsite sources (in this case, to the north) is apparently impacting monitoring stations on the SSI site.

There was some correlation between the wind directions measured during the monitoring events and the predominant dust migration direction during the events, but it was not universally consistent.

August 2015 - Only the perimeter stations in along the western edge of the site (i.e., along the Willamette River) noted a correlation between predominant wind direction (from the north) and the direction of greatest dust migration.

September 2015 - Several, but not all, of the stations noted a correlation between the predominant wind direction (from the southeast) and the direction of greatest dust migration.

October 2015 - The predominant wind was from the northwest which was the direction from which most stations noted dust migration.

January 2016 – The wind was predominantly from the southeast and all of the monitoring stations, except Station P-1 on the southern edge of the site, noted relatively greater dust migration from the southeast.

Conclusion of Overall Dust Monitoring Program

The eight dust monitoring events performed over the past two years consistently noted the following:

- Dust flux at the SSI targeted activities are dramatically less than background dust flux measured from offsite locations. Over the eight dust monitoring events, the average background AAC values were about 1.5 times the average AAC values at the SSI targeted activities – activities that were targeted with the expectation that they would generate the greatest amount of dust at the SSI facility. The relatively high dust flux noted at the background stations is consistent with the observed dust consistently generated at other sites in the Burgard Industrial Park.
- Dust flux at the SSI perimeter is dramatically less than the dust flux noted at the SSI targeted activities. Over the eight dust monitoring events, the average perimeter AAC values

were about 72 percent less than the average AAC values at the SSI targeted activities. More particular to assessing potential impact to the Willamette River, the average river perimeter (P2, P3, and P4) AAC values were about 82 percent less than the average AAC values at the SSI targeted activities.

- The average background dust flux was almost six times the average dust flux at the SSI perimeter over the eight dust monitoring events.

In summary, the dust control BMPs being implemented by SSI are effective and activities at the SSI site are not materially contributing to the dust levels in the area beyond the SSI site boundaries, in the overall Burgard Industrial Park, nor to the Willamette River.

Attachments:

Table 1 – Dust Monitoring Data
Table 2 – Dust Monitoring Data, Comparison of All Events
Figure 1 – Site Location Map
Figure 2 – Site Plan, Burgard Industrial Park
Figure 3 – Dust Monitoring Station Locations
Figure 4a – Daily Temperature, Humidity, and Rainfall, August 2015 Dust Monitoring Event
Figure 4b – Daily Temperature, Humidity, and Rainfall, September 2015 Dust Monitoring Event
Figure 4c – Daily Temperature, Humidity, and Rainfall, October 2015 Dust Monitoring Event
Figure 4d – Daily Temperature, Humidity, and Rainfall, January 2016 Dust Monitoring Event
Figure 5a – AAC Directional Plots and Wind Rose, August 2015 Dust Monitoring Event
Figure 5b – AAC Directional Plots and Wind Rose, September 2015 Dust Monitoring Event
Figure 5c – AAC Directional Plots and Wind Rose, October 2015 Dust Monitoring Event
Figure 5d – AAC Directional Plots and Wind Rose, January 2016 Dust Monitoring Event
Figure 6a – AAC Values Comparison, August 2015 Dust Monitoring Event
Figure 6b – AAC Values Comparison, September 2015 Dust Monitoring Event
Figure 6c – AAC Values Comparison, October 2015 Dust Monitoring Event
Figure 6d – AAC Values Comparison, January 2016 Dust Monitoring Event
Figure 7 - AAC Values Comparison, All Dust Monitoring Events
Appendix A – DustScan Manufacturer Literature
Appendix B - Dust Monitoring Station Photographs
Appendix C - Analytical Laboratory Reports

Tables

Table 1
Dust Monitoring Data
Burgard Industrial Park - SSI

		AAC (Percent)[1]															
		Jul-14[2]		Aug-14[2]		Oct-14		Jan-15		Aug-15		Sep-15		Oct-15		Jan-16	
Station	Location	Ave[3]	Max[3]	Ave	Max[3]	Ave	Max[3]	Ave	Max[3]	Ave	Max[3]	Ave	Max[3]	Ave	Max[3]	Ave	Max[3]
S1	Scrap pile management	100.00	100.00	90.63	100.00	33.96	97.70	17.12	40.90	93.26	100.00	85.02	100.00	28.43	99.30	18.51	65.80
S2	Dock activities/shear	64.53	100.00	65.01	100.00	48.87	100.00	10.48	61.00	82.11	100.00	78.63	99.20	3.24	8.70	30.98	100.00
S3	Shredder residue loading	72.20	100.00	59.26	100.00	10.84	32.50	4.03	9.20	50.78	94.00	36.64	95.90	12.57	55.20	12.67	34.90
P1	South perimeter	32.60	61.90	50.09	99.30	1.50	6.70	4.86	7.50	38.43	77.30	18.61	40.20	12.47	28.40	8.76	12.80
P2	Southwest perimeter	9.35	23.30	24.56	99.70	4.52	9.50	2.43	4.80	15.15	54.90	9.60	20.20	4.26	23.60	9.17	17.60
P3	West perimeter	18.53	62.30	13.42	62.20	1.25	5.10	2.30	6.60	9.09	36.90	15.85	35.10	2.93	10.00	4.92	12.70
P4	Northwest perimeter	7.35	11.90	10.09	45.50	0.71	3.20	1.79	5.00	7.60	15.30	19.80	57.60	2.99	13.20	6.67	20.80
P5	North perimeter	24.24	39.30	19.54	42.90	1.01	3.30	2.05	4.70	39.12	97.50	25.39	81.30	4.94	16.90	14.75	50.30
P6	Northeast perimeter	24.12	61.80	23.68	51.90	6.69	26.70	1.81	7.30	47.05	100.00	19.91	48.50	6.16	18.30	9.81	27.20
P7	Northeast perimeter	9.46	27.30	9.07	20.90	3.31	11.40	1.42	5.20	20.27	76.80	12.92	30.70	1.95	9.40	6.28	11.60
P8	Northeast background	95.65	100.00	96.54	100.00	69.37	100.00	28.40	66.90	98.19	100.00	83.20	100.00	79.08	100.00	7.77	11.70
A1	West background	74.91	100.00	79.70	100.00	28.52	83.70	50.69	100.00	84.55	100.00	74.92	100.00	54.55	88.90	58.26	100.00
Average All Stations		44.41	65.65	45.13	76.87	17.54	39.98	10.61	26.59	48.80	79.39	40.04	67.39	17.80	39.33	15.71	38.78
Average Target Activities Stations (S1 through S3 stations)		78.91	100.00	71.63	100.00	31.22	76.73	10.55	37.03	75.38	98.00	66.76	98.37	14.74	54.40	20.72	66.90
Average Perimeter Stations (P1 through P7 stations)		17.95	41.11	21.49	60.34	2.71	9.41	2.38	5.87	25.24	65.53	17.44	44.80	5.10	17.11	8.62	21.86
Average River Perimeter Stations (P2, P3, and P4)		11.74	32.50	16.03	69.13	2.16	5.93	2.17	5.47	10.61	35.70	15.08	37.63	3.39	15.60	6.92	17.03
Average Background Stations (P8 and A1 stations)		85.28	100.00	88.12	100.00	48.94	91.85	39.55	83.45	91.37	100.00	79.06	100.00	66.81	94.45	33.01	55.85
Percent Average Perimeter Less Than Target Activities		77%	59%	70%	40%	91%	88%	77%	84%	67%	33%	74%	54%	65%	69%	58%	67%
Percent Average River Perimeter Less Than Target Activities		85%	68%	78%	31%	93%	92%	79%	85%	86%	64%	77%	62%	77%	71%	67%	75%
Average Background as Percent of Average Target Activities		108%	100%	123%	100%	157%	120%	375%	225%	121%	102%	118%	102%	453%	174%	159%	83%

1 - See text, Appendix A, and Appendix C for description of Absolute Area Coverage (AAC).

2 - The duration of the July 2014 and August 2014 events was seven days while the duration of the other events was four days. Thus, all other factors being equal, the July 2014 and August 2014 AAC values would be expected to be more than the other events.

3 - Given the presence of 100% values, calculations of averages, reductions, and comparisons using maximum AACs at bottom of table are approximate.

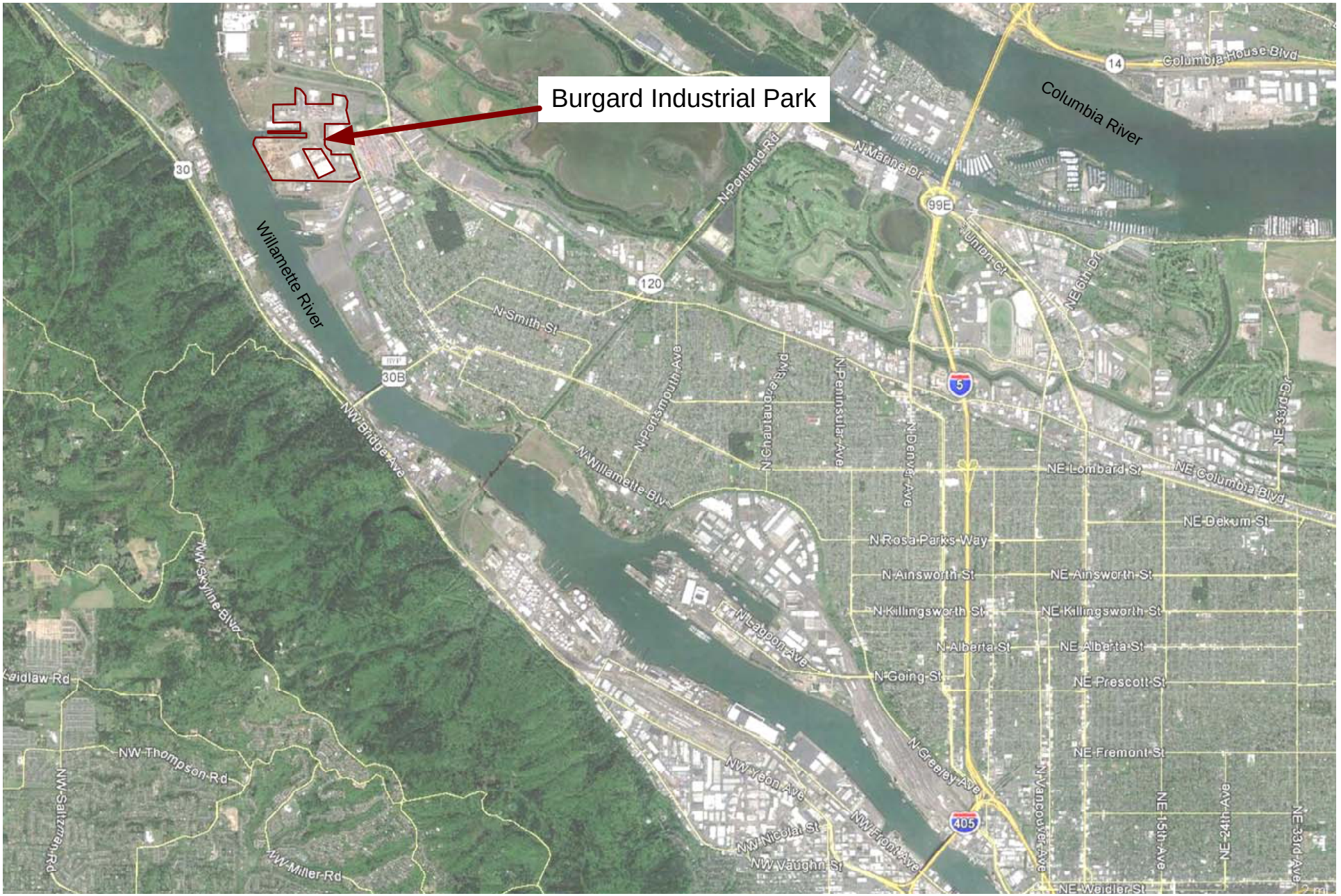
Table 2
Dust Monitoring Data - Comparison of All Events
Burgard Industrial Park - SSI

		AAC (Percent)[1]								
Station	**Location**	**Jul-14[2]**	**Aug-14**	**Oct-14**	**Jan-15**	**Aug-15**	**Sep-15**	**Oct-15**	**Jan-16**	**Ave All**
S1	Scrap pile construction/deconstruction	57.14	51.79	33.96	17.12	93.26	85.02	28.43	18.51	48.15
S2	Dock activities/shear	36.87	37.15	48.87	10.48	82.11	78.63	3.24	30.98	41.04
S3	Shredder residue loading	41.25	33.86	10.84	4.03	50.78	36.64	12.57	12.67	25.33
P1	South perimeter	18.63	28.62	1.50	4.86	38.43	18.61	12.47	8.76	16.48
P2	Southwest perimeter	5.34	14.04	4.52	2.43	15.15	9.60	4.26	9.17	8.06
P3	West perimeter	10.59	7.67	1.25	2.30	9.09	15.85	2.93	4.92	6.82
P4	Northwest perimeter	4.20	5.77	0.71	1.79	7.60	19.80	2.99	6.67	6.19
P5	North perimeter	13.85	11.16	1.01	2.05	39.12	25.39	4.94	14.75	14.03
P6	Northeast perimeter	13.78	13.53	6.69	1.81	47.05	19.91	6.16	9.81	14.84
P7	Northeast perimeter	5.41	5.18	3.31	1.42	20.27	12.92	1.95	6.28	7.09
P8	Northeast background	54.65	55.17	69.37	28.40	98.19	83.20	79.08	7.77	59.48
A1	West background	42.80	45.55	28.52	50.69	84.55	74.92	54.55	58.26	54.98
Average All Stations		25.38	25.79	17.54	10.61	48.80	40.04	17.80	15.71	25.21
Average Target Activities Stations (S1 through S3 stations)		45.09	40.93	31.22	10.55	75.38	66.76	14.74	20.72	38.17
Average Perimeter Stations (P1 through P7 stations)		10.26	12.28	2.71	2.38	25.24	17.44	5.10	8.62	10.50
Average River Perimeter Stations (P2, P3, and P4 stations)		6.71	9.16	2.16	2.17	10.61	15.08	3.39	6.92	7.02
Average Background Stations (P8 and A1 stations)		48.73	50.36	48.94	39.55	91.37	79.06	66.81	33.01	57.23
Percent Average Target Activities Less Than Average Perimeter		77%	70%	91%	77%	67%	74%	65%	58%	72%
Percent Average Target Activities Less Than Average River Perimeter		85%	78%	93%	79%	86%	77%	77%	67%	82%
Average Background as Percent of Average Target Activities		108%	123%	157%	375%	121%	118%	453%	159%	150%

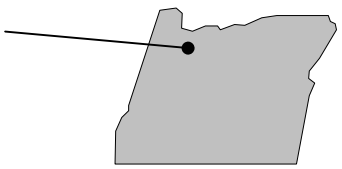
1 - July 2014 and August 2014 AAC values scaled down by 4/7 to reflect longer monitoring period during these events (7 days) relative to other events (4 days).

2 - July 2014 S1 adjusted value based on raw value of 100 percent (see Table 1). Thus, calculated averages for July 2014 event are approximate.

Figures



Portland, Oregon



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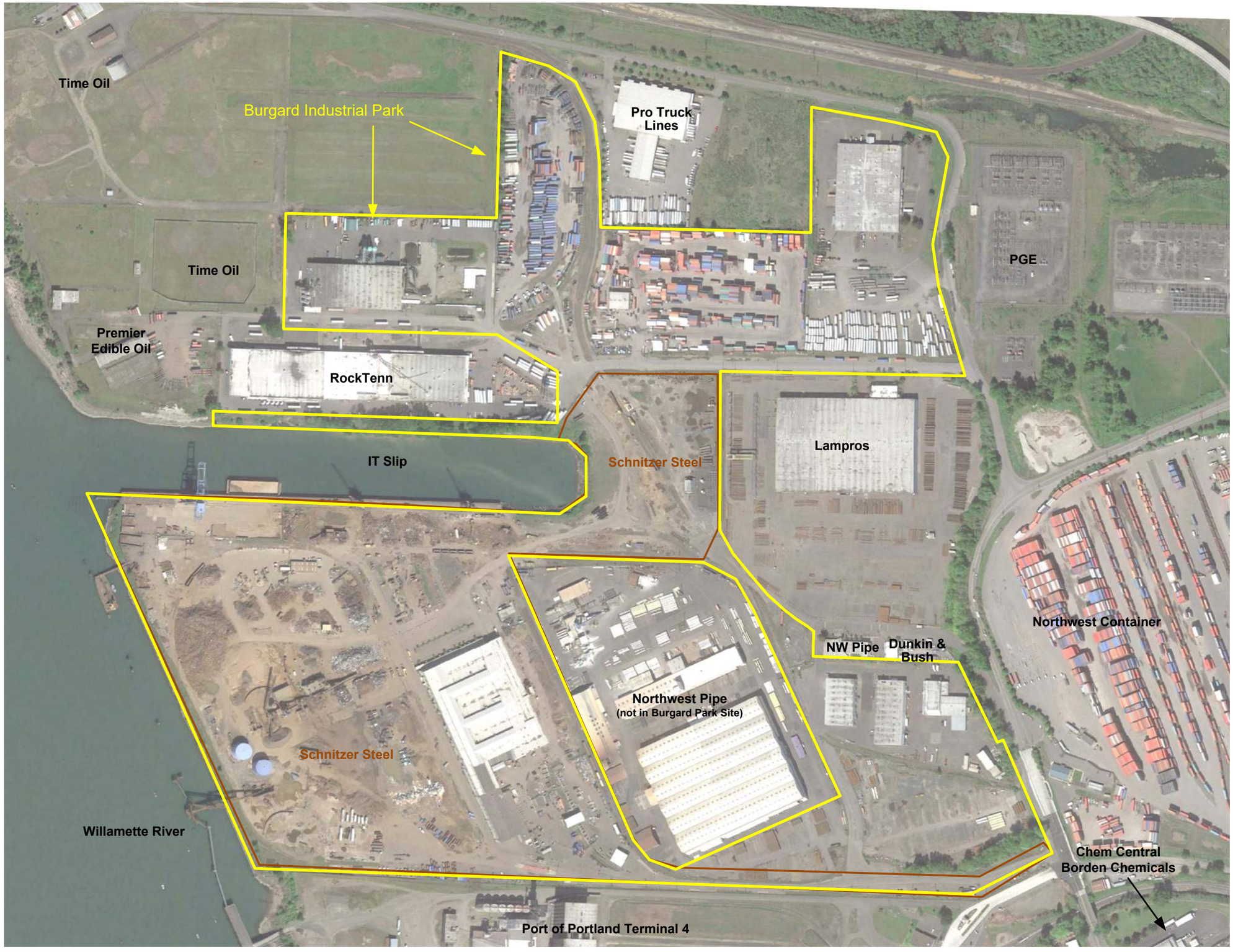
Approximate Scale

5000 feet

Base photograph April 2015

Figure 1
Site Location Map
Burgard Industrial Park

BRIDGEWATER GROUP, INC.



Base photograph April 2015

Approximate Scale

400 Feet

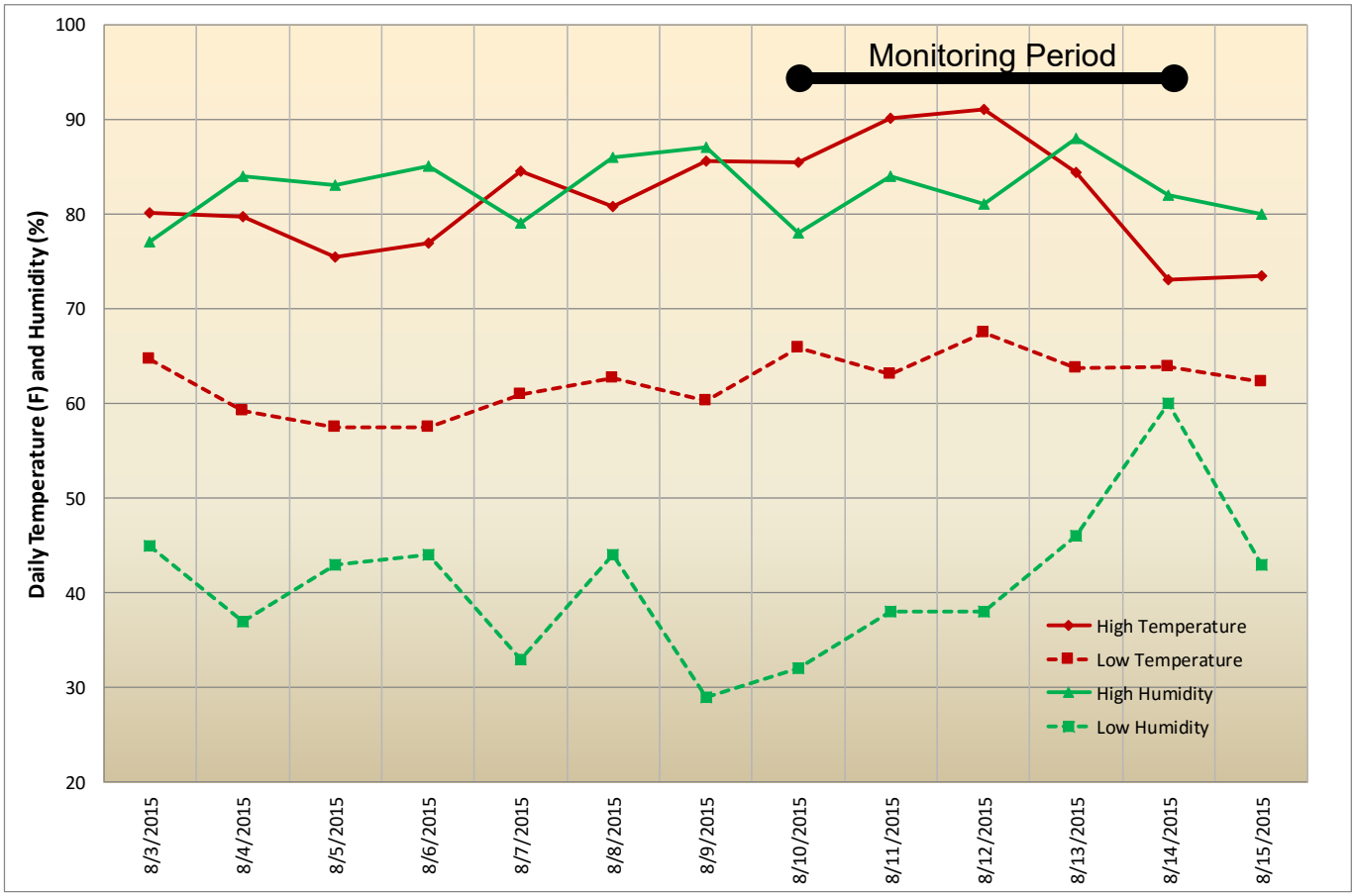
Figure 2
Site Plan
Burgard Industrial Park
Portland, Oregon

BRIDGEWATER GROUP, INC.

Base photograph April 2015

Figure 3
Dust Monitoring Station Locations
Burgard Industrial Park - SSI
Portland, Oregon

BRIDGEWATER GROUP, INC.



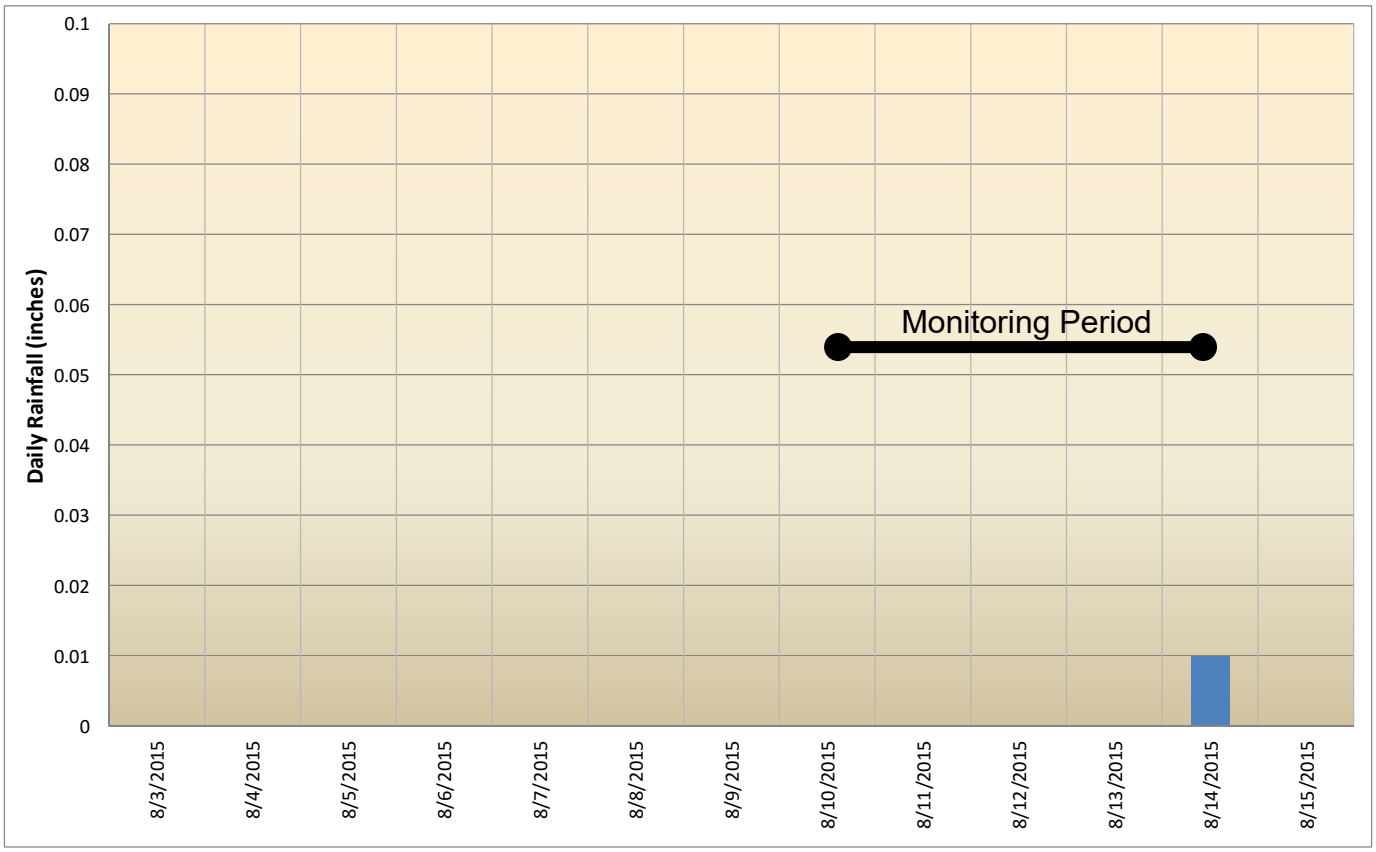


Figure 4a
Daily Temperature, Humidity, and Rainfall
August 2015 Dust Monitoring Event
Burgard Industrial Park - SSI

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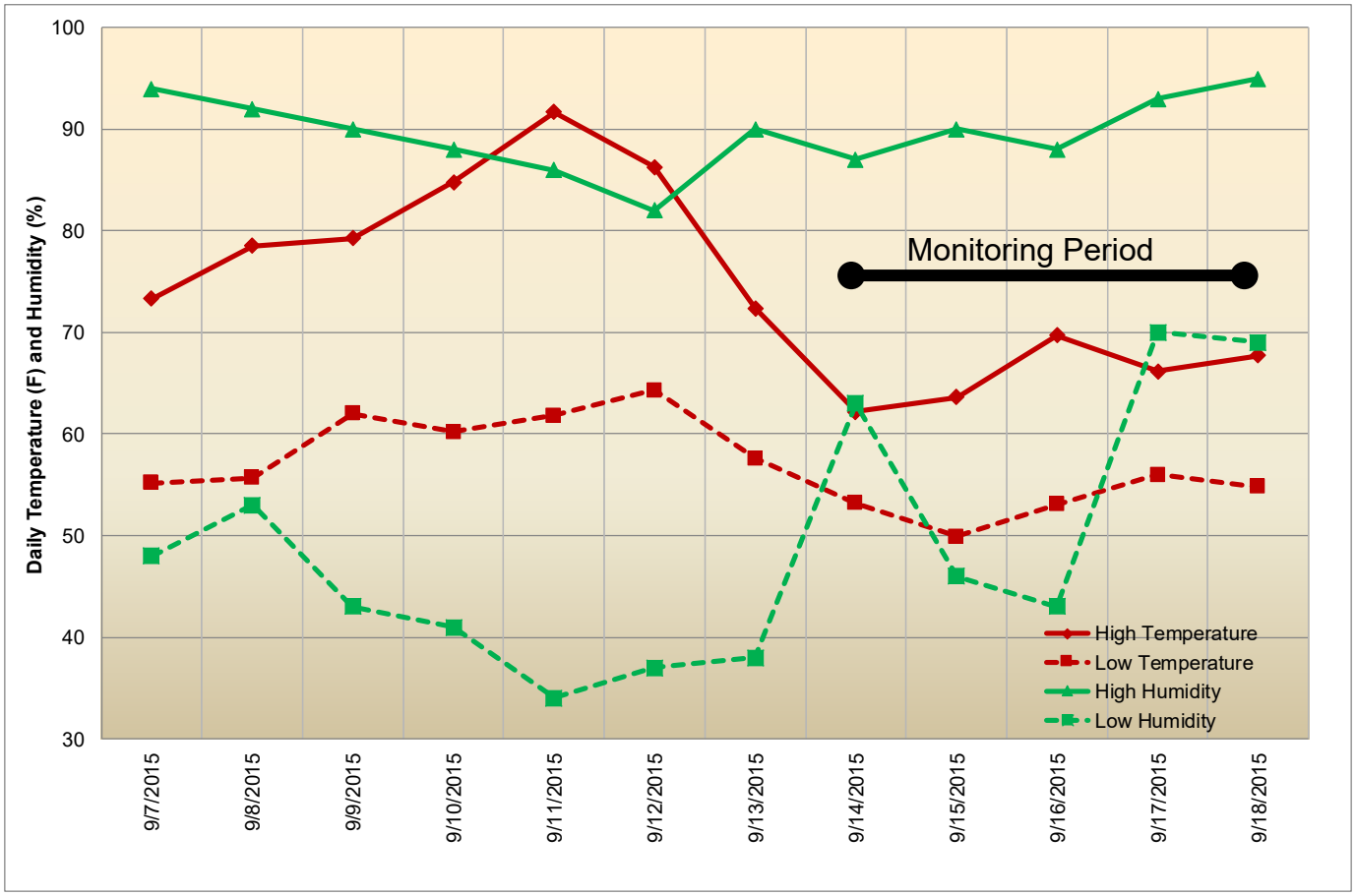


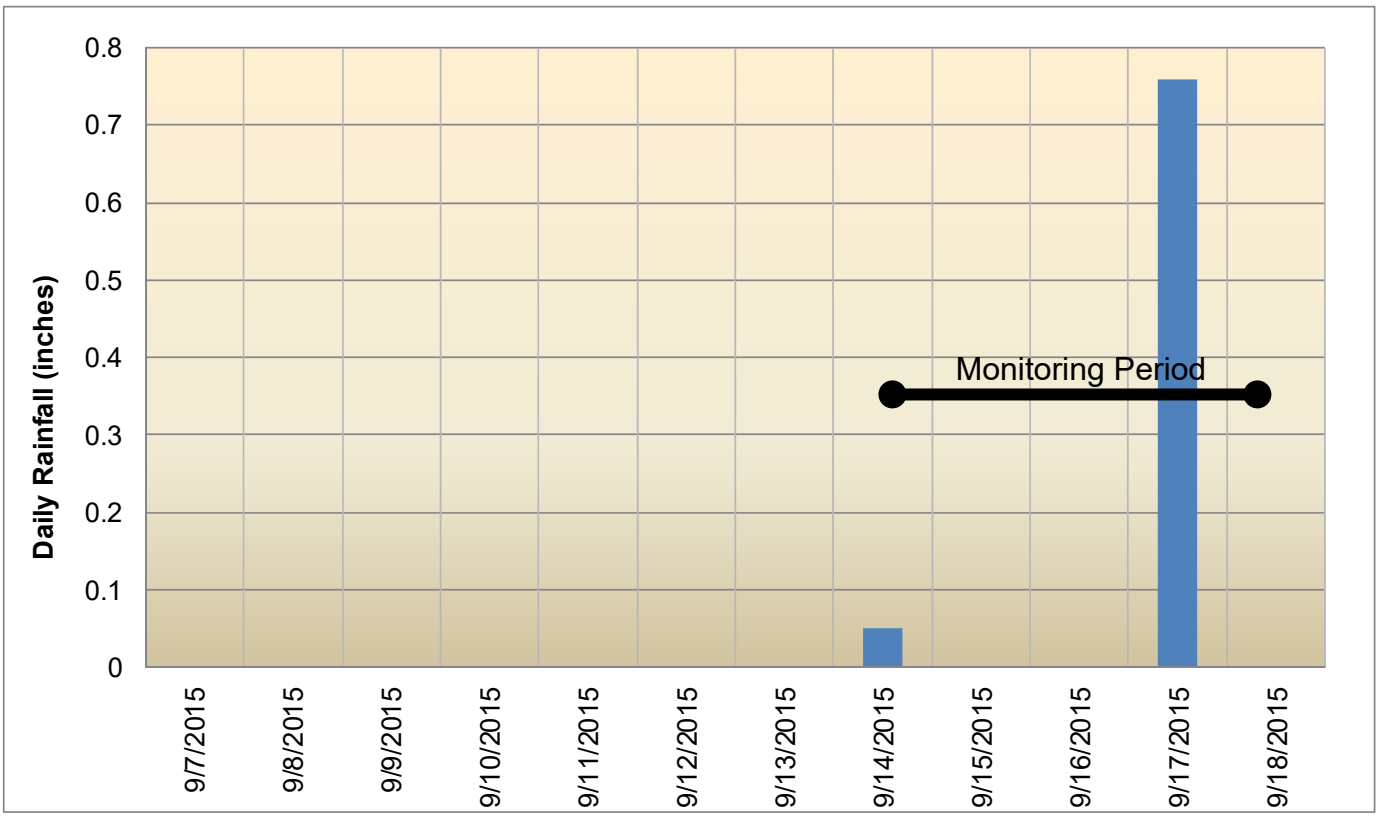
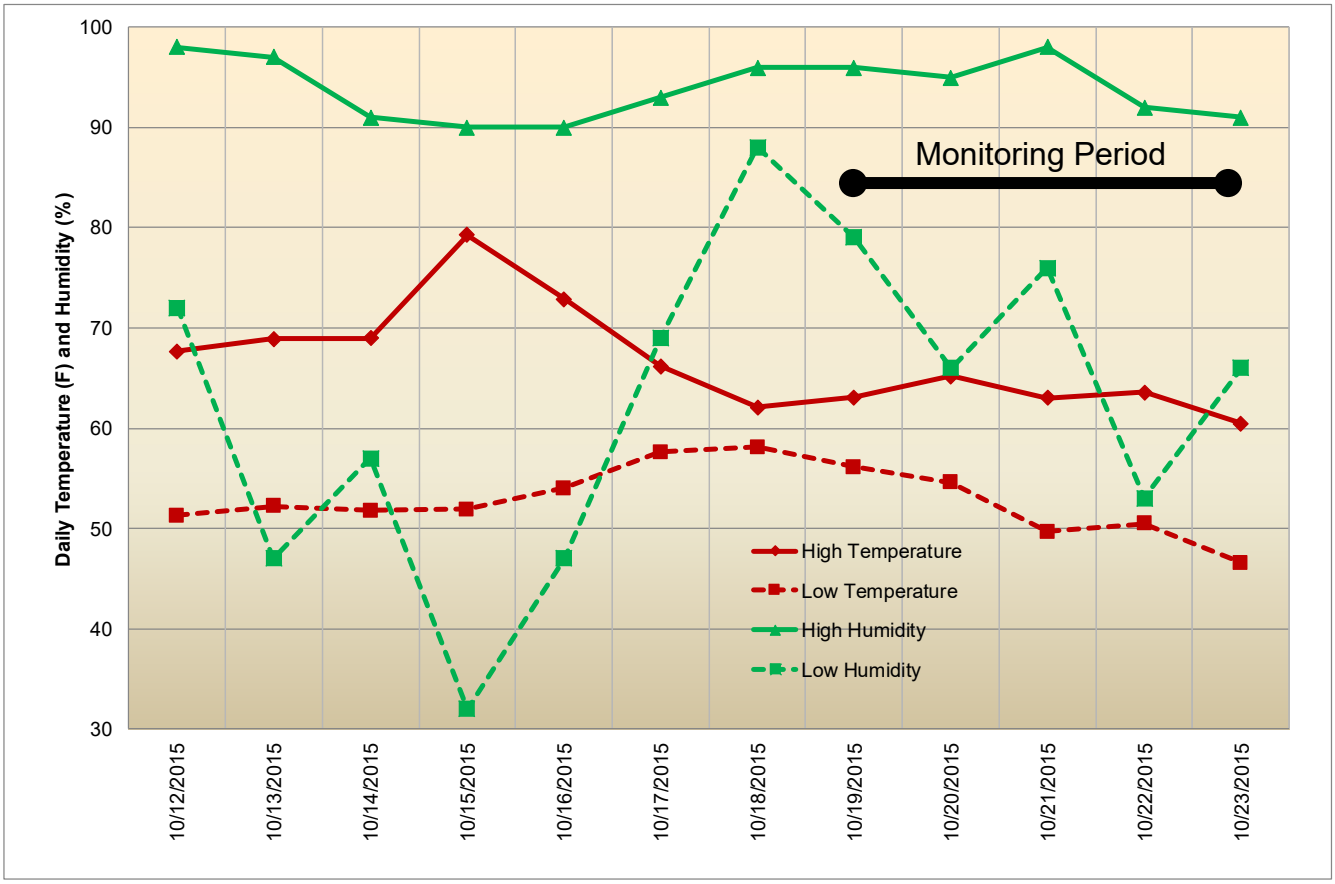


Figure 4b
Daily Temperature, Humidity, and Rainfall
September 2015 Dust Monitoring Event
Burgard Industrial Park - SSI

BRIDGEWATER GROUP, INC.



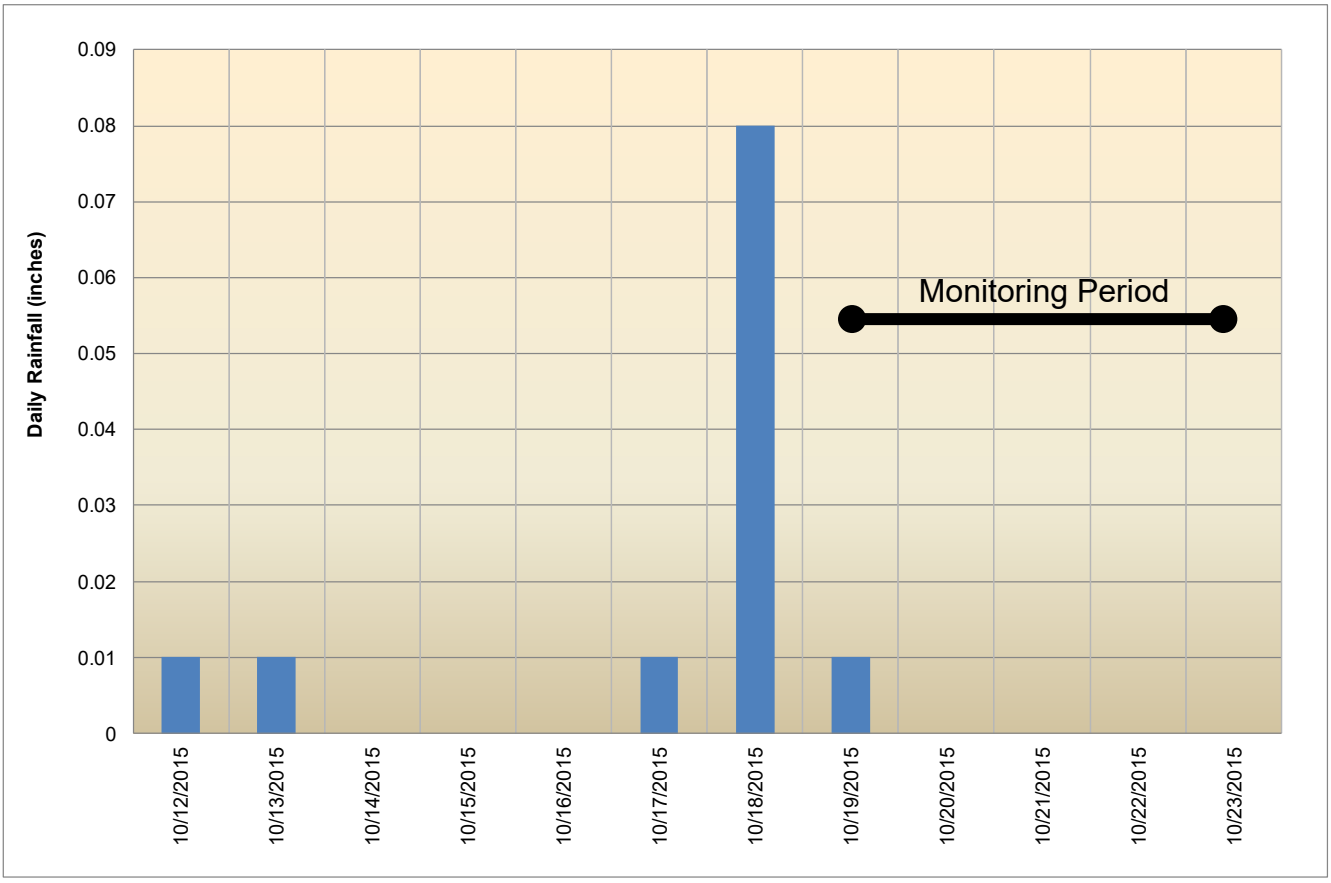
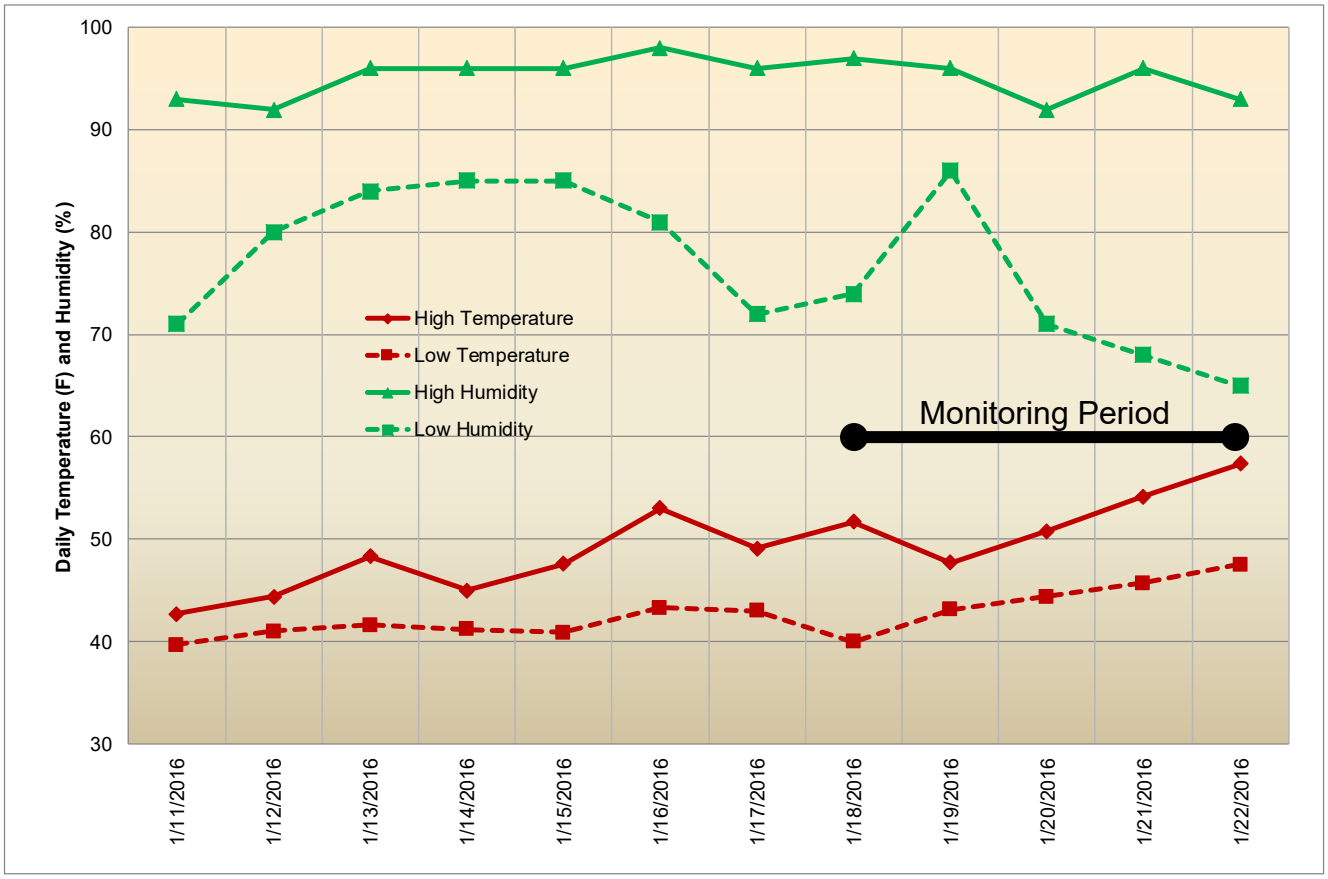


Figure 4c
Daily Temperature, Humidity, and Rainfall
October 2015 Dust Monitoring Event
Burgard Industrial Park - SSI

BRIDGEWATER GROUP, INC.



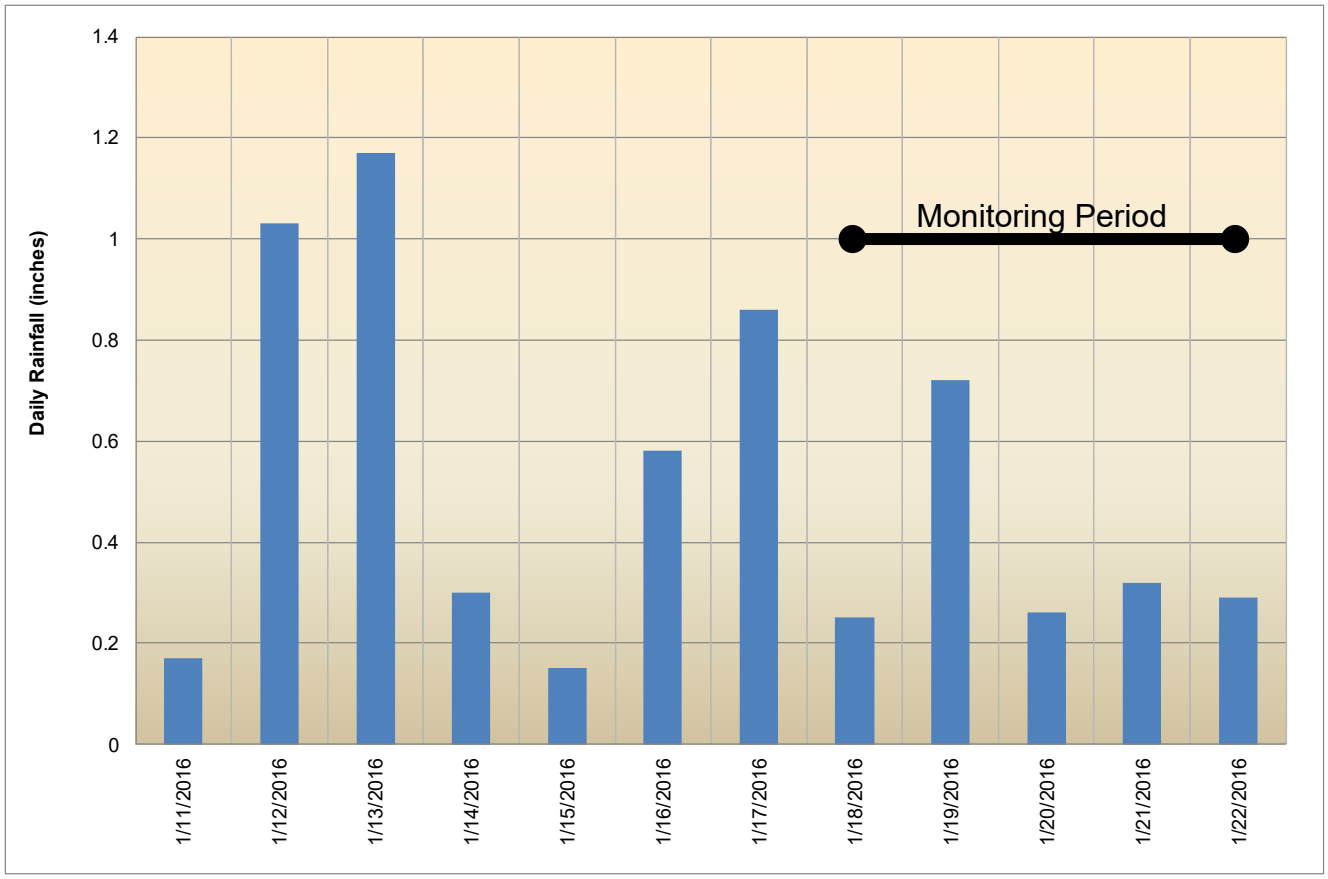
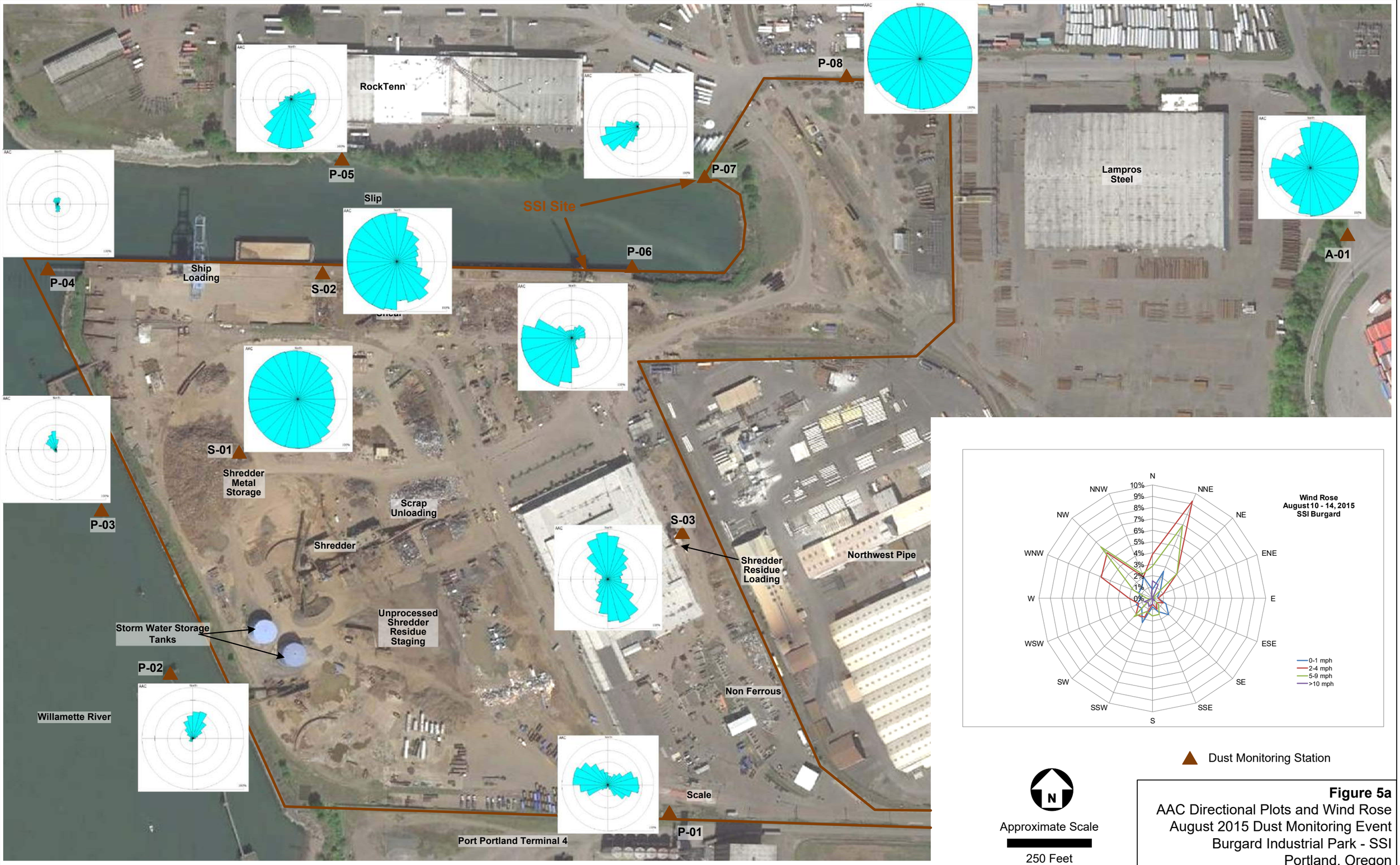


Figure 4d
Daily Temperature, Humidity, and Rainfall
January 2016 Dust Monitoring Event
Burgard Industrial Park - SSI

BRIDGEWATER GROUP, INC.



Base photograph April 2015

Figure 5a
AAC Directional Plots and Wind Rose
August 2015 Dust Monitoring Event
Burgard Industrial Park - SSI
Portland, Oregon

BRIDGEWATER GROUP, INC.

RockTenn

P-08

P-07

P-05

Slip

SSI Site

P-06

Lampros Steel

A-01

P-04

Ship Loading

S-02

Shear

S-01

Shredder Metal Storage

Scrap Unloading

P-03

Shredder

S-03

Shredder Residue Loading

Northwest Pipe

Unprocessed Shredder Residue Staging

Storm Water Storage Tanks

P-02

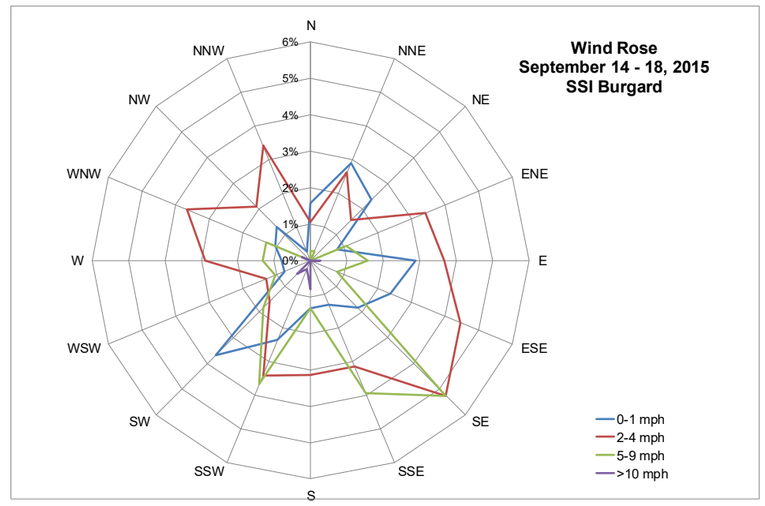
Non Ferrous

Willamette River

Scale

P-01

Port Portland Terminal 4



▲ Dust Monitoring Station

N

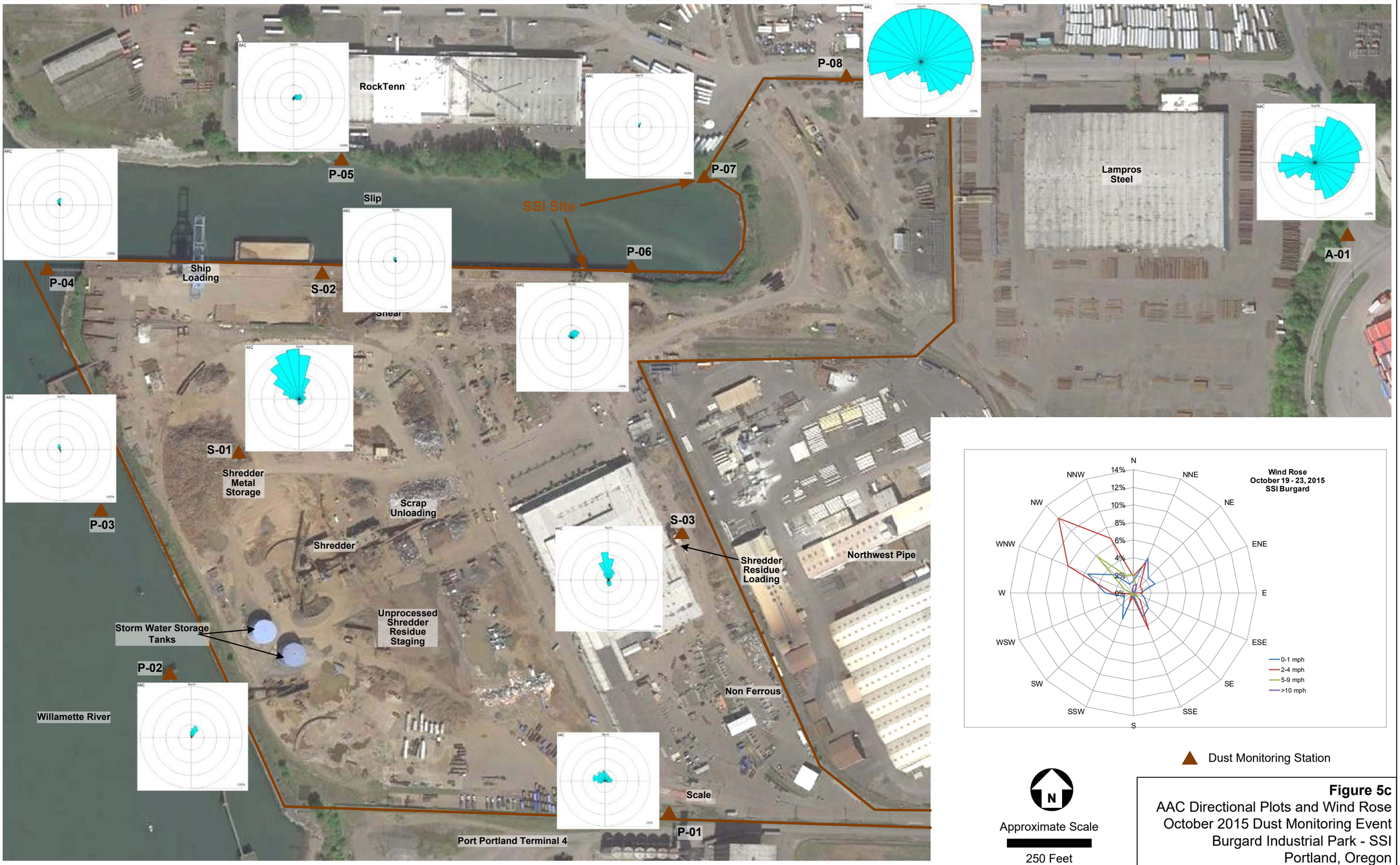
Approximate Scale

250 Feet

Base photograph April 2015

Figure 5b
AAC Directional Plots and Wind Rose
September 2015 Dust Monitoring Event
Burgard Industrial Park - SSI
Portland, Oregon

BRIDGEWATER GROUP, INC.



Base photograph April 2015

Figure 5c
AAC Directional Plots and Wind Rose
October 2015 Dust Monitoring Event
Burgard Industrial Park - SSI
Portland, Oregon

BRIDGEWATER GROUP, INC.

RockTenn

P-05

Slip

SSI Site

P-08

P-07

Lampros Steel

A-01

P-06

P-04

Ship Loading

S-02

Shear

S-01

Shredder Metal Storage

Scrap Unloading

P-03

Shredder

S-03

Shredder Residue Loading

Northwest Pipe

Storm Water Storage Tanks

Unprocessed Shredder Residue Staging

P-02

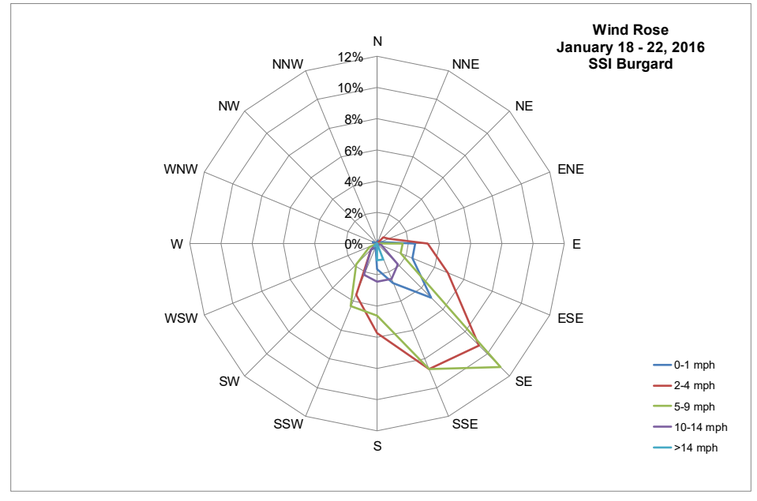
Non Ferrous

Willamette River

Scale

P-01

Port Portland Terminal 4



Dust Monitoring Station

Approximate Scale

250 Feet

Base photograph April 2015

Figure 5d
AAC Directional Plots and Wind Rose
January 2016 Dust Monitoring Event
Burgard Industrial Park - SSI
Portland, Oregon

BRIDGEWATER GROUP, INC.

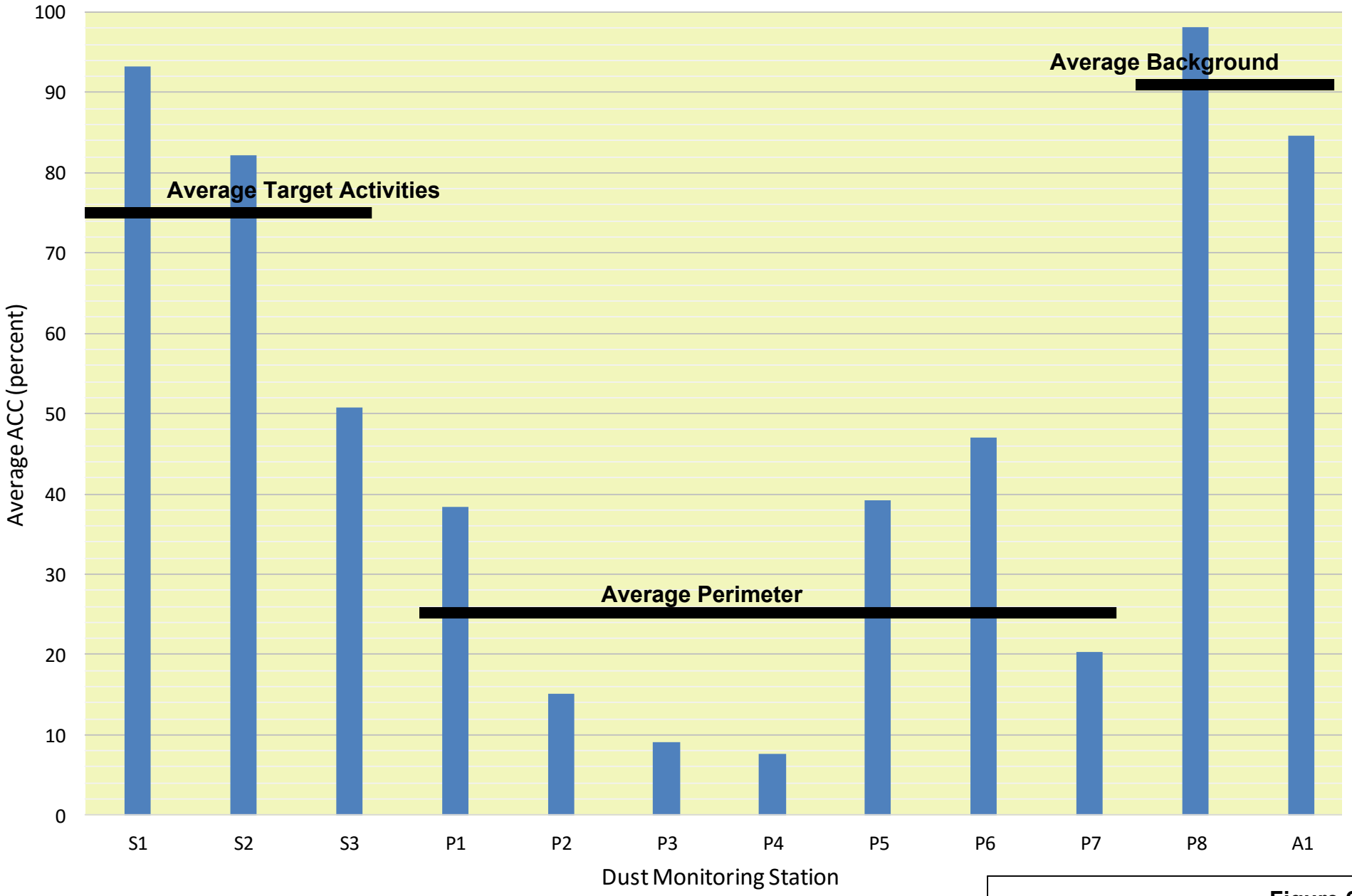


Figure 6a
AAC Values Comparison
August 2015 Dust Monitoring Event
Burgard Industrial Park – SSI
Portland, OR

BRIDGEWATER GROUP, INC.

See Table 2 for data

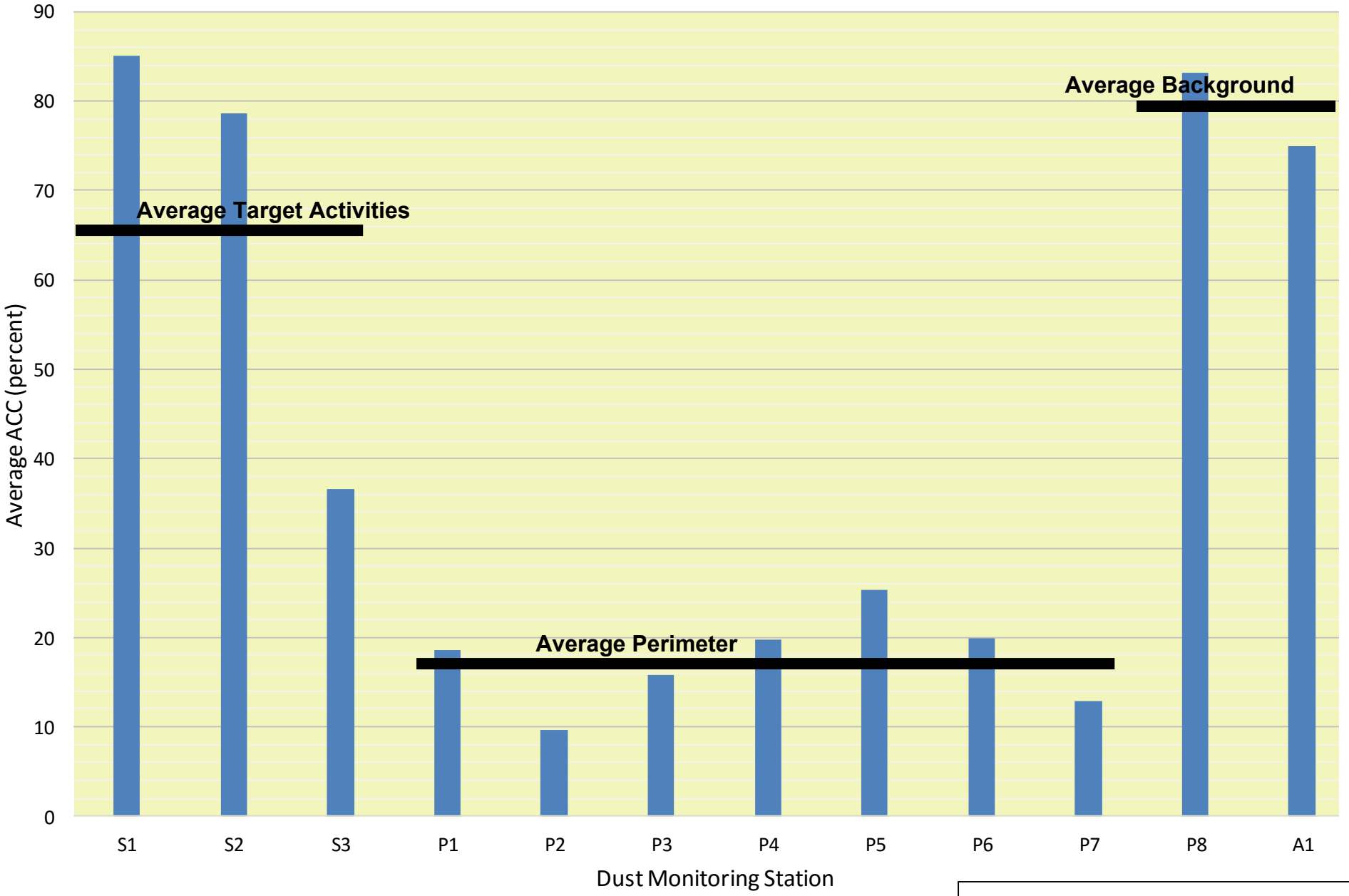


Figure 6b
AAC Values Comparison
September 2015 Dust Monitoring Event
Burgard Industrial Park – SSI
Portland, OR

BRIDGEWATER GROUP, INC.

See Table 2 for data

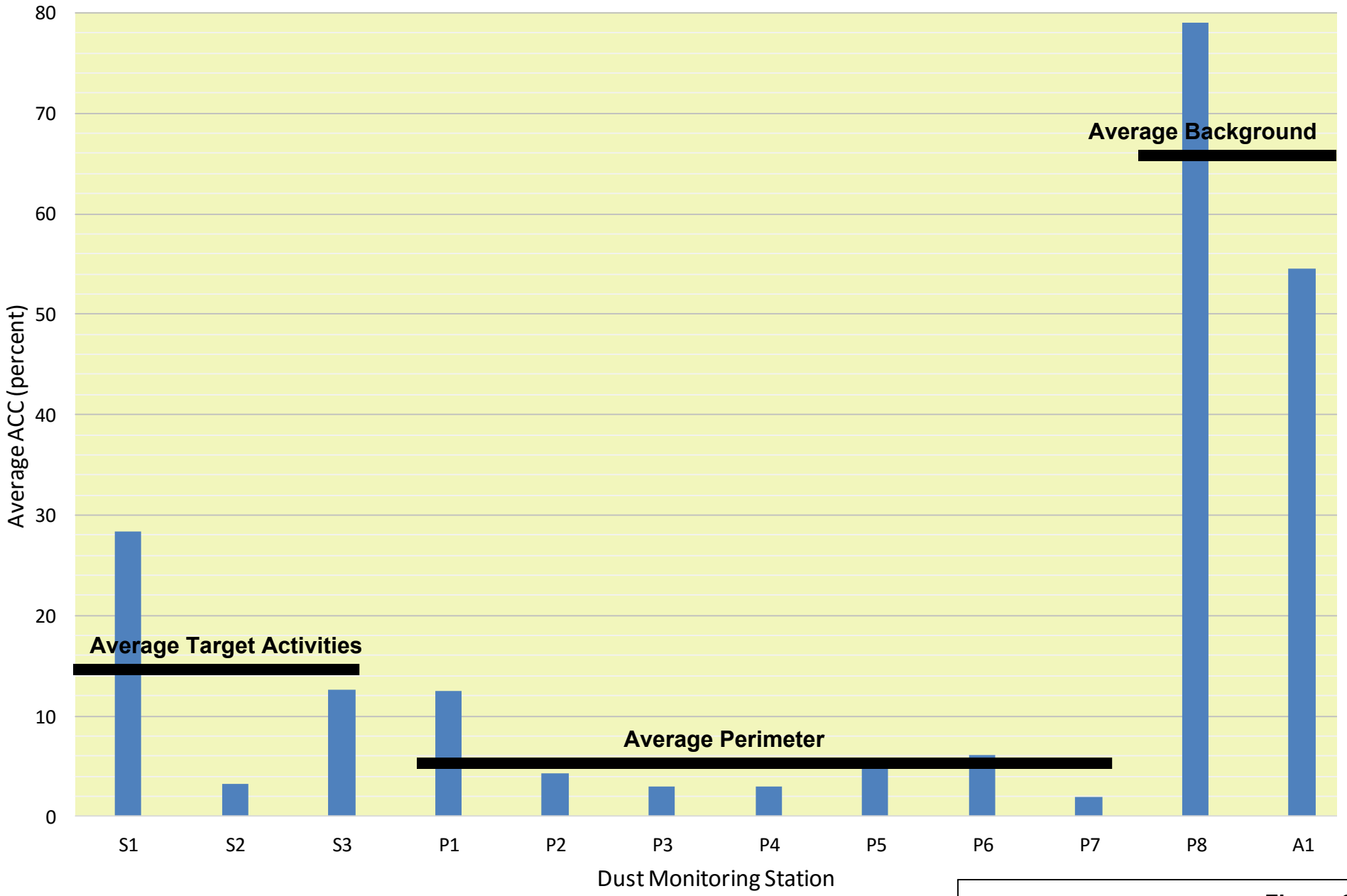


Figure 6c
AAC Values Comparison
October 2015 Dust Monitoring Event
Burgard Industrial Park – SSI
Portland, OR

BRIDGEWATER GROUP, INC.

See Table 2 for data

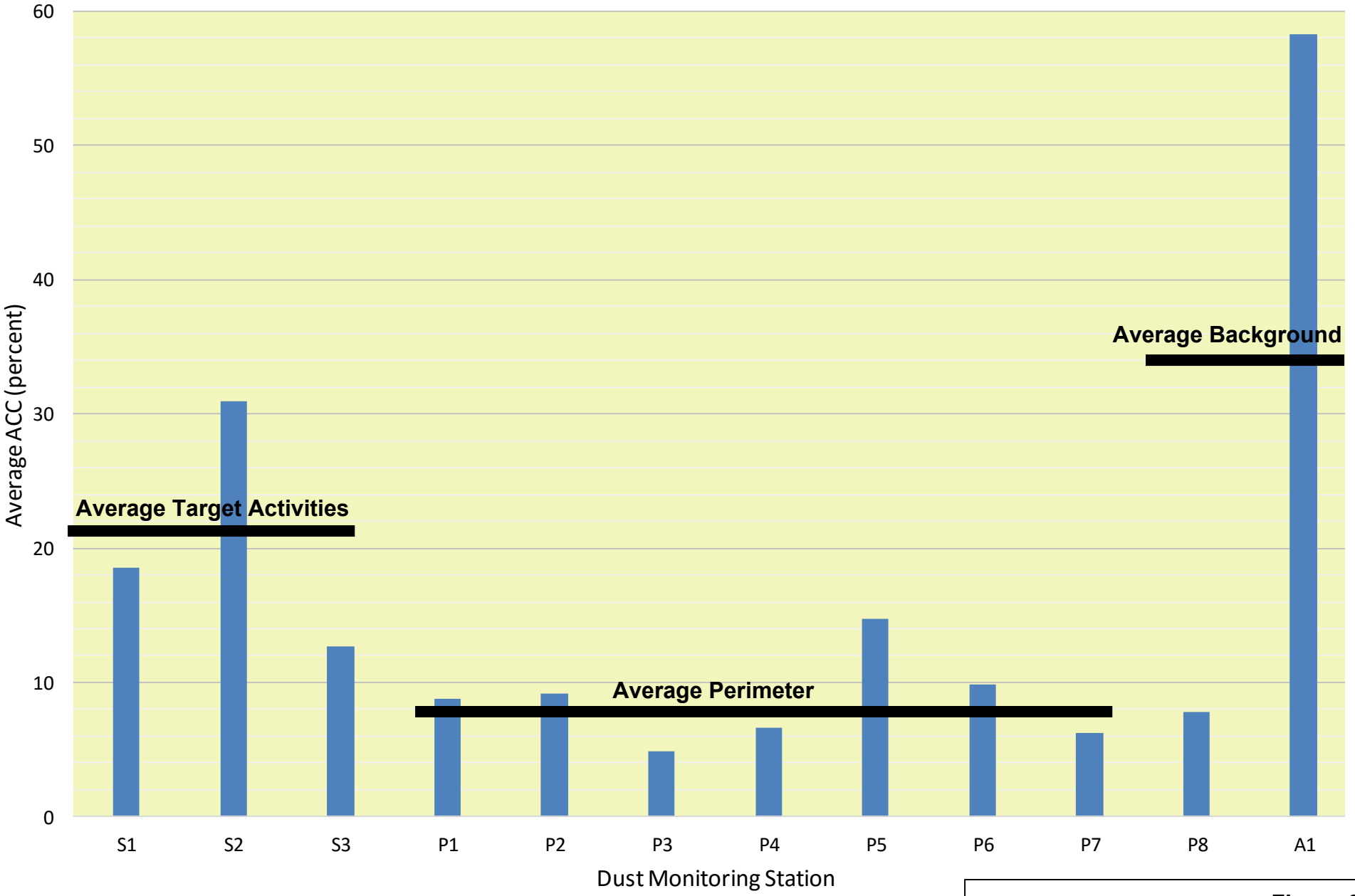
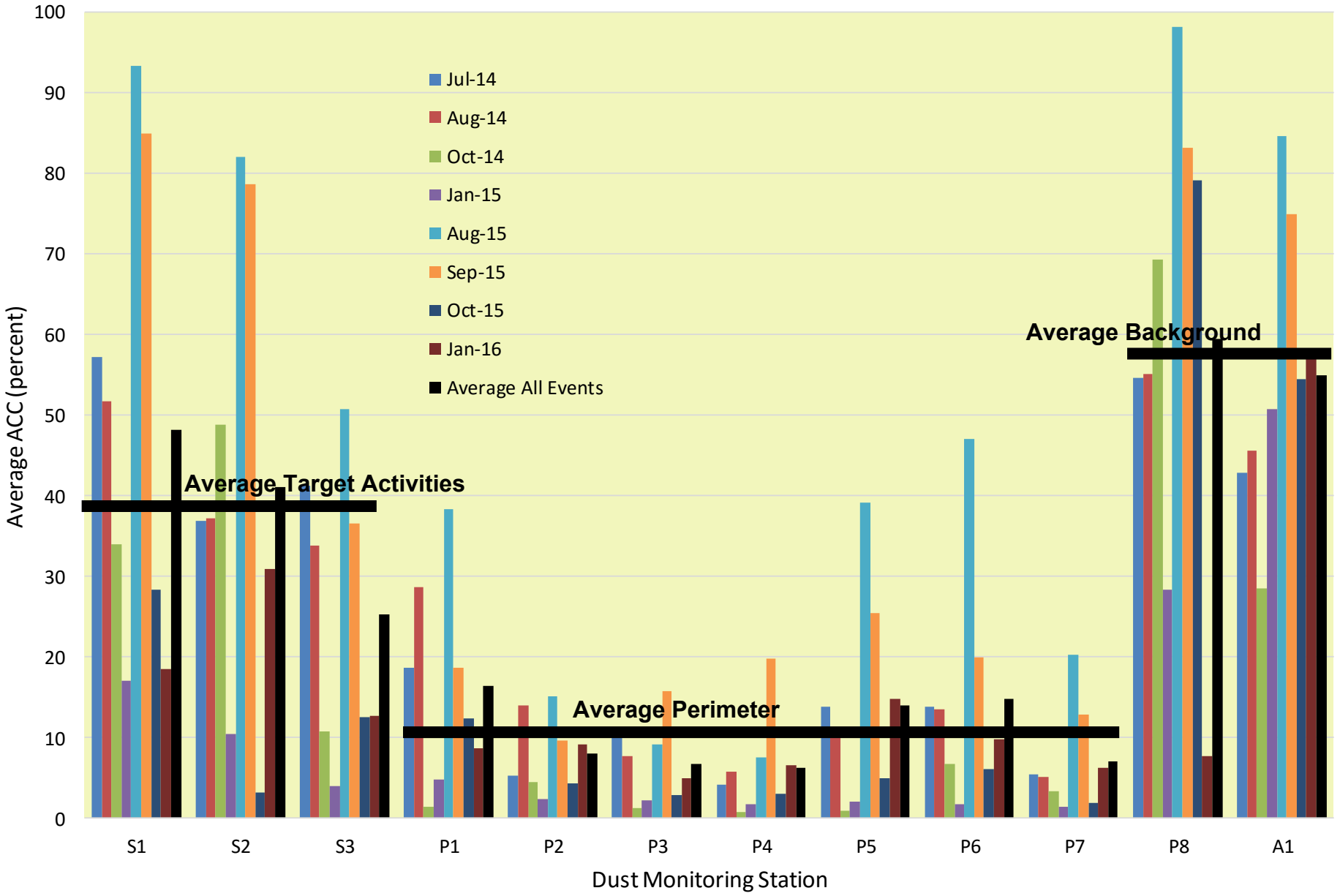


Figure 6d
AAC Values Comparison
January 2016 Dust Monitoring Event
Burgard Industrial Park – SSI
Portland, OR

See Table 2 for data

BRIDGEWATER GROUP, INC.



Note – July 2014 and August 2014 AAC values scaled down by 4/7 to reflect longer monitoring period during these events (7 days) relative to 4 days in other events.

See Table 2 for data

Figure 7
AAC Values Comparison
All Dust Monitoring Events
Burgard Industrial Park – SSI
Portland, OR

BRIDGEWATER GROUP, INC.

Appendix A – DustScan Manufacturer Literature

DustScan

Dust Monitoring and Dust Consultancy Services

Guidance Note No. 1: Nuisance Dust Monitoring

This guidance note is based on our experience in dust monitoring and consultancy. It is part of a series aiming to provide a basic guide to dust and dust monitoring.

DustScan Guidance Note No. 1 discusses 'nuisance dust': what it is, its significance and why, when, where and how it can be measured.

What is 'nuisance dust'?

'Dust' is a generic term used to describe particulate matter 1 – 75 µm (micron) in diameter, produced through the crushing and abrasion of materials. It is often considered in two categories:

a) The size fraction up to 10 µm (PM_{10}), which is used as an indicator of local air quality and forms part of National Air Quality Standards. PM_{10} are measured to agreed standards, and usually expressed as a concentration over time: mg/m^3/day.

b) Nuisance dust. There are no standard definitions, or universal monitoring methods, for nuisance dust. It is now becoming accepted that dust above10 µm may be considered nuisance dust. Nuisance dust can be long-term (or chronic) – such as the long-term soiling of paintwork – or short-term (acute) – such as a short-lived dust cloud. Dust nuisance is the *effect* caused by dust.

The effect of dust is a matter of human perception thus is difficult to quantify. How it is perceived varies according to characteristics of the dust such as its colour, contrast and rate of accumulation; and local factors such as socio-economic conditions and employment.

Why does nuisance dust matter?

Dust may be an inevitable consequence of primary industry such as quarrying and mineral processing. Other processes, such as landfill, demolition and agriculture can also lead to dust generation. Some activities, such as quarrying and waste management, are controlled by specific legislation and guidance. Specific guidance has been produced for particular industries, such as Minerals Policy Statement (MPS) 2, Annex 1: Dust (ODPM, 2005) and Technical Guidance Document M17: Monitoring of particulate matter in ambient air around waste facilities (Environment Agency, 2004).

The size range and amount of dust particles generated by different activities vary according to the processes taking place. Weak materials such as coal or chalk can crumble easily and produce dust, but dust may also be generated due to high energy activities such as drilling and blasting, or through the crushing of strongly cohesive materials.

At waste facilities, the types and amounts of dust generated can be very varied thus difficult to predict. Particle behaviour will be highly variable, and there is no simple correlation between particle size and deposition rate.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Dust Monitoring and Dust Consultancy Services

Guidance Note No. 1: Nuisance Dust Monitoring

For a site operator, the potential for dust nuisance can be addressed in consents and permits – permissions may have conditions like *"…the operation will not lead to excessive dust nuisance…"* or *"…the operation will not cause pollution beyond the site boundary …"*. MPS 2, Annex 1 states: *"… Where these effects [dust from surface mineral workings] cannot be adequately controlled or mitigated, planning permission should be refused. …"* (ODPM, 2005) and Technical Guidance Document (Monitoring) M17 states that: *"…measures must be taken to minimise nuisance arising from the landfill due to dust…".* (Environment Agency, 2004). So to establish the effectiveness of control measures, monitoring is required.

Consequently how nuisance dust is monitored and assessed can be critical to the smooth running of an operation.

When should nuisance dust be monitored?

Ideally, baseline conditions should be established before an operation commences. This is recommended as the first stage of a Dust Assessment Study at mineral workings, and as part of an air quality monitoring programme before a new waste facility is established. Furthermore, the most appropriate methods to use for baseline testing are the simplest and least expensive.

Dust monitoring should continue during operations both to observe site emissions and ensure compliance with planning conditions. Liaison with local authorities and other regulatory bodies may require longer periods or continual monitoring. Frequency of monitoring should be sufficient to take weather conditions and seasonality into account; and observe changes in site practice through regular operations.

Most low-cost dust monitoring systems are of the periodic, interval-based type. Equipment is typically left out for periods of between a few days and a month. To keep costs down, equipment should be straightforward for site staff to use.

Where should nuisance dust be measured?

Whilst dust nuisance can be seen to be the impact of dust settlement at receptors, it is generally measured on or near site boundaries – i.e. on pathways, at or near sources of dust. Consequently the type and position of dust gauges is of paramount importance – equipment that is best suited to monitoring at receptors might not be appropriate on pathways, and vice versa.

How can nuisance dust be measured?

Nuisance dust is monitored either directionally (dust flux) or non-directionally (dust settlement). Directional gauges sample dust that is suspended in an airstream, such as on the pathway from source to receptor. Non-directional gauges sample dust falling out of an airstream, such as at a receptor.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Guidance Note No. 1:
Nuisance Dust Monitoring

Directional and non-directional nuisance dust samples are quantified in one of two very different ways; either the mass deposition rate or the soiling effect. In the first case, the weight of material collected over a period of time is determined; in the second, changes in the optical properties of a surface (such as loss of gloss, or obscuration) are measured.

There are 'custom and practice' guidelines for dust flux and dust settlement, and for dust mass and dust soiling, although the units used by different methods are generally not interchangeable. Consequently care should be taken to apply the appropriate method for the monitoring requirement. Please refer to Guidance Note No. 3 "Directional Dust Data Assessment" for information on DustScan directional monitoring methodology.

What types of equipment are available for nuisance dust monitoring?

DustScan Ltd supply directional and non-directional dust monitoring equipment to measure both dust mass and dust soiling. Please contact us for more information or visit www.dustscan.co.uk.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Guidance Note No. 2:
Using the DustScan directional dust gauge

This guidance note sets out the methodology behind DustScan directional dust monitoring. It describes the DustScan directional dust monitoring methodology: how, and why, it works; what the results are and what they mean; and where and how to use the gauges.

The directional dust gauge is the principal component of DustScan dust monitoring equipment. DustScan is a ‘passive’ method that does not need a power supply. It samples all sizes of ambient dust and is ideal for nuisance dust monitoring. The directional gauge can be used in any location where dust movement occurs and can help to detect dust pathways and potential nuisance. Directional gauges are used at quarries, landfills, opencast coal sites, demolition and construction sites, remediation works, materials stockpiles and recycling plants.

DustScan gauges are discreet and unobtrusive, and are easy to install and operate. They can be installed and used by most site staff after basic training.

The photos above show the wide range of sites where our gauges can be used

DustScan directional gauges use a special adhesive dust collection slide (‘sticky pad’) which is mounted on a replaceable cylindrical monitoring head. The monitoring head fits onto a 2-metre stand. An alignment peg is provided as the gauge must be aligned to north when it is first installed. An alignment tool can be supplied to facilitate orientation. Correct alignment ensures repeatable dust sampling each time the dust monitoring heads are changed. The monitoring head collects fugitive dust coming from 360° around the gauge.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Guidance Note No. 2:
Using the DustScan directional dust gauge

Once the protective layer is removed the dust monitoring head samples continuously whilst exposed. It is normally left to sample for 1 to 2 weeks. At the end of the sampling period, the head is removed and placed in the protective carrying flask and a replacement head fitted. Used sampling heads are sent to the DustScan offices for computer analysis in the transport boxes provided.

For guidance on the DustDisc dust settlement gauge, the DS100-F combined Frisbee deposition and directional dust gauge and the DS500 combined PM_{10} and directional dust gauge, please refer to other Briefing Notes in this series.

What is the DustScan directional dust gauge?

The DustScan directional dust gauge measures the nuisance effect caused by dust in flux. Dust in flux is particulate matter that is suspended in an airstream on a pathway between its source and its potential receptors. In contrast, settlement gauges such as the DustDisc and the Frisbee deposition gauge measure dust deposition. Deposited dust has settled out of an airstream – wherever it is measured. Consequently dust in flux and deposited dust and are not necessarily the 'same' dust.

How does the DustScan directional gauge work?

DustScan is a 'passive' monitoring method, so it does not require a power supply. With the directional gauge, dust in flux impacts onto the exposed adhesive surface of the sampling cylinder for subsequent computer analysis by us. The sampling cylinder fits onto a monitoring head which is set to north when the gauge is installed, for repeatable directional sampling.

We recommend sampling intervals of 1 - 2 weeks. At the end of each sampling interval the cylinder and sample are sent back to us in the protective container provided. We seal the sample, scan it and measure the directional dusting on it using DustScan software.

Why use the DustScan directional dust gauge?

The directional gauge is ideal for monitoring both dust propagation and dust pathways. Potentially dusty activities on, or off, a site may lead to dust propagation. Dust pathways are also significant on site boundaries, as this is where dust leaving a site may lead to possible nuisance at an off-site receptor. Well-positioned DustScan gauges can help identify the location of dust sources and pathways on and off a site.

The DustScan directional dust gauge can be used to assess the direction, magnitude, and significance of dust pathways and the likelihood of complaint due to dust.

The directional information from DustScan monitoring can be used to identify and quantify sources of dust from various site activities. This can be used to evaluate the effectiveness of mitigation measures and assist site environmental management.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

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Dust Monitoring and Dust Consultancy Services

Guidance Note No. 2:
Using the DustScan directional dust gauge

What do the DustScan results mean?

Directional dust levels are reported as Absolute Area Coverage (AAC%) - the dust coverage irrespective of colour; and Effective Area Coverage (EAC%) - the soiling caused by that dust.

AAC% measures dusting irrespective of colour so all dust, dark or light, contributes to AAC%. Therefore it is an excellent method to identify and discriminate between dust sources – for example there may be more than one in a locality, such as an on-site process and off-site activities. Different AAC% levels from different directions can indicate the scale of these activities.

EAC% is used to measure the potential nuisance caused by dust soiling. As it relates to the darkness of dust, dark-coloured dusts such as coal will have a proportionately greater EAC% for any mass than light-coloured dusts, such as chalk. EAC% measures the likelihood of nuisance caused by dust soiling.

Nuisance criteria have been developed for use with these measures – please refer to Guidance Note No. 3 ‘Directional Dust Data Assessment’.

Where should DustScan directional dust gauges be used?

DustScan directional gauges are typically installed on site boundaries and should be well away from obstructions such as buildings, tall trees or overhanging vegetation. As with all flux-monitoring systems, there should be a clear air flow to the monitoring head.

The directional gauge must be securely fixed in a vertical position and is normally installed so that the protective rain guard is 2 metres from ground level. A rigid stand is supplied to enable fixing at the correct height – please refer to our installation instructions for more information.

How should DustScan directional dust gauges be used?

DustScan gauges can be used in a range of monitoring applications:

- During baseline studies to establish dust levels before a process, such as a quarry extension, takes place
- As part of an environmental monitoring strategy during the lifetime of a project
- In one-off monitoring programmes such as remediation works, demolition, blasting, etc

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
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Guidance Note No. 2:
Using the DustScan directional dust gauge

Boundary monitoring typically requires 4 gauges. Larger sites may need one or two more, and some sites need less. The number required depends on the level of information required and the size and complexity of the site. Please contact us to discuss your requirements.

- One DustScan gauge could be used to monitor dust near a single ‘point source’ such as a stockpile
- Two gauges could be used to monitor dust transit across a site – for example upwind and downwind
- Three or more gauges are required for boundary monitoring

DustScan can be used in conjunction with other monitoring methods. We have experience in other methods and can advise their suitability as required.

Griffin House, Market Street,
Charlbury, Oxford, OX7 3PJ, UK
Tel: (44) 1608 810110
Fax: (44) 1608 810227
Email: info@DustScan.co.uk
www.DustScan.co.uk

Appendix B – Dust Monitoring Station Photographs

Monitoring Point S1

Monitoring Point S2

Monitoring Point S3

Monitoring Point P1

Monitoring Point P2

Monitoring Point P3

Monitoring Point P4

Monitoring Point P5

Monitoring Point P6

Monitoring Point P7

Monitoring Point P8

Monitoring Point A1

Appendix C – Analytical Laboratory Reports

DustScan Ltd
Dust Consultancy and Dust Monitoring Services

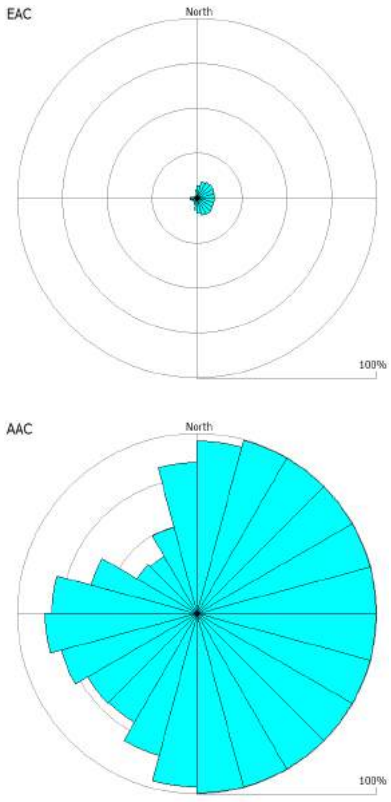
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	A-01 (No point description given)		
Date Out:	10-Aug-15	**Date In:**	14-Aug-15
Interval*:	4 days	**Our Ref:**	60472 / A-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 6.5
Absolute Area Coverage (AAC%) / interval = 84.5
Effective Area Coverage (EAC%) / day = 1.6
Absolute Area Coverage (AAC%) / day = 21.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	7.0	96.0	1.7	24.0	Medium
15°-30°	9.4	100.0	2.3	25.0	High
30°-45°	10.2	100.0	2.6	25.0	Very High
45°-60°	10.5	100.0	2.6	25.0	Very High
60°-75°	10.2	100.0	2.6	25.0	Very High
75°-90°	9.8	100.0	2.5	25.0	Very High
90°-105°	9.8	100.0	2.4	25.0	Very High
105°-120°	9.9	100.0	2.5	25.0	Very High
120°-135°	10.1	100.0	2.5	25.0	Very High
135°-150°	10.6	100.0	2.7	25.0	Very High
150°-165°	10.1	100.0	2.5	25.0	High
165°-180°	8.7	99.8	2.2	24.9	High
180°-195°	6.4	96.4	1.6	24.1	Medium
195°-210°	4.0	81.5	1.0	20.4	Medium
210°-225°	3.0	69.8	0.7	17.4	Medium
225°-240°	3.0	70.5	0.7	17.6	Medium
240°-255°	3.5	78.5	0.9	19.6	Medium
255°-270°	4.2	84.9	1.1	21.2	Medium
270°-285°	3.8	80.8	0.9	20.2	Medium
285°-300°	2.4	61.1	0.6	15.3	Low
300°-315°	1.3	38.8	0.3	9.7	Very Low
315°-330°	1.3	37.1	0.3	9.3	Very Low
330°-345°	1.8	49.9	0.4	12.5	Very Low
345°-360°	5.0	84.2	1.2	21.0	Medium



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

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DustScan Ltd
Dust Consultancy and Dust Monitoring Services

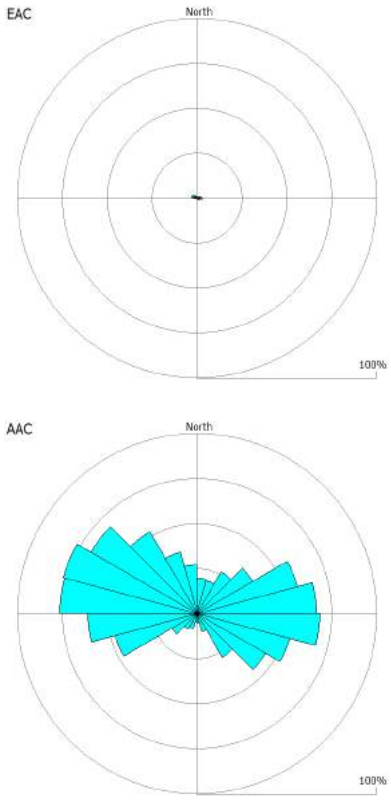
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-01 (No point description given)		
Date Out:	10-Aug-15	**Date In:**	14-Aug-15
Interval*:	4 days	**Our Ref:**	60473 / P-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.5
Absolute Area Coverage (AAC%) / interval = 38.4
Effective Area Coverage (EAC%) / day = 0.4
Absolute Area Coverage (AAC%) / day = 9.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.7	19.9	0.2	5.0	Very Low
15°-30°	0.6	19.0	0.1	4.7	Very Low
30°-45°	0.9	27.0	0.2	6.8	Very Low
45°-60°	1.2	36.1	0.3	9.0	Very Low
60°-75°	2.3	57.9	0.6	14.5	Low
75°-90°	2.8	66.5	0.7	16.6	Medium
90°-105°	3.0	68.3	0.7	17.1	Medium
105°-120°	2.3	53.4	0.6	13.3	Low
120°-135°	1.7	44.1	0.4	11.0	Very Low
135°-150°	1.0	28.0	0.2	7.0	Very Low
150°-165°	0.3	10.7	<0.1	2.7	Very Low
165°-180°	0.1	5.1	<0.1	1.3	Very Low
180°-195°	0.1	4.9	<0.1	1.2	Very Low
195°-210°	0.3	8.9	<0.1	2.2	Very Low
210°-225°	0.3	10.2	<0.1	2.5	Very Low
225°-240°	0.4	16.4	0.1	4.1	Very Low
240°-255°	1.7	47.4	0.4	11.9	Very Low
255°-270°	2.4	61.0	0.6	15.2	Low
270°-285°	3.4	76.5	0.9	19.1	Medium
285°-300°	3.5	77.3	0.9	19.3	Medium
300°-315°	2.9	68.4	0.7	17.1	Medium
315°-330°	2.1	52.6	0.5	13.1	Low
330°-345°	1.3	35.4	0.3	8.9	Very Low
345°-360°	1.0	27.3	0.3	6.8	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

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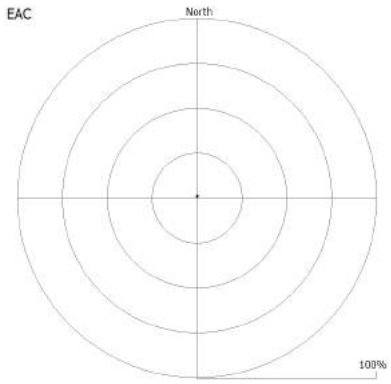
DS100 DIRECTIONAL DUST FLUX REPORT

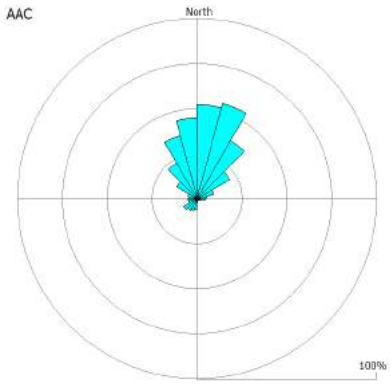
Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-02 (No point description given)		
Date Out:	10-Aug-15	**Date In:**	14-Aug-15
Interval*:	4 days	**Our Ref:**	60474 / P-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.4
Absolute Area Coverage (AAC%) / interval = 15.1
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 3.8

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.8	52.2	0.4	13.1	Very Low
15°-30°	2.0	54.9	0.5	13.7	Low
30°-45°	1.2	37.4	0.3	9.4	Very Low
45°-60°	0.6	21.3	0.2	5.3	Very Low
60°-75°	0.2	9.9	<0.1	2.5	Very Low
75°-90°	0.1	5.7	<0.1	1.4	Very Low
90°-105°	<0.1	4.4	<0.1	1.1	Very Low
105°-120°	<0.1	2.7	<0.1	0.7	Very Low
120°-135°	<0.1	2.1	<0.1	0.5	Very Low
135°-150°	<0.1	1.4	<0.1	0.3	Very Low
150°-165°	<0.1	1.7	<0.1	0.4	Very Low
165°-180°	<0.1	2.5	<0.1	0.6	Very Low
180°-195°	0.1	6.3	<0.1	1.6	Very Low
195°-210°	0.1	6.9	<0.1	1.7	Very Low
210°-225°	0.2	7.7	<0.1	1.9	Very Low
225°-240°	0.2	8.7	<0.1	2.2	Very Low
240°-255°	<0.1	5.2	<0.1	1.3	Very Low
255°-270°	0.1	5.1	<0.1	1.3	Very Low
270°-285°	<0.1	4.5	<0.1	1.1	Very Low
285°-300°	0.1	5.7	<0.1	1.4	Very Low
300°-315°	0.3	13.2	<0.1	3.3	Very Low
315°-330°	0.6	23.0	0.2	5.8	Very Low
330°-345°	1.1	36.4	0.3	9.1	Very Low
345°-360°	1.4	44.7	0.4	11.2	Very Low





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

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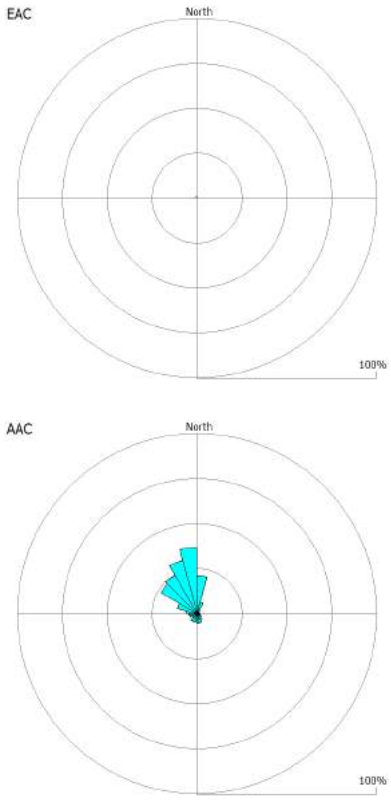
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-03 (No point description given)		
Date Out:	10-Aug-15	**Date In:**	14-Aug-15
Interval*:	4 days	**Our Ref:**	60475 / P-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.3
Absolute Area Coverage (AAC%) / interval = 9.1
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 2.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.7	21.2	0.2	5.3	Very Low
15°-30°	0.2	7.0	<0.1	1.7	Very Low
30°-45°	<0.1	2.6	<0.1	0.6	Very Low
45°-60°	<0.1	1.7	<0.1	0.4	Very Low
60°-75°	<0.1	0.9	<0.1	0.2	Very Low
75°-90°	<0.1	1.5	<0.1	0.4	Very Low
90°-105°	<0.1	1.6	<0.1	0.4	Very Low
105°-120°	<0.1	1.8	<0.1	0.5	Very Low
120°-135°	<0.1	3.2	<0.1	0.8	Very Low
135°-150°	0.1	4.2	<0.1	1.0	Very Low
150°-165°	0.2	5.7	<0.1	1.4	Very Low
165°-180°	0.2	5.4	<0.1	1.4	Very Low
180°-195°	0.1	4.4	<0.1	1.1	Very Low
195°-210°	0.2	5.2	<0.1	1.3	Very Low
210°-225°	0.2	5.1	<0.1	1.3	Very Low
225°-240°	<0.1	3.3	<0.1	0.8	Very Low
240°-255°	0.1	4.4	<0.1	1.1	Very Low
255°-270°	0.1	5.0	<0.1	1.2	Very Low
270°-285°	0.2	6.1	<0.1	1.5	Very Low
285°-300°	0.4	11.6	<0.1	2.9	Very Low
300°-315°	0.8	23.3	0.2	5.8	Very Low
315°-330°	0.8	25.0	0.2	6.2	Very Low
330°-345°	1.0	31.1	0.3	7.8	Very Low
345°-360°	1.2	36.9	0.3	9.2	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

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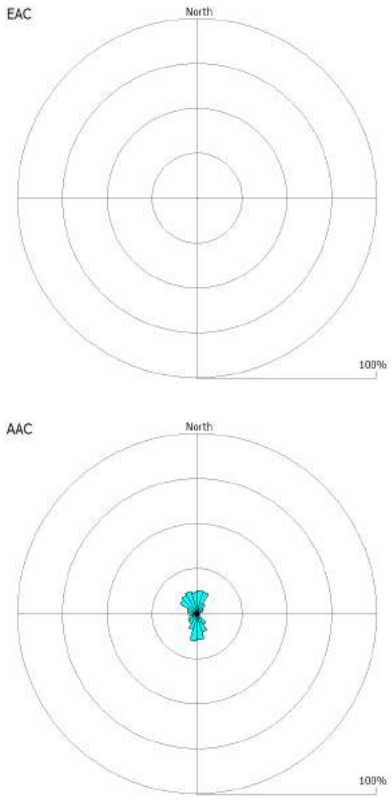
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-04 (No point description given)		
Date Out:	10-Aug-15	**Date In:**	14-Aug-15
Interval*:	4 days	**Our Ref:**	60476 / P-04 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.2
Absolute Area Coverage (AAC%) / interval = 7.6
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.4	13.0	<0.1	3.2	Very Low
15°-30°	0.3	12.8	<0.1	3.2	Very Low
30°-45°	0.1	6.4	<0.1	1.6	Very Low
45°-60°	0.1	4.5	<0.1	1.1	Very Low
60°-75°	<0.1	3.5	<0.1	0.9	Very Low
75°-90°	<0.1	1.7	<0.1	0.4	Very Low
90°-105°	<0.1	0.9	<0.1	0.2	Very Low
105°-120°	<0.1	1.6	<0.1	0.4	Very Low
120°-135°	<0.1	2.4	<0.1	0.6	Very Low
135°-150°	0.1	6.8	<0.1	1.7	Very Low
150°-165°	0.3	11.0	<0.1	2.8	Very Low
165°-180°	0.4	14.4	<0.1	3.6	Very Low
180°-195°	0.4	15.3	<0.1	3.8	Very Low
195°-210°	0.2	9.4	<0.1	2.4	Very Low
210°-225°	0.1	6.7	<0.1	1.7	Very Low
225°-240°	0.1	5.8	<0.1	1.5	Very Low
240°-255°	<0.1	4.6	<0.1	1.2	Very Low
255°-270°	<0.1	2.7	<0.1	0.7	Very Low
270°-285°	0.1	5.1	<0.1	1.3	Very Low
285°-300°	0.1	5.8	<0.1	1.4	Very Low
300°-315°	0.3	10.8	<0.1	2.7	Very Low
315°-330°	0.3	11.8	<0.1	3.0	Very Low
330°-345°	0.3	13.2	<0.1	3.3	Very Low
345°-360°	0.3	12.1	<0.1	3.0	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

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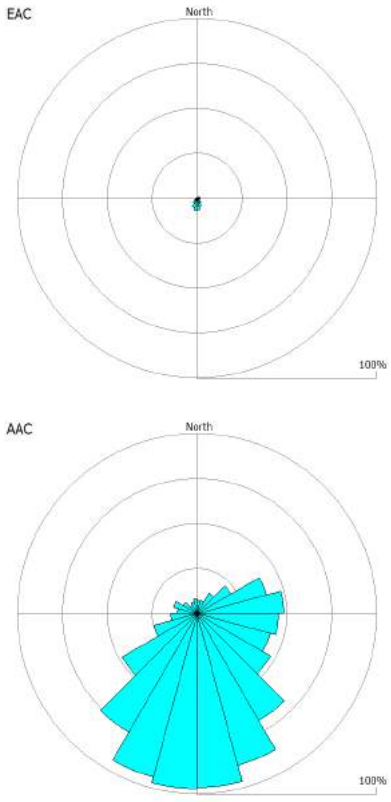
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-05 (No point description given)		
Date Out:	10-Aug-15	**Date In:**	14-Aug-15
Interval*:	4 days	**Our Ref:**	60477 / P-05 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.9
Absolute Area Coverage (AAC%) / interval = 39.1
Effective Area Coverage (EAC%) / day = 0.5
Absolute Area Coverage (AAC%) / day = 9.8

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.2	7.3	<0.1	1.8	Very Low
15°-30°	0.2	7.8	<0.1	1.9	Very Low
30°-45°	0.5	13.4	0.1	3.4	Very Low
45°-60°	0.8	22.1	0.2	5.5	Very Low
60°-75°	1.7	40.3	0.4	10.1	Very Low
75°-90°	2.1	48.3	0.5	12.1	Low
90°-105°	1.9	45.5	0.5	11.4	Low
105°-120°	1.7	42.4	0.4	10.6	Very Low
120°-135°	1.9	47.4	0.5	11.8	Low
135°-150°	3.2	68.9	0.8	17.2	Medium
150°-165°	4.9	87.4	1.2	21.8	Medium
165°-180°	6.5	96.8	1.6	24.2	Medium
180°-195°	6.8	97.5	1.7	24.4	Medium
195°-210°	5.4	94.2	1.4	23.5	Medium
210°-225°	3.5	76.3	0.9	19.1	Medium
225°-240°	1.9	48.5	0.5	12.1	Low
240°-255°	0.8	25.1	0.2	6.3	Very Low
255°-270°	0.4	14.9	0.1	3.7	Very Low
270°-285°	0.3	11.1	<0.1	2.8	Very Low
285°-300°	0.3	13.7	<0.1	3.4	Very Low
300°-315°	0.2	9.0	<0.1	2.2	Very Low
315°-330°	0.1	5.6	<0.1	1.4	Very Low
330°-345°	0.1	6.9	<0.1	1.7	Very Low
345°-360°	0.2	8.5	<0.1	2.1	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

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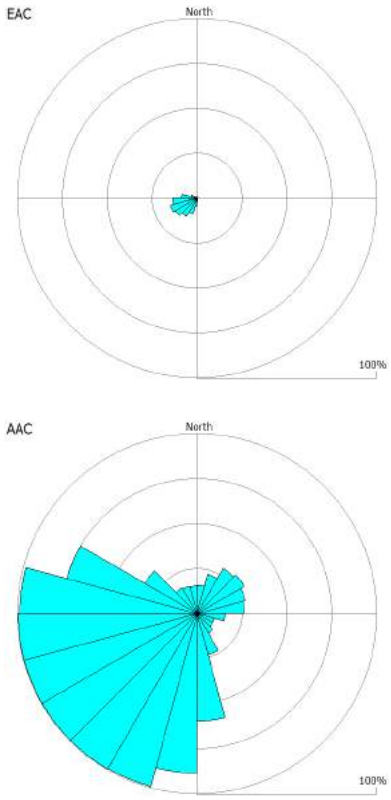
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-06 (No point description given)		
Date Out:	10-Aug-15	**Date In:**	14-Aug-15
Interval*:	4 days	**Our Ref:**	60478 / P-06 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.9
Absolute Area Coverage (AAC%) / interval = 47.0
Effective Area Coverage (EAC%) / day = 1.0
Absolute Area Coverage (AAC%) / day = 11.8

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.4	15.9	0.1	4.0	Very Low
15°-30°	0.6	22.6	0.2	5.7	Very Low
30°-45°	0.9	29.2	0.2	7.3	Very Low
45°-60°	1.0	30.5	0.2	7.6	Very Low
60°-75°	0.7	28.0	0.2	7.0	Very Low
75°-90°	0.7	26.6	0.2	6.7	Very Low
90°-105°	0.4	15.5	<0.1	3.9	Very Low
105°-120°	0.2	10.1	<0.1	2.5	Very Low
120°-135°	0.2	10.2	<0.1	2.6	Very Low
135°-150°	0.4	12.9	<0.1	3.2	Very Low
150°-165°	0.8	23.9	0.2	6.0	Very Low
165°-180°	2.5	59.7	0.6	14.9	Low
180°-195°	5.0	88.7	1.2	22.2	Medium
195°-210°	9.4	99.3	2.3	24.8	High
210°-225°	12.1	100.0	3.0	25.0	High
225°-240°	14.1	100.0	3.5	25.0	Very High
240°-255°	15.5	100.0	3.9	25.0	Very High
255°-270°	13.7	100.0	3.4	25.0	High
270°-285°	8.7	98.8	2.2	24.7	High
285°-300°	3.8	75.3	1.0	18.8	Medium
300°-315°	1.2	33.6	0.3	8.4	Very Low
315°-330°	0.5	17.1	0.1	4.3	Very Low
330°-345°	0.4	15.9	0.1	4.0	Very Low
345°-360°	0.4	15.5	<0.1	3.9	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

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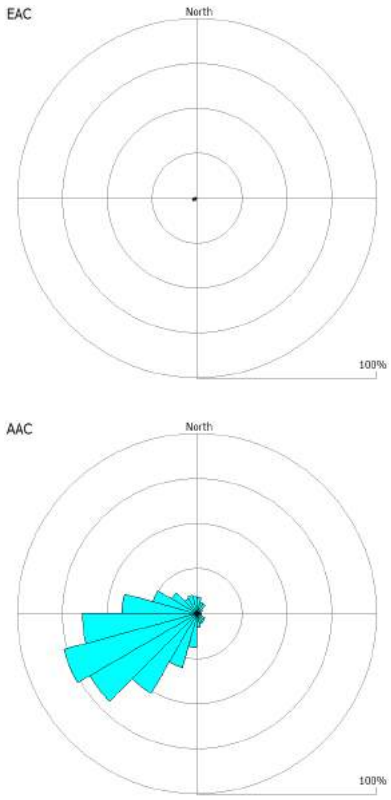
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-07 (No point description given)		
Date Out:	10-Aug-15	**Date In:**	14-Aug-15
Interval*:	4 days	**Our Ref:**	60479 / P-07 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.7
Absolute Area Coverage (AAC%) / interval = 20.3
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 5.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.2	9.1	<0.1	2.3	Very Low
15°-30°	0.1	6.5	<0.1	1.6	Very Low
30°-45°	0.2	6.5	<0.1	1.6	Very Low
45°-60°	<0.1	3.9	<0.1	1.0	Very Low
60°-75°	<0.1	2.6	<0.1	0.6	Very Low
75°-90°	<0.1	2.1	<0.1	0.5	Very Low
90°-105°	<0.1	2.8	<0.1	0.7	Very Low
105°-120°	<0.1	2.5	<0.1	0.6	Very Low
120°-135°	0.1	5.1	<0.1	1.3	Very Low
135°-150°	0.1	5.5	<0.1	1.4	Very Low
150°-165°	0.1	6.0	<0.1	1.5	Very Low
165°-180°	0.1	7.6	<0.1	1.9	Very Low
180°-195°	0.7	19.1	0.2	4.8	Very Low
195°-210°	1.0	31.3	0.2	7.8	Very Low
210°-225°	1.8	51.4	0.4	12.9	Very Low
225°-240°	2.7	69.0	0.7	17.2	Medium
240°-255°	3.1	76.8	0.8	19.2	Medium
255°-270°	2.4	64.2	0.6	16.1	Low
270°-285°	1.4	41.8	0.4	10.5	Very Low
285°-300°	0.7	25.5	0.2	6.4	Very Low
300°-315°	0.4	16.7	0.1	4.2	Very Low
315°-330°	0.2	9.9	<0.1	2.5	Very Low
330°-345°	0.3	10.9	<0.1	2.7	Very Low
345°-360°	0.2	9.7	<0.1	2.4	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

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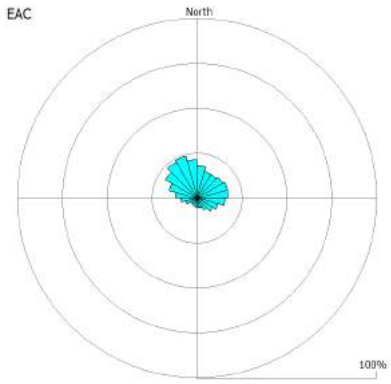
DS100 DIRECTIONAL DUST FLUX REPORT

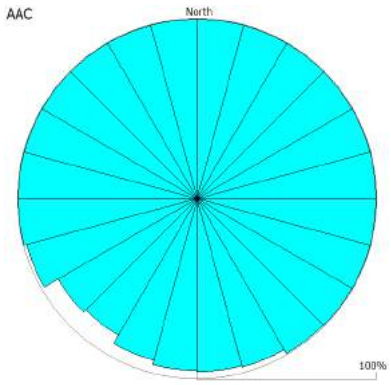
Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-08 (No point description given)		
Date Out:	10-Aug-15	**Date In:**	14-Aug-15
Interval*:	4 days	**Our Ref:**	60480 / P-08 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 13.0
Absolute Area Coverage (AAC%) / interval = 98.2
Effective Area Coverage (EAC%) / day = 3.2
Absolute Area Coverage (AAC%) / day = 24.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	18.1	100.0	4.5	25.0	Very High
15°-30°	15.6	100.0	3.9	25.0	Very High
30°-45°	15.6	100.0	3.9	25.0	Very High
45°-60°	16.5	100.0	4.1	25.0	Very High
60°-75°	17.5	100.0	4.4	25.0	Very High
75°-90°	17.7	100.0	4.4	25.0	Very High
90°-105°	15.5	100.0	3.9	25.0	Very High
105°-120°	12.4	100.0	3.1	25.0	Very High
120°-135°	10.0	100.0	2.5	25.0	High
135°-150°	7.6	99.5	1.9	24.9	High
150°-165°	5.9	97.0	1.5	24.2	Medium
165°-180°	5.3	96.1	1.3	24.0	Medium
180°-195°	5.0	95.4	1.3	23.9	Medium
195°-210°	4.8	93.2	1.2	23.3	Medium
210°-225°	4.3	87.7	1.1	21.9	Medium
225°-240°	4.6	89.5	1.1	22.4	Medium
240°-255°	6.6	98.2	1.7	24.6	Medium
255°-270°	9.2	100.0	2.3	25.0	High
270°-285°	12.2	100.0	3.1	25.0	Very High
285°-300°	16.2	100.0	4.1	25.0	Very High
300°-315°	20.5	100.0	5.1	25.0	Very High
315°-330°	23.5	100.0	5.9	25.0	Very High
330°-345°	24.3	100.0	6.1	25.0	Very High
345°-360°	21.7	100.0	5.4	25.0	Very High





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

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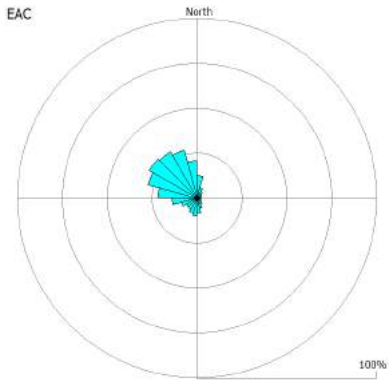
DS100 DIRECTIONAL DUST FLUX REPORT

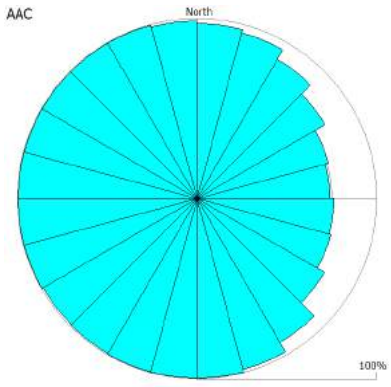
Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-01 (No point description given)		
Date Out:	10-Aug-15	**Date In:**	14-Aug-15
Interval*:	4 days	**Our Ref:**	60481 / S-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 11.5
Absolute Area Coverage (AAC%) / interval = 93.3
Effective Area Coverage (EAC%) / day = 2.9
Absolute Area Coverage (AAC%) / day = 23.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	12.6	97.5	3.2	24.4	High
15°-30°	6.3	95.5	1.6	23.9	Medium
30°-45°	4.6	89.6	1.1	22.4	Medium
45°-60°	3.4	82.2	0.9	20.5	Medium
60°-75°	2.8	76.0	0.7	19.0	Medium
75°-90°	2.5	74.2	0.6	18.5	Low
90°-105°	2.3	76.3	0.6	19.1	Low
105°-120°	2.4	77.2	0.6	19.3	Low
120°-135°	3.0	82.1	0.8	20.5	Medium
135°-150°	4.2	92.3	1.1	23.1	Medium
150°-165°	6.0	98.4	1.5	24.6	Medium
165°-180°	8.6	99.8	2.1	25.0	High
180°-195°	10.0	100.0	2.5	25.0	High
195°-210°	8.9	99.9	2.2	25.0	High
210°-225°	7.4	99.5	1.9	24.9	High
225°-240°	7.1	99.2	1.8	24.8	High
240°-255°	9.2	99.7	2.3	24.9	High
255°-270°	14.2	100.0	3.6	25.0	High
270°-285°	21.8	100.0	5.5	25.0	Very High
285°-300°	28.4	100.0	7.1	25.0	Very High
300°-315°	30.7	100.0	7.7	25.0	Very High
315°-330°	29.8	100.0	7.5	25.0	High
330°-345°	27.5	99.9	6.9	25.0	High
345°-360°	21.0	98.9	5.2	24.7	High





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

Please see our 'Quick Guide to DustScan DS100 Reporting' for more information on our assessment matrix and criteria

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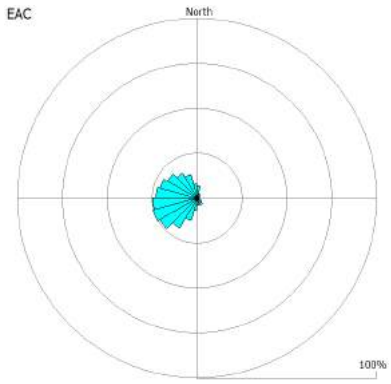
DS100 DIRECTIONAL DUST FLUX REPORT

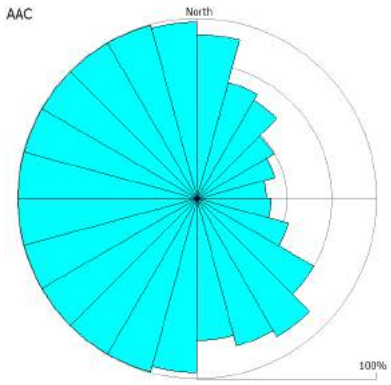
Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-02 (No point description given)		
Date Out:	10-Aug-15	**Date In:**	14-Aug-15
Interval*:	4 days	**Our Ref:**	60482 / S-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 10.5
Absolute Area Coverage (AAC%) / interval = 82.1
Effective Area Coverage (EAC%) / day = 2.6
Absolute Area Coverage (AAC%) / day = 20.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	7.1	91.1	1.8	22.8	Medium
15°-30°	3.0	67.1	0.8	16.8	Medium
30°-45°	2.7	63.0	0.7	15.7	Medium
45°-60°	1.8	49.6	0.5	12.4	Low
60°-75°	1.7	44.8	0.4	11.2	Very Low
75°-90°	1.1	38.9	0.3	9.7	Very Low
90°-105°	1.3	41.4	0.3	10.3	Very Low
105°-120°	1.8	52.8	0.4	13.2	Very Low
120°-135°	3.3	75.0	0.8	18.8	Medium
135°-150°	4.4	88.7	1.1	22.2	Medium
150°-165°	4.1	84.6	1.0	21.2	Medium
165°-180°	3.8	78.9	0.9	19.7	Medium
180°-195°	7.1	96.7	1.8	24.2	Medium
195°-210°	12.9	100.0	3.2	25.0	High
210°-225°	19.3	100.0	4.8	25.0	Very High
225°-240°	24.0	100.0	6.0	25.0	Very High
240°-255°	25.4	100.0	6.3	25.0	Very High
255°-270°	24.7	100.0	6.2	25.0	Very High
270°-285°	23.2	100.0	5.8	25.0	Very High
285°-300°	21.7	100.0	5.4	25.0	Very High
300°-315°	19.3	100.0	4.8	25.0	Very High
315°-330°	16.3	100.0	4.1	25.0	Very High
330°-345°	13.6	100.0	3.4	25.0	High
345°-360°	8.2	98.1	2.0	24.5	High





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

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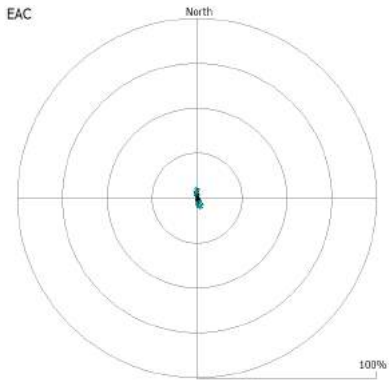
DS100 DIRECTIONAL DUST FLUX REPORT

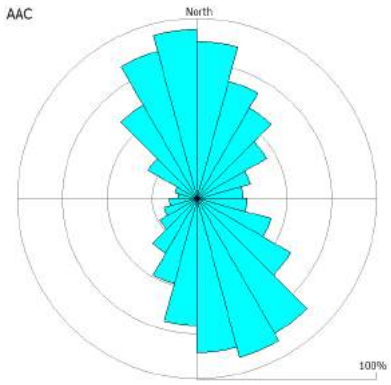
Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-03 (No point description given)		
Date Out:	10-Aug-15	**Date In:**	14-Aug-15
Interval*:	4 days	**Our Ref:**	60483 / S-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 2.6
Absolute Area Coverage (AAC%) / interval = 50.8
Effective Area Coverage (EAC%) / day = 0.7
Absolute Area Coverage (AAC%) / day = 12.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	5.5	87.2	1.4	21.8	Medium
15°-30°	3.0	67.9	0.7	17.0	Medium
30°-45°	2.5	58.6	0.6	14.6	Low
45°-60°	1.7	44.7	0.4	11.2	Very Low
60°-75°	1.1	31.0	0.3	7.7	Very Low
75°-90°	0.9	25.7	0.2	6.4	Very Low
90°-105°	1.1	28.1	0.3	7.0	Very Low
105°-120°	2.0	42.9	0.5	10.7	Low
120°-135°	3.0	60.3	0.8	15.1	Medium
135°-150°	5.3	86.7	1.3	21.7	Medium
150°-165°	6.3	91.2	1.6	22.8	Medium
165°-180°	5.3	85.6	1.3	21.4	Medium
180°-195°	4.0	70.6	1.0	17.7	Medium
195°-210°	2.3	49.2	0.6	12.3	Low
210°-225°	1.6	35.3	0.4	8.8	Very Low
225°-240°	1.0	24.1	0.3	6.0	Very Low
240°-255°	0.8	19.2	0.2	4.8	Very Low
255°-270°	0.7	15.6	0.2	3.9	Very Low
270°-285°	0.4	10.9	0.1	2.7	Very Low
285°-300°	0.4	13.1	0.1	3.3	Very Low
300°-315°	1.2	31.6	0.3	7.9	Very Low
315°-330°	2.6	60.2	0.7	15.0	Medium
330°-345°	4.3	84.9	1.1	21.2	Medium
345°-360°	5.8	94.0	1.5	23.5	Medium





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

Directional dust assessment matrix

		AAC: dust coverage				
		Level 0: <80%/interval	Level 1: 80 to <95%/interval	Level 2: 95 to <99%/interval	Level 3: 99 to 100%/interval	Level 4: 100% over 45°/interval
EAC: dust soiling	Level 0: <0.5%/day	Very Low	Very Low	Very Low	Low	Medium
	Level 1: 0.5 to <0.7%/day	Low	Low	Low	Medium	High
	Level 2: 0.7 to <2.0%/day	Medium	Medium	Medium	High	High
	Level 3: 2.0 to <5.0%/day	High	High	High	High	Very High
	Level 4: ≥5%/day	Very High	Very High	Very High	Very High	Very High

*We recommend 1-14 day sampling intervals

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Dust Consultancy and Dust Monitoring Services

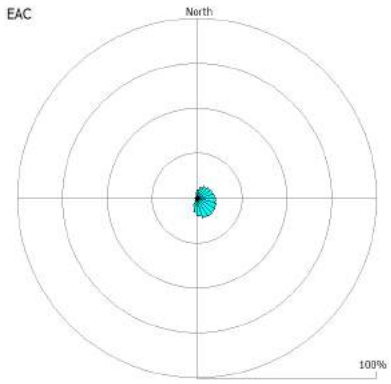
DS100 DIRECTIONAL DUST FLUX REPORT

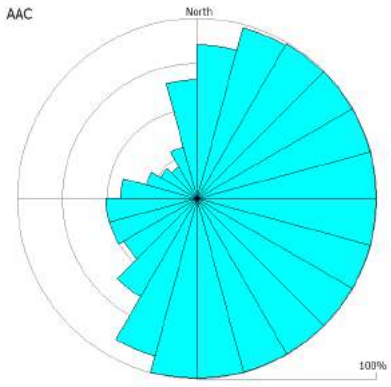
Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	A-01 (No point description given)		
Date Out:	14-Sep-15	**Date In:**	18-Sep-15
Interval*:	4 days	**Our Ref:**	61418 / A-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 5.9
Absolute Area Coverage (AAC%) / interval = 74.9
Effective Area Coverage (EAC%) / day = 1.5
Absolute Area Coverage (AAC%) / day = 18.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	4.7	85.5	1.2	21.4	Medium
15°-30°	6.7	98.4	1.7	24.6	Medium
30°-45°	7.7	99.6	1.9	24.9	High
45°-60°	8.4	99.8	2.1	25.0	High
60°-75°	9.2	100.0	2.3	25.0	High
75°-90°	9.7	100.0	2.4	25.0	Very High
90°-105°	10.7	100.0	2.7	25.0	Very High
105°-120°	11.3	100.0	2.8	25.0	Very High
120°-135°	11.8	100.0	2.9	25.0	Very High
135°-150°	12.0	100.0	3.0	25.0	Very High
150°-165°	11.5	100.0	2.9	25.0	Very High
165°-180°	10.3	100.0	2.6	25.0	High
180°-195°	8.0	99.7	2.0	24.9	High
195°-210°	4.9	90.4	1.2	22.6	Medium
210°-225°	2.4	63.1	0.6	15.8	Low
225°-240°	1.5	47.4	0.4	11.9	Very Low
240°-255°	1.6	50.4	0.4	12.6	Very Low
255°-270°	1.7	50.8	0.4	12.7	Very Low
270°-285°	1.3	42.8	0.3	10.7	Very Low
285°-300°	0.8	29.5	0.2	7.4	Very Low
300°-315°	0.5	23.9	0.1	6.0	Very Low
315°-330°	0.5	20.7	0.1	5.2	Very Low
330°-345°	0.8	29.9	0.2	7.5	Very Low
345°-360°	3.3	66.2	0.8	16.6	Medium





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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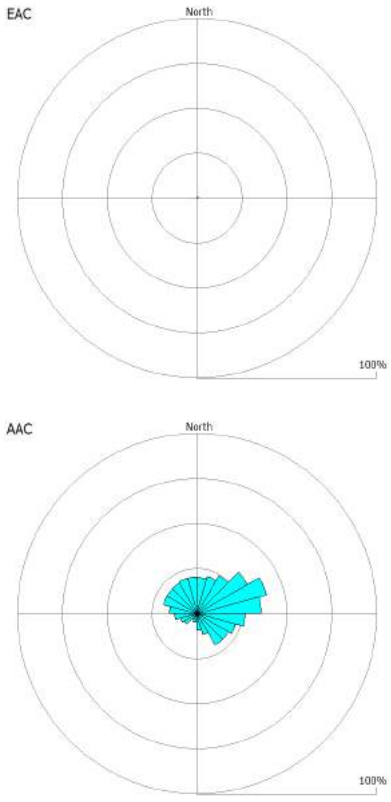
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-01 (No point description given)		
Date Out:	14-Sep-15	**Date In:**	18-Sep-15
Interval*:	4 days	**Our Ref:**	61419 / P-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.5
Absolute Area Coverage (AAC%) / interval = 18.6
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 4.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.5	20.1	0.1	5.0	Very Low
15°-30°	0.6	21.6	0.1	5.4	Very Low
30°-45°	0.7	24.5	0.2	6.1	Very Low
45°-60°	1.0	32.8	0.3	8.2	Very Low
60°-75°	1.2	40.2	0.3	10.1	Very Low
75°-90°	1.1	36.0	0.3	9.0	Very Low
90°-105°	0.8	27.0	0.2	6.7	Very Low
105°-120°	0.6	22.4	0.2	5.6	Very Low
120°-135°	0.6	20.1	0.1	5.0	Very Low
135°-150°	0.6	20.1	0.1	5.0	Very Low
150°-165°	0.3	12.2	<0.1	3.0	Very Low
165°-180°	0.2	9.5	<0.1	2.4	Very Low
180°-195°	<0.1	4.8	<0.1	1.2	Very Low
195°-210°	<0.1	5.4	<0.1	1.3	Very Low
210°-225°	<0.1	3.9	<0.1	1.0	Very Low
225°-240°	0.2	8.5	<0.1	2.1	Very Low
240°-255°	0.2	9.5	<0.1	2.4	Very Low
255°-270°	0.3	12.8	<0.1	3.2	Very Low
270°-285°	0.4	15.7	0.1	3.9	Very Low
285°-300°	0.6	19.3	0.1	4.8	Very Low
300°-315°	0.5	19.5	0.1	4.9	Very Low
315°-330°	0.5	19.8	0.1	5.0	Very Low
330°-345°	0.6	20.6	0.1	5.2	Very Low
345°-360°	0.5	20.4	0.1	5.1	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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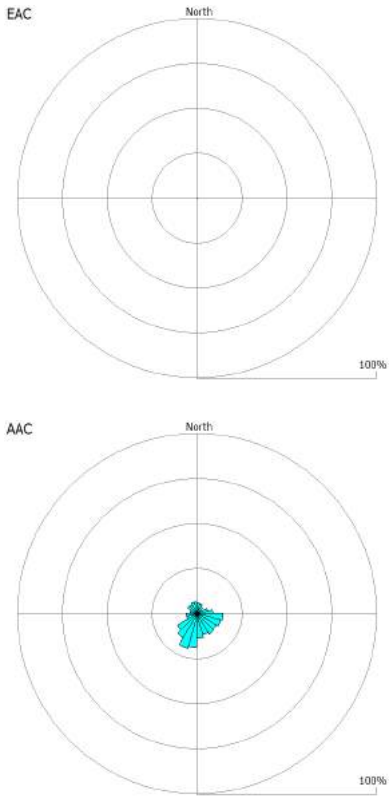
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-02 (No point description given)		
Date Out:	14-Sep-15	**Date In:**	18-Sep-15
Interval*:	4 days	**Our Ref:**	61420 / P-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.2
Absolute Area Coverage (AAC%) / interval = 9.6
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 2.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	<0.1	6.3	<0.1	1.6	Very Low
15°-30°	<0.1	5.9	<0.1	1.5	Very Low
30°-45°	<0.1	4.3	<0.1	1.1	Very Low
45°-60°	<0.1	3.9	<0.1	1.0	Very Low
60°-75°	0.1	6.3	<0.1	1.6	Very Low
75°-90°	0.2	9.2	<0.1	2.3	Very Low
90°-105°	0.3	14.5	<0.1	3.6	Very Low
105°-120°	0.3	13.7	<0.1	3.4	Very Low
120°-135°	0.3	12.8	<0.1	3.2	Very Low
135°-150°	0.3	13.4	<0.1	3.4	Very Low
150°-165°	0.2	12.4	<0.1	3.1	Very Low
165°-180°	0.3	13.7	<0.1	3.4	Very Low
180°-195°	0.5	19.0	0.1	4.7	Very Low
195°-210°	0.4	20.2	0.1	5.1	Very Low
210°-225°	0.3	15.6	<0.1	3.9	Very Low
225°-240°	0.2	13.1	<0.1	3.3	Very Low
240°-255°	<0.1	6.4	<0.1	1.6	Very Low
255°-270°	<0.1	6.1	<0.1	1.5	Very Low
270°-285°	<0.1	3.9	<0.1	1.0	Very Low
285°-300°	<0.1	4.0	<0.1	1.0	Very Low
300°-315°	<0.1	6.1	<0.1	1.5	Very Low
315°-330°	<0.1	5.8	<0.1	1.4	Very Low
330°-345°	<0.1	7.0	<0.1	1.8	Very Low
345°-360°	<0.1	6.7	<0.1	1.7	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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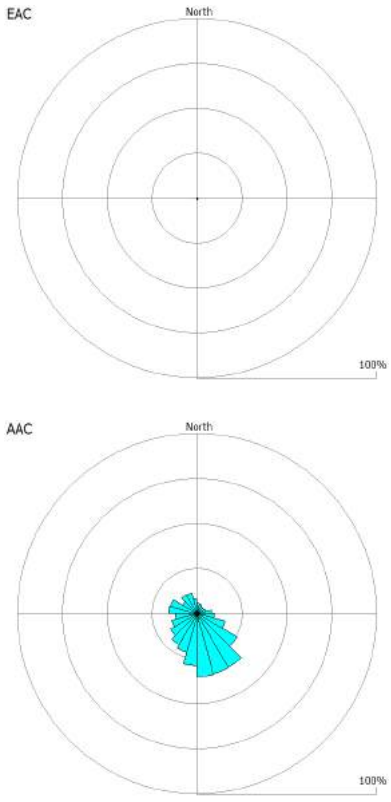
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-03 (No point description given)		
Date Out:	14-Sep-15	**Date In:**	18-Sep-15
Interval*:	4 days	**Our Ref:**	61421 / P-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.5
Absolute Area Coverage (AAC%) / interval = 15.8
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 4.0

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.1	5.8	<0.1	1.4	Very Low
15°-30°	0.1	5.4	<0.1	1.3	Very Low
30°-45°	<0.1	4.3	<0.1	1.1	Very Low
45°-60°	<0.1	4.5	<0.1	1.1	Very Low
60°-75°	<0.1	5.2	<0.1	1.3	Very Low
75°-90°	0.2	8.4	<0.1	2.1	Very Low
90°-105°	0.2	9.9	<0.1	2.5	Very Low
105°-120°	0.4	16.4	0.1	4.1	Very Low
120°-135°	0.7	26.0	0.2	6.5	Very Low
135°-150°	1.0	34.7	0.3	8.7	Very Low
150°-165°	1.0	34.8	0.3	8.7	Very Low
165°-180°	1.1	35.1	0.3	8.8	Very Low
180°-195°	0.9	29.2	0.2	7.3	Very Low
195°-210°	0.7	22.5	0.2	5.6	Very Low
210°-225°	0.7	20.1	0.2	5.0	Very Low
225°-240°	0.6	17.2	0.1	4.3	Very Low
240°-255°	0.5	14.9	0.1	3.7	Very Low
255°-270°	0.4	12.4	<0.1	3.1	Very Low
270°-285°	0.5	15.8	0.1	4.0	Very Low
285°-300°	0.5	15.6	0.1	3.9	Very Low
300°-315°	0.3	9.6	<0.1	2.4	Very Low
315°-330°	0.3	12.2	<0.1	3.1	Very Low
330°-345°	0.3	12.0	<0.1	3.0	Very Low
345°-360°	0.2	8.4	<0.1	2.1	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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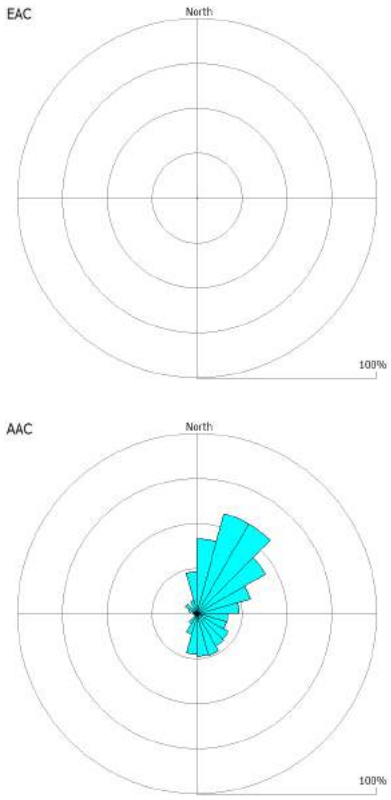
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-04 (No point description given)		
Date Out:	14-Sep-15	**Date In:**	18-Sep-15
Interval*:	4 days	**Our Ref:**	61422 / P-04 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.3
Absolute Area Coverage (AAC%) / interval = 19.8
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 5.0

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.3	41.4	<0.1	10.4	Very Low
15°-30°	0.5	57.6	0.1	14.4	Very Low
30°-45°	0.5	57.6	0.1	14.4	Very Low
45°-60°	0.4	44.1	0.1	11.0	Very Low
60°-75°	0.4	30.8	<0.1	7.7	Very Low
75°-90°	0.3	23.5	<0.1	5.9	Very Low
90°-105°	0.3	17.2	<0.1	4.3	Very Low
105°-120°	0.4	16.8	<0.1	4.2	Very Low
120°-135°	0.5	20.1	0.1	5.0	Very Low
135°-150°	0.5	21.0	0.1	5.3	Very Low
150°-165°	0.6	24.2	0.2	6.1	Very Low
165°-180°	0.6	23.6	0.2	5.9	Very Low
180°-195°	0.6	22.8	0.1	5.7	Very Low
195°-210°	0.2	12.0	<0.1	3.0	Very Low
210°-225°	0.1	6.4	<0.1	1.6	Very Low
225°-240°	<0.1	2.2	<0.1	0.6	Very Low
240°-255°	<0.1	1.3	<0.1	0.3	Very Low
255°-270°	<0.1	2.2	<0.1	0.6	Very Low
270°-285°	<0.1	2.7	<0.1	0.7	Very Low
285°-300°	<0.1	5.2	<0.1	1.3	Very Low
300°-315°	0.1	7.8	<0.1	2.0	Very Low
315°-330°	<0.1	3.8	<0.1	1.0	Very Low
330°-345°	<0.1	7.8	<0.1	1.9	Very Low
345°-360°	0.2	23.2	<0.1	5.8	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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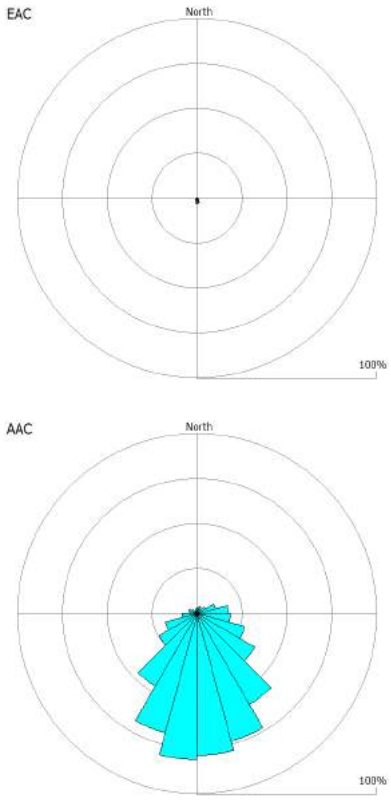
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-05 (No point description given)		
Date Out:	14-Sep-15	**Date In:**	18-Sep-15
Interval*:	4 days	**Our Ref:**	61423 / P-05 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.9
Absolute Area Coverage (AAC%) / interval = 25.4
Effective Area Coverage (EAC%) / day = 0.2
Absolute Area Coverage (AAC%) / day = 6.4

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	<0.1	3.5	<0.1	0.9	Very Low
15°-30°	<0.1	4.5	<0.1	1.1	Very Low
30°-45°	<0.1	3.7	<0.1	0.9	Very Low
45°-60°	<0.1	5.4	<0.1	1.4	Very Low
60°-75°	0.3	11.0	<0.1	2.7	Very Low
75°-90°	0.5	17.7	0.1	4.4	Very Low
90°-105°	0.5	18.8	0.1	4.7	Very Low
105°-120°	0.8	27.6	0.2	6.9	Very Low
120°-135°	1.2	37.4	0.3	9.3	Very Low
135°-150°	2.1	58.3	0.5	14.6	Low
150°-165°	3.1	73.5	0.8	18.4	Medium
165°-180°	3.3	78.9	0.8	19.7	Medium
180°-195°	3.2	81.3	0.8	20.3	Medium
195°-210°	2.6	68.7	0.7	17.2	Medium
210°-225°	1.6	46.4	0.4	11.6	Very Low
225°-240°	0.7	24.9	0.2	6.2	Very Low
240°-255°	0.5	18.5	0.1	4.6	Very Low
255°-270°	0.2	8.3	<0.1	2.1	Very Low
270°-285°	<0.1	3.9	<0.1	1.0	Very Low
285°-300°	<0.1	5.0	<0.1	1.3	Very Low
300°-315°	<0.1	3.7	<0.1	0.9	Very Low
315°-330°	<0.1	2.5	<0.1	0.6	Very Low
330°-345°	<0.1	2.7	<0.1	0.7	Very Low
345°-360°	<0.1	3.2	<0.1	0.8	Very Low



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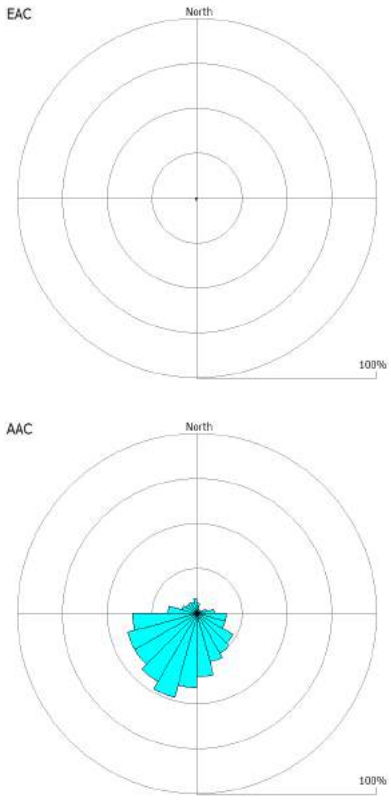
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-06 (No point description given)		
Date Out:	14-Sep-15	**Date In:**	18-Sep-15
Interval*:	4 days	**Our Ref:**	61424 / P-06 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.5
Absolute Area Coverage (AAC%) / interval = 19.9
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 5.0

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	<0.1	5.7	<0.1	1.4	Very Low
15°-30°	<0.1	2.3	<0.1	0.6	Very Low
30°-45°	<0.1	2.8	<0.1	0.7	Very Low
45°-60°	<0.1	2.9	<0.1	0.7	Very Low
60°-75°	<0.1	5.4	<0.1	1.4	Very Low
75°-90°	0.2	9.9	<0.1	2.5	Very Low
90°-105°	0.4	16.3	<0.1	4.1	Very Low
105°-120°	0.3	16.3	<0.1	4.1	Very Low
120°-135°	0.5	23.3	0.1	5.8	Very Low
135°-150°	0.6	25.6	0.1	6.4	Very Low
150°-165°	0.7	28.0	0.2	7.0	Very Low
165°-180°	1.0	35.3	0.2	8.8	Very Low
180°-195°	1.1	41.3	0.3	10.3	Very Low
195°-210°	1.5	48.5	0.4	12.1	Very Low
210°-225°	1.3	43.8	0.3	11.0	Very Low
225°-240°	1.2	40.1	0.3	10.0	Very Low
240°-255°	1.1	40.1	0.3	10.0	Very Low
255°-270°	0.9	35.7	0.2	8.9	Very Low
270°-285°	0.3	16.3	<0.1	4.1	Very Low
285°-300°	0.1	8.7	<0.1	2.2	Very Low
300°-315°	0.1	7.3	<0.1	1.8	Very Low
315°-330°	0.1	7.2	<0.1	1.8	Very Low
330°-345°	<0.1	6.7	<0.1	1.7	Very Low
345°-360°	0.1	8.4	<0.1	2.1	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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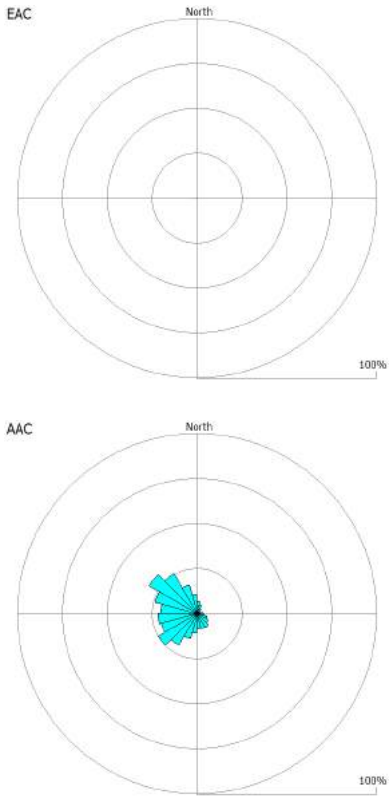
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-07 (No point description given)		
Date Out:	14-Sep-15	**Date In:**	18-Sep-15
Interval*:	4 days	**Our Ref:**	61425 / P-07 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.3
Absolute Area Coverage (AAC%) / interval = 12.9
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 3.2

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.1	7.0	<0.1	1.8	Very Low
15°-30°	0.1	5.2	<0.1	1.3	Very Low
30°-45°	<0.1	3.3	<0.1	0.8	Very Low
45°-60°	<0.1	2.4	<0.1	0.6	Very Low
60°-75°	<0.1	1.7	<0.1	0.4	Very Low
75°-90°	<0.1	3.4	<0.1	0.8	Very Low
90°-105°	<0.1	3.7	<0.1	0.9	Very Low
105°-120°	<0.1	6.0	<0.1	1.5	Very Low
120°-135°	0.1	7.1	<0.1	1.8	Very Low
135°-150°	0.2	9.0	<0.1	2.3	Very Low
150°-165°	0.2	8.8	<0.1	2.2	Very Low
165°-180°	0.2	8.6	<0.1	2.2	Very Low
180°-195°	0.2	10.9	<0.1	2.7	Very Low
195°-210°	0.3	14.5	<0.1	3.6	Very Low
210°-225°	0.5	20.7	0.1	5.2	Very Low
225°-240°	0.6	25.1	0.1	6.3	Very Low
240°-255°	0.4	21.0	0.1	5.3	Very Low
255°-270°	0.5	22.1	0.1	5.5	Very Low
270°-285°	0.4	20.6	<0.1	5.2	Very Low
285°-300°	0.5	24.6	0.1	6.2	Very Low
300°-315°	0.6	30.7	0.2	7.7	Very Low
315°-330°	0.5	26.0	0.1	6.5	Very Low
330°-345°	0.3	16.7	<0.1	4.2	Very Low
345°-360°	0.2	11.0	<0.1	2.7	Very Low



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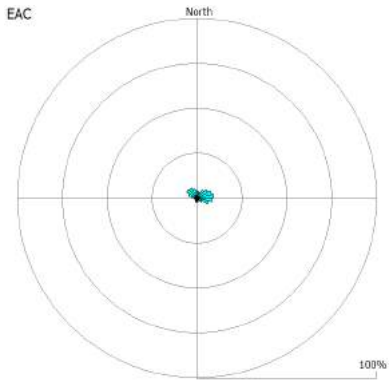
DS100 DIRECTIONAL DUST FLUX REPORT

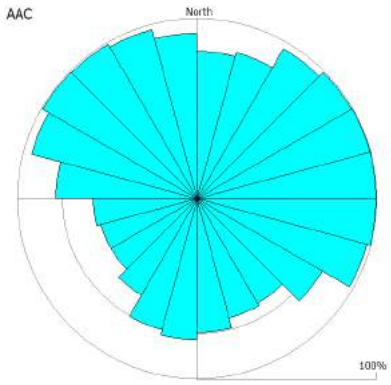
Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-08 (No point description given)		
Date Out:	14-Sep-15	**Date In:**	18-Sep-15
Interval*:	4 days	**Our Ref:**	61426 / P-08 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 4.5
Absolute Area Coverage (AAC%) / interval = 83.2
Effective Area Coverage (EAC%) / day = 1.1
Absolute Area Coverage (AAC%) / day = 20.8

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	4.3	81.8	1.1	20.5	Medium
15°-30°	3.9	84.3	1.0	21.1	Medium
30°-45°	5.4	96.1	1.4	24.0	Medium
45°-60°	6.9	99.5	1.7	24.9	High
60°-75°	8.5	100.0	2.1	25.0	High
75°-90°	9.4	100.0	2.3	25.0	Very High
90°-105°	8.7	100.0	2.2	25.0	High
105°-120°	6.5	97.9	1.6	24.5	Medium
120°-135°	3.5	80.6	0.9	20.1	Medium
135°-150°	2.2	67.2	0.6	16.8	Low
150°-165°	2.2	68.7	0.5	17.2	Low
165°-180°	2.5	74.5	0.6	18.6	Low
180°-195°	2.7	78.3	0.7	19.6	Medium
195°-210°	2.6	75.4	0.6	18.8	Low
210°-225°	1.9	61.8	0.5	15.5	Low
225°-240°	1.7	55.5	0.4	13.9	Very Low
240°-255°	1.8	55.4	0.5	13.8	Low
255°-270°	2.0	58.1	0.5	14.5	Low
270°-285°	3.3	78.6	0.8	19.6	Medium
285°-300°	5.3	95.4	1.3	23.9	Medium
300°-315°	7.0	99.5	1.7	24.9	High
315°-330°	6.5	99.0	1.6	24.7	High
330°-345°	5.7	97.2	1.4	24.3	Medium
345°-360°	4.6	92.0	1.2	23.0	Medium





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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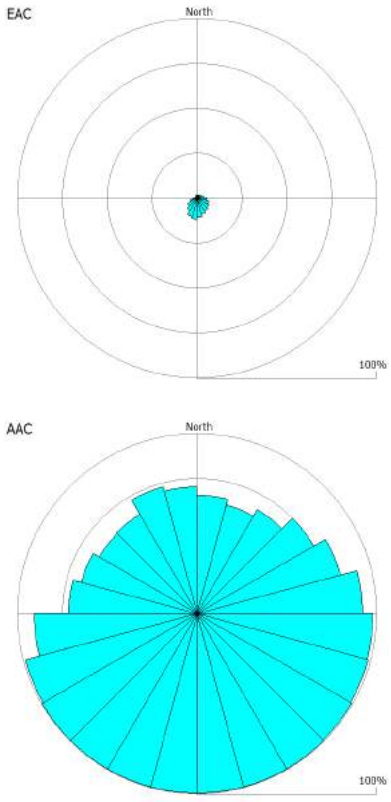
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-01 (No point description given)		
Date Out:	14-Sep-15	**Date In:**	18-Sep-15
Interval*:	4 days	**Our Ref:**	61427 / S-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 4.9
Absolute Area Coverage (AAC%) / interval = 85.0
Effective Area Coverage (EAC%) / day = 1.2
Absolute Area Coverage (AAC%) / day = 21.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.9	65.7	0.5	16.4	Low
15°-30°	1.9	62.7	0.5	15.7	Low
30°-45°	2.2	66.8	0.5	16.7	Low
45°-60°	2.7	75.1	0.7	18.8	Medium
60°-75°	3.3	82.8	0.8	20.7	Medium
75°-90°	4.1	92.2	1.0	23.1	Medium
90°-105°	5.7	98.1	1.4	24.5	Medium
105°-120°	6.8	98.6	1.7	24.7	Medium
120°-135°	7.8	99.3	1.9	24.8	High
135°-150°	8.4	99.9	2.1	25.0	High
150°-165°	9.3	100.0	2.3	25.0	High
165°-180°	11.0	100.0	2.8	25.0	Very High
180°-195°	12.0	100.0	3.0	25.0	Very High
195°-210°	10.9	100.0	2.7	25.0	Very High
210°-225°	8.1	100.0	2.0	25.0	Very High
225°-240°	6.3	100.0	1.6	25.0	High
240°-255°	4.1	99.1	1.0	24.8	High
255°-270°	2.4	91.0	0.6	22.8	Low
270°-285°	1.4	71.7	0.3	17.9	Very Low
285°-300°	1.3	67.0	0.3	16.7	Very Low
300°-315°	1.2	63.1	0.3	15.8	Very Low
315°-330°	1.4	63.7	0.3	15.9	Very Low
330°-345°	1.8	73.1	0.5	18.3	Low
345°-360°	1.8	70.5	0.4	17.6	Very Low



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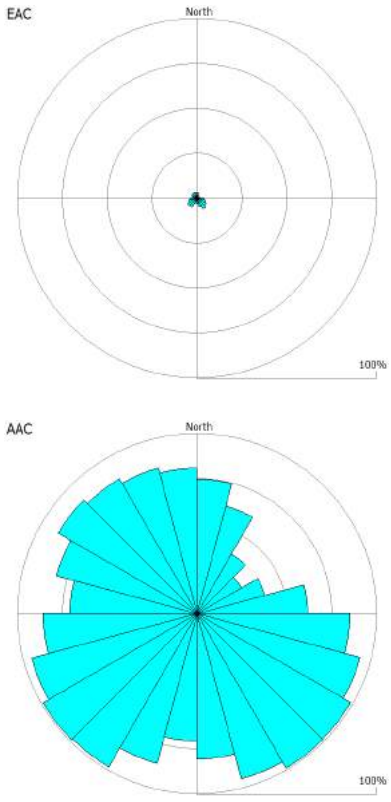
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-02 (No point description given)		
Date Out:	14-Sep-15	**Date In:**	18-Sep-15
Interval*:	4 days	**Our Ref:**	61428 / S-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 3.7
Absolute Area Coverage (AAC%) / interval = 78.6
Effective Area Coverage (EAC%) / day = 0.9
Absolute Area Coverage (AAC%) / day = 19.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	3.3	74.8	0.8	18.7	Medium
15°-30°	2.4	61.9	0.6	15.5	Low
30°-45°	1.3	38.5	0.3	9.6	Very Low
45°-60°	0.8	28.8	0.2	7.2	Very Low
60°-75°	1.2	38.9	0.3	9.7	Very Low
75°-90°	2.1	61.7	0.5	15.4	Low
90°-105°	3.9	85.1	1.0	21.3	Medium
105°-120°	4.7	94.0	1.2	23.5	Medium
120°-135°	6.1	98.6	1.5	24.6	Medium
135°-150°	6.9	99.1	1.7	24.8	High
150°-165°	5.1	95.2	1.3	23.8	Medium
165°-180°	3.4	81.0	0.8	20.3	Medium
180°-195°	2.5	70.8	0.6	17.7	Low
195°-210°	3.6	86.4	0.9	21.6	Medium
210°-225°	5.9	98.3	1.5	24.6	Medium
225°-240°	6.3	99.2	1.6	24.8	High
240°-255°	5.1	95.7	1.3	23.9	Medium
255°-270°	3.8	86.0	1.0	21.5	Medium
270°-285°	2.5	70.9	0.6	17.7	Low
285°-300°	3.1	81.4	0.8	20.3	Medium
300°-315°	3.7	89.5	0.9	22.4	Medium
315°-330°	3.7	86.7	0.9	21.7	Medium
330°-345°	3.4	83.7	0.9	20.9	Medium
345°-360°	3.2	80.8	0.8	20.2	Medium



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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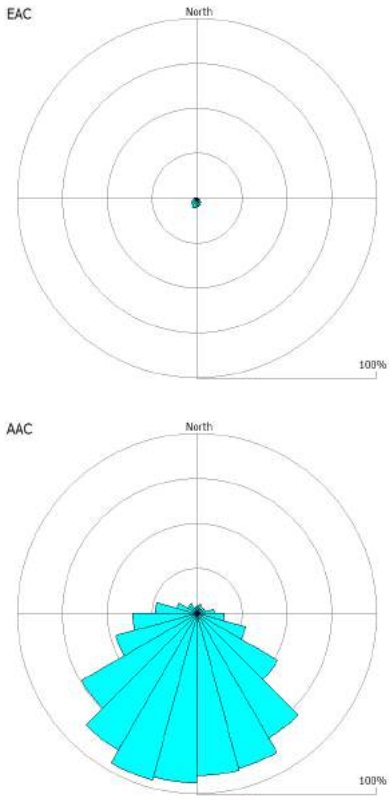
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-03 (No point description given)		
Date Out:	14-Sep-15	**Date In:**	18-Sep-15
Interval*:	4 days	**Our Ref:**	61429 / S-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.8
Absolute Area Coverage (AAC%) / interval = 36.6
Effective Area Coverage (EAC%) / day = 0.4
Absolute Area Coverage (AAC%) / day = 9.2

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	<0.1	4.6	<0.1	1.2	Very Low
15°-30°	0.1	5.6	<0.1	1.4	Very Low
30°-45°	<0.1	3.5	<0.1	0.9	Very Low
45°-60°	<0.1	4.7	<0.1	1.2	Very Low
60°-75°	<0.1	4.8	<0.1	1.2	Very Low
75°-90°	0.2	9.7	<0.1	2.4	Very Low
90°-105°	0.4	15.2	0.1	3.8	Very Low
105°-120°	1.0	28.4	0.2	7.1	Very Low
120°-135°	2.0	52.1	0.5	13.0	Low
135°-150°	3.5	79.9	0.9	20.0	Medium
150°-165°	4.5	89.0	1.1	22.2	Medium
165°-180°	4.9	90.1	1.2	22.5	Medium
180°-195°	5.6	94.2	1.4	23.6	Medium
195°-210°	5.9	95.9	1.5	24.0	Medium
210°-225°	4.8	87.7	1.2	21.9	Medium
225°-240°	4.1	74.5	1.0	18.6	Medium
240°-255°	2.3	47.1	0.6	11.8	Low
255°-270°	1.5	36.0	0.4	9.0	Very Low
270°-285°	0.8	23.5	0.2	5.9	Very Low
285°-300°	0.3	12.1	<0.1	3.0	Very Low
300°-315°	0.1	6.4	<0.1	1.6	Very Low
315°-330°	0.1	6.5	<0.1	1.6	Very Low
330°-345°	<0.1	3.6	<0.1	0.9	Very Low
345°-360°	<0.1	4.2	<0.1	1.0	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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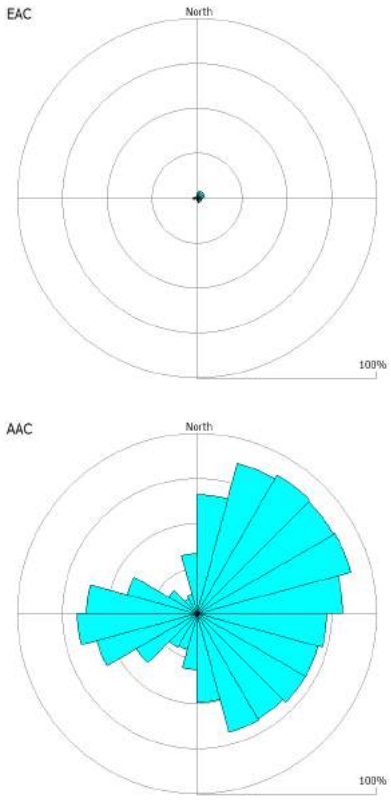
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	A-01 (No point description given)		
Date Out:	19-Oct-15	**Date In:**	23-Oct-15
Interval*:	4 days	**Our Ref:**	62765 / A-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 2.3
Absolute Area Coverage (AAC%) / interval = 54.6
Effective Area Coverage (EAC%) / day = 0.6
Absolute Area Coverage (AAC%) / day = 13.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	3.0	66.3	0.8	16.6	Medium
15°-30°	4.0	86.6	1.0	21.6	Medium
30°-45°	4.4	88.9	1.1	22.2	Medium
45°-60°	4.4	88.0	1.1	22.0	Medium
60°-75°	4.5	88.6	1.1	22.2	Medium
75°-90°	3.8	81.3	0.9	20.3	Medium
90°-105°	3.2	72.4	0.8	18.1	Medium
105°-120°	3.0	69.7	0.7	17.4	Medium
120°-135°	2.9	69.8	0.7	17.5	Medium
135°-150°	2.8	67.5	0.7	16.9	Medium
150°-165°	2.9	68.3	0.7	17.1	Medium
165°-180°	1.7	49.3	0.4	12.3	Very Low
180°-195°	1.0	31.2	0.2	7.8	Very Low
195°-210°	0.6	20.8	0.2	5.2	Very Low
210°-225°	0.6	22.0	0.2	5.5	Very Low
225°-240°	1.3	39.0	0.3	9.8	Very Low
240°-255°	2.0	58.0	0.5	14.5	Low
255°-270°	2.7	66.8	0.7	16.7	Medium
270°-285°	2.4	61.5	0.6	15.4	Low
285°-300°	1.3	40.6	0.3	10.1	Very Low
300°-315°	0.6	18.4	0.1	4.6	Very Low
315°-330°	0.3	9.9	<0.1	2.5	Very Low
330°-345°	0.3	11.2	<0.1	2.8	Very Low
345°-360°	1.4	33.2	0.3	8.3	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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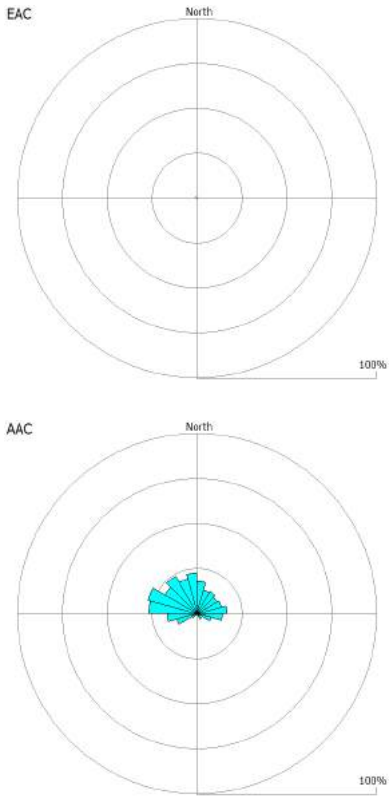
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-01 (No point description given)		
Date Out:	19-Oct-15	**Date In:**	23-Oct-15
Interval*:	4 days	**Our Ref:**	62766 / P-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.3
Absolute Area Coverage (AAC%) / interval = 12.5
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 3.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.5	18.1	0.1	4.5	Very Low
15°-30°	0.3	13.8	<0.1	3.4	Very Low
30°-45°	0.4	14.5	0.1	3.6	Very Low
45°-60°	0.3	13.2	<0.1	3.3	Very Low
60°-75°	0.4	14.1	<0.1	3.5	Very Low
75°-90°	0.4	16.7	0.1	4.2	Very Low
90°-105°	0.4	14.1	<0.1	3.5	Very Low
105°-120°	0.2	8.1	<0.1	2.0	Very Low
120°-135°	<0.1	2.3	<0.1	0.6	Very Low
135°-150°	<0.1	3.6	<0.1	0.9	Very Low
150°-165°	<0.1	1.0	<0.1	0.3	Very Low
165°-180°	<0.1	0.6	<0.1	0.1	Very Low
180°-195°	<0.1	1.1	<0.1	0.3	Very Low
195°-210°	<0.1	1.3	<0.1	0.3	Very Low
210°-225°	<0.1	1.4	<0.1	0.4	Very Low
225°-240°	<0.1	3.6	<0.1	0.9	Very Low
240°-255°	0.4	11.9	<0.1	3.0	Very Low
255°-270°	0.4	16.5	0.1	4.1	Very Low
270°-285°	0.8	27.0	0.2	6.8	Very Low
285°-300°	0.8	28.4	0.2	7.1	Very Low
300°-315°	0.6	21.0	0.1	5.3	Very Low
315°-330°	0.7	24.2	0.2	6.0	Very Low
330°-345°	0.5	20.3	0.1	5.1	Very Low
345°-360°	0.7	22.5	0.2	5.6	Very Low



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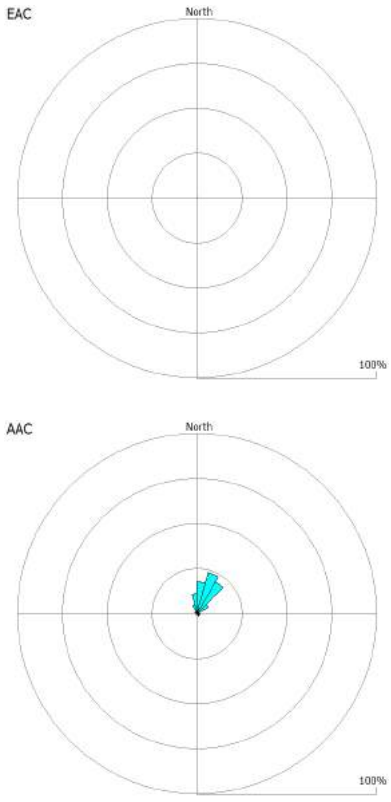
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-02 (No point description given)		
Date Out:	19-Oct-15	**Date In:**	23-Oct-15
Interval*:	4 days	**Our Ref:**	62767 / P-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.1
Absolute Area Coverage (AAC%) / interval = 4.3
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.4	17.7	<0.1	4.4	Very Low
15°-30°	0.5	23.6	0.1	5.9	Very Low
30°-45°	0.5	20.6	0.1	5.1	Very Low
45°-60°	0.2	7.4	<0.1	1.8	Very Low
60°-75°	<0.1	1.3	<0.1	0.3	Very Low
75°-90°	<0.1	1.0	<0.1	0.2	Very Low
90°-105°	<0.1	0.4	<0.1	0.1	Very Low
105°-120°	<0.1	1.9	<0.1	0.5	Very Low
120°-135°	<0.1	1.2	<0.1	0.3	Very Low
135°-150°	<0.1	1.9	<0.1	0.5	Very Low
150°-165°	<0.1	0.8	<0.1	0.2	Very Low
165°-180°	<0.1	0.1	<0.1	<0.1	Very Low
180°-195°	<0.1	0.6	<0.1	0.2	Very Low
195°-210°	<0.1	1.2	<0.1	0.3	Very Low
210°-225°	<0.1	0.1	<0.1	<0.1	Very Low
225°-240°	<0.1	<0.1	<0.1	<0.1	Very Low
240°-255°	<0.1	0.2	<0.1	<0.1	Very Low
255°-270°	<0.1	0.5	<0.1	0.1	Very Low
270°-285°	<0.1	0.8	<0.1	0.2	Very Low
285°-300°	<0.1	0.6	<0.1	0.2	Very Low
300°-315°	<0.1	2.1	<0.1	0.5	Very Low
315°-330°	<0.1	1.6	<0.1	0.4	Very Low
330°-345°	<0.1	5.3	<0.1	1.3	Very Low
345°-360°	0.2	11.2	<0.1	2.8	Very Low



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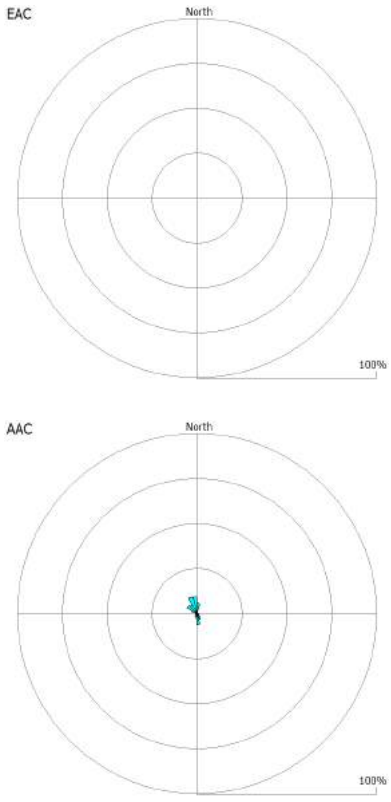
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-03 (No point description given)		
Date Out:	19-Oct-15	**Date In:**	23-Oct-15
Interval*:	4 days	**Our Ref:**	62768 / P-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.1
Absolute Area Coverage (AAC%) / interval = 2.9
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.1	5.9	<0.1	1.5	Very Low
15°-30°	<0.1	0.9	<0.1	0.2	Very Low
30°-45°	<0.1	0.3	<0.1	<0.1	Very Low
45°-60°	<0.1	0.3	<0.1	<0.1	Very Low
60°-75°	<0.1	0.7	<0.1	0.2	Very Low
75°-90°	<0.1	0.5	<0.1	0.1	Very Low
90°-105°	<0.1	0.3	<0.1	<0.1	Very Low
105°-120°	<0.1	1.1	<0.1	0.3	Very Low
120°-135°	<0.1	1.6	<0.1	0.4	Very Low
135°-150°	<0.1	3.0	<0.1	0.7	Very Low
150°-165°	0.1	3.9	<0.1	1.0	Very Low
165°-180°	0.2	6.2	<0.1	1.6	Very Low
180°-195°	<0.1	3.0	<0.1	0.7	Very Low
195°-210°	<0.1	1.3	<0.1	0.3	Very Low
210°-225°	<0.1	2.2	<0.1	0.6	Very Low
225°-240°	<0.1	1.3	<0.1	0.3	Very Low
240°-255°	<0.1	0.2	<0.1	<0.1	Very Low
255°-270°	<0.1	1.4	<0.1	0.3	Very Low
270°-285°	<0.1	1.0	<0.1	0.3	Very Low
285°-300°	0.1	3.4	<0.1	0.9	Very Low
300°-315°	0.2	6.6	<0.1	1.6	Very Low
315°-330°	0.1	5.8	<0.1	1.5	Very Low
330°-345°	0.3	10.0	<0.1	2.5	Very Low
345°-360°	0.2	9.3	<0.1	2.3	Very Low



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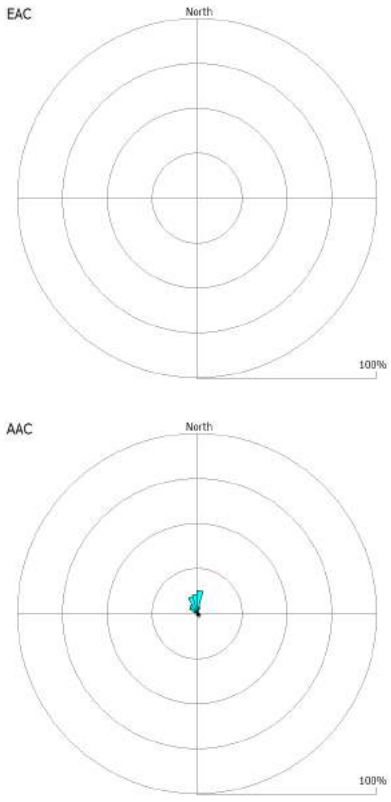
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-04 (No point description given)		
Date Out:	19-Oct-15	**Date In:**	23-Oct-15
Interval*:	4 days	**Our Ref:**	62769 / P-04 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.1
Absolute Area Coverage (AAC%) / interval = 3.0
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.3	13.2	<0.1	3.3	Very Low
15°-30°	<0.1	4.0	<0.1	1.0	Very Low
30°-45°	<0.1	1.3	<0.1	0.3	Very Low
45°-60°	<0.1	1.2	<0.1	0.3	Very Low
60°-75°	<0.1	1.2	<0.1	0.3	Very Low
75°-90°	<0.1	1.4	<0.1	0.3	Very Low
90°-105°	<0.1	1.3	<0.1	0.3	Very Low
105°-120°	<0.1	2.3	<0.1	0.6	Very Low
120°-135°	<0.1	2.4	<0.1	0.6	Very Low
135°-150°	<0.1	2.8	<0.1	0.7	Very Low
150°-165°	<0.1	1.6	<0.1	0.4	Very Low
165°-180°	<0.1	0.7	<0.1	0.2	Very Low
180°-195°	<0.1	1.3	<0.1	0.3	Very Low
195°-210°	<0.1	0.1	<0.1	<0.1	Very Low
210°-225°	<0.1	0.4	<0.1	0.1	Very Low
225°-240°	<0.1	0.2	<0.1	<0.1	Very Low
240°-255°	<0.1	0.6	<0.1	0.2	Very Low
255°-270°	<0.1	1.0	<0.1	0.3	Very Low
270°-285°	<0.1	0.5	<0.1	0.1	Very Low
285°-300°	<0.1	2.4	<0.1	0.6	Very Low
300°-315°	0.1	5.1	<0.1	1.3	Very Low
315°-330°	0.1	5.9	<0.1	1.5	Very Low
330°-345°	0.2	9.9	<0.1	2.5	Very Low
345°-360°	0.2	10.9	<0.1	2.7	Very Low



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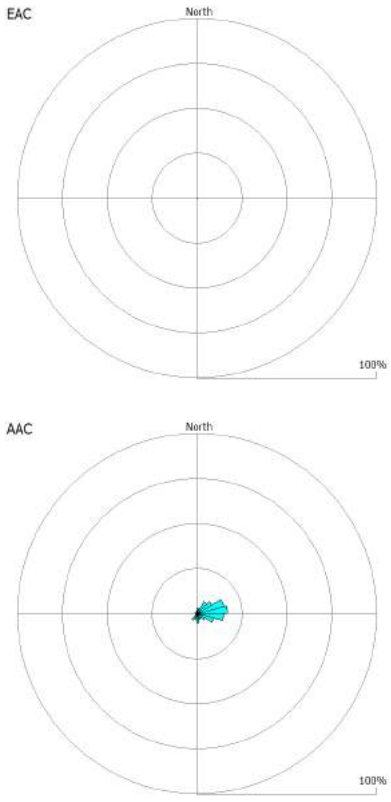
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-05 (No point description given)		
Date Out:	19-Oct-15	**Date In:**	23-Oct-15
Interval*:	4 days	**Our Ref:**	62770 / P-05 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.1
Absolute Area Coverage (AAC%) / interval = 4.9
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.2

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.2	2.9	<0.1	0.7	Very Low
15°-30°	<0.1	3.2	<0.1	0.8	Very Low
30°-45°	0.3	7.8	<0.1	1.9	Very Low
45°-60°	0.3	9.5	<0.1	2.4	Very Low
60°-75°	0.5	15.6	0.1	3.9	Very Low
75°-90°	0.5	16.9	0.1	4.2	Very Low
90°-105°	0.5	14.7	0.1	3.7	Very Low
105°-120°	0.3	9.9	<0.1	2.5	Very Low
120°-135°	0.1	5.2	<0.1	1.3	Very Low
135°-150°	<0.1	3.4	<0.1	0.9	Very Low
150°-165°	0.1	3.6	<0.1	0.9	Very Low
165°-180°	0.1	5.1	<0.1	1.3	Very Low
180°-195°	<0.1	3.7	<0.1	0.9	Very Low
195°-210°	<0.1	3.6	<0.1	0.9	Very Low
210°-225°	0.1	4.4	<0.1	1.1	Very Low
225°-240°	<0.1	1.1	<0.1	0.3	Very Low
240°-255°	<0.1	0.9	<0.1	0.2	Very Low
255°-270°	<0.1	0.9	<0.1	0.2	Very Low
270°-285°	<0.1	1.6	<0.1	0.4	Very Low
285°-300°	<0.1	1.0	<0.1	0.3	Very Low
300°-315°	<0.1	1.1	<0.1	0.3	Very Low
315°-330°	<0.1	0.5	<0.1	0.1	Very Low
330°-345°	<0.1	0.6	<0.1	0.1	Very Low
345°-360°	<0.1	1.3	<0.1	0.3	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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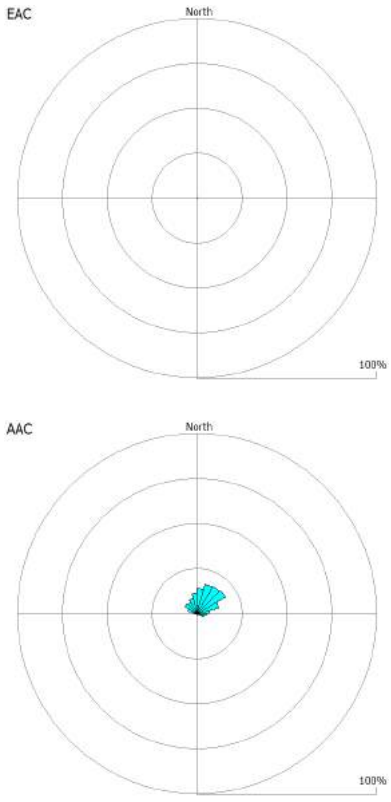
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-06 (No point description given)		
Date Out:	19-Oct-15	**Date In:**	23-Oct-15
Interval*:	4 days	**Our Ref:**	62771 / P-06 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.2
Absolute Area Coverage (AAC%) / interval = 6.2
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.4	14.2	<0.1	3.6	Very Low
15°-30°	0.5	16.9	0.1	4.2	Very Low
30°-45°	0.5	17.7	0.1	4.4	Very Low
45°-60°	0.5	18.3	0.1	4.6	Very Low
60°-75°	0.4	12.6	<0.1	3.1	Very Low
75°-90°	0.2	6.9	<0.1	1.7	Very Low
90°-105°	0.1	5.2	<0.1	1.3	Very Low
105°-120°	<0.1	4.1	<0.1	1.0	Very Low
120°-135°	<0.1	0.7	<0.1	0.2	Very Low
135°-150°	<0.1	1.3	<0.1	0.3	Very Low
150°-165°	<0.1	0.6	<0.1	0.2	Very Low
165°-180°	<0.1	0.6	<0.1	0.2	Very Low
180°-195°	<0.1	0.7	<0.1	0.2	Very Low
195°-210°	<0.1	0.6	<0.1	0.1	Very Low
210°-225°	<0.1	0.4	<0.1	0.1	Very Low
225°-240°	<0.1	0.6	<0.1	0.1	Very Low
240°-255°	<0.1	0.9	<0.1	0.2	Very Low
255°-270°	<0.1	1.6	<0.1	0.4	Very Low
270°-285°	<0.1	3.0	<0.1	0.7	Very Low
285°-300°	0.1	5.4	<0.1	1.3	Very Low
300°-315°	0.2	8.2	<0.1	2.0	Very Low
315°-330°	0.2	7.2	<0.1	1.8	Very Low
330°-345°	0.2	8.7	<0.1	2.2	Very Low
345°-360°	0.3	11.5	<0.1	2.9	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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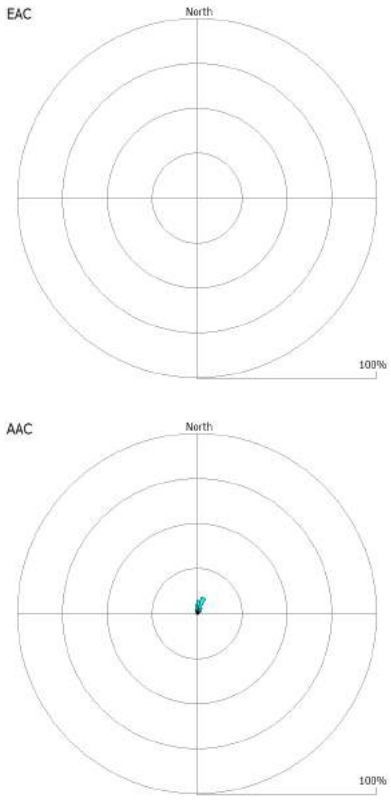
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-07 (No point description given)		
Date Out:	19-Oct-15	**Date In:**	23-Oct-15
Interval*:	4 days	**Our Ref:**	62772 / P-07 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.0
Absolute Area Coverage (AAC%) / interval = 2.0
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.2	7.5	<0.1	1.9	Very Low
15°-30°	0.2	9.4	<0.1	2.4	Very Low
30°-45°	<0.1	4.2	<0.1	1.0	Very Low
45°-60°	<0.1	2.9	<0.1	0.7	Very Low
60°-75°	<0.1	2.0	<0.1	0.5	Very Low
75°-90°	<0.1	0.8	<0.1	0.2	Very Low
90°-105°	<0.1	1.4	<0.1	0.3	Very Low
105°-120°	<0.1	0.5	<0.1	0.1	Very Low
120°-135°	<0.1	0.7	<0.1	0.2	Very Low
135°-150°	<0.1	0.5	<0.1	0.1	Very Low
150°-165°	<0.1	1.0	<0.1	0.3	Very Low
165°-180°	<0.1	0.6	<0.1	0.1	Very Low
180°-195°	<0.1	0.6	<0.1	0.2	Very Low
195°-210°	<0.1	0.8	<0.1	0.2	Very Low
210°-225°	<0.1	0.5	<0.1	0.1	Very Low
225°-240°	<0.1	0.6	<0.1	0.1	Very Low
240°-255°	<0.1	0.5	<0.1	0.1	Very Low
255°-270°	<0.1	0.3	<0.1	<0.1	Very Low
270°-285°	<0.1	0.5	<0.1	0.1	Very Low
285°-300°	<0.1	0.9	<0.1	0.2	Very Low
300°-315°	<0.1	1.1	<0.1	0.3	Very Low
315°-330°	<0.1	1.4	<0.1	0.4	Very Low
330°-345°	<0.1	3.1	<0.1	0.8	Very Low
345°-360°	0.1	5.1	<0.1	1.3	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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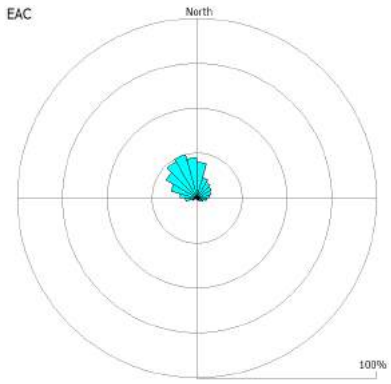
DS100 DIRECTIONAL DUST FLUX REPORT

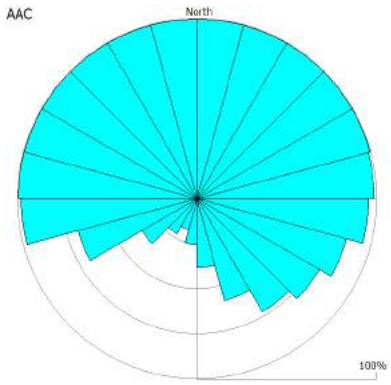
Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-08 (No point description given)		
Date Out:	19-Oct-15	**Date In:**	23-Oct-15
Interval*:	4 days	**Our Ref:**	62773 / P-08 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 8.8
Absolute Area Coverage (AAC%) / interval = 79.1
Effective Area Coverage (EAC%) / day = 2.2
Absolute Area Coverage (AAC%) / day = 19.8

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	20.3	100.0	5.1	25.0	Very High
15°-30°	11.9	100.0	3.0	25.0	Very High
30°-45°	10.0	100.0	2.5	25.0	Very High
45°-60°	9.0	100.0	2.3	25.0	High
60°-75°	8.2	99.9	2.1	25.0	High
75°-90°	7.1	98.8	1.8	24.7	Medium
90°-105°	5.6	95.4	1.4	23.9	Medium
105°-120°	3.8	86.4	0.9	21.6	Medium
120°-135°	2.6	78.6	0.7	19.6	Medium
135°-150°	1.8	72.6	0.5	18.1	Low
150°-165°	1.1	58.9	0.3	14.7	Very Low
165°-180°	0.8	38.4	0.2	9.6	Very Low
180°-195°	0.5	25.7	0.1	6.4	Very Low
195°-210°	0.4	18.1	<0.1	4.5	Very Low
210°-225°	0.6	22.8	0.2	5.7	Very Low
225°-240°	1.2	35.6	0.3	8.9	Very Low
240°-255°	3.1	68.7	0.8	17.2	Medium
255°-270°	6.7	97.9	1.7	24.5	Medium
270°-285°	9.9	100.0	2.5	25.0	High
285°-300°	15.0	100.0	3.8	25.0	Very High
300°-315°	20.4	100.0	5.1	25.0	Very High
315°-330°	23.7	100.0	5.9	25.0	Very High
330°-345°	25.0	100.0	6.3	25.0	Very High
345°-360°	22.8	100.0	5.7	25.0	Very High





The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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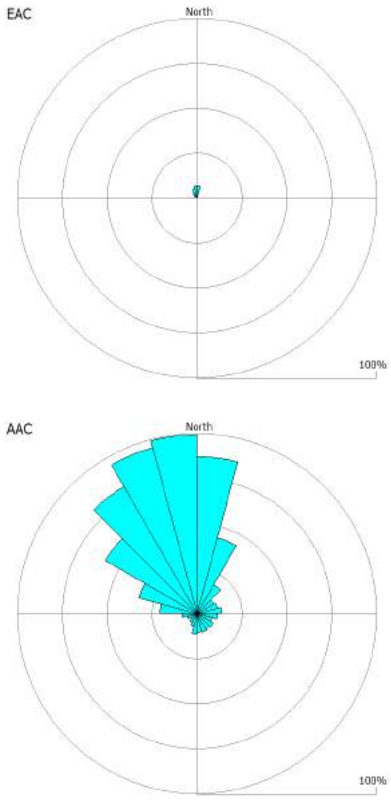
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-01 (No point description given)		
Date Out:	19-Oct-15	**Date In:**	23-Oct-15
Interval*:	4 days	**Our Ref:**	62774 / S-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.3
Absolute Area Coverage (AAC%) / interval = 28.4
Effective Area Coverage (EAC%) / day = 0.3
Absolute Area Coverage (AAC%) / day = 7.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	6.8	87.3	1.7	21.8	Medium
15°-30°	1.6	43.8	0.4	11.0	Very Low
30°-45°	0.5	18.8	0.1	4.7	Very Low
45°-60°	0.2	10.7	<0.1	2.7	Very Low
60°-75°	0.3	11.9	<0.1	3.0	Very Low
75°-90°	0.3	13.6	<0.1	3.4	Very Low
90°-105°	0.3	11.5	<0.1	2.9	Very Low
105°-120°	0.2	8.8	<0.1	2.2	Very Low
120°-135°	0.3	10.5	<0.1	2.6	Very Low
135°-150°	0.2	9.9	<0.1	2.5	Very Low
150°-165°	0.2	10.8	<0.1	2.7	Very Low
165°-180°	0.2	10.5	<0.1	2.6	Very Low
180°-195°	0.3	11.6	<0.1	2.9	Very Low
195°-210°	0.1	7.4	<0.1	1.8	Very Low
210°-225°	0.1	6.0	<0.1	1.5	Very Low
225°-240°	<0.1	4.3	<0.1	1.1	Very Low
240°-255°	0.1	6.0	<0.1	1.5	Very Low
255°-270°	0.2	8.5	<0.1	2.1	Very Low
270°-285°	0.6	21.0	0.1	5.3	Very Low
285°-300°	1.0	33.7	0.2	8.4	Very Low
300°-315°	2.2	59.2	0.6	14.8	Low
315°-330°	3.8	81.7	1.0	20.4	Medium
330°-345°	5.7	95.4	1.4	23.8	Medium
345°-360°	7.0	99.3	1.7	24.8	High



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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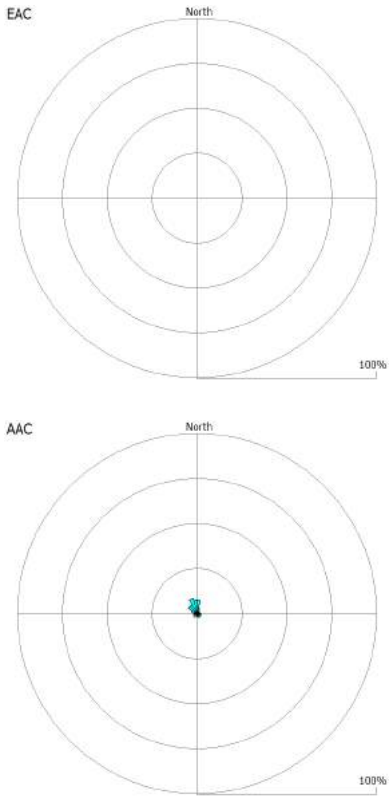
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-02 (No point description given)		
Date Out:	19-Oct-15	**Date In:**	23-Oct-15
Interval*:	4 days	**Our Ref:**	62775 / S-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.1
Absolute Area Coverage (AAC%) / interval = 3.2
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 0.8

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.3	7.8	<0.1	2.0	Very Low
15°-30°	<0.1	3.3	<0.1	0.8	Very Low
30°-45°	<0.1	2.4	<0.1	0.6	Very Low
45°-60°	<0.1	2.4	<0.1	0.6	Very Low
60°-75°	<0.1	1.2	<0.1	0.3	Very Low
75°-90°	<0.1	1.6	<0.1	0.4	Very Low
90°-105°	<0.1	2.3	<0.1	0.6	Very Low
105°-120°	<0.1	2.5	<0.1	0.6	Very Low
120°-135°	<0.1	2.8	<0.1	0.7	Very Low
135°-150°	<0.1	2.7	<0.1	0.7	Very Low
150°-165°	<0.1	2.4	<0.1	0.6	Very Low
165°-180°	<0.1	1.6	<0.1	0.4	Very Low
180°-195°	<0.1	0.5	<0.1	0.1	Very Low
195°-210°	<0.1	0.9	<0.1	0.2	Very Low
210°-225°	<0.1	2.7	<0.1	0.7	Very Low
225°-240°	<0.1	2.7	<0.1	0.7	Very Low
240°-255°	<0.1	1.6	<0.1	0.4	Very Low
255°-270°	<0.1	2.4	<0.1	0.6	Very Low
270°-285°	<0.1	1.9	<0.1	0.5	Very Low
285°-300°	0.1	3.8	<0.1	1.0	Very Low
300°-315°	0.2	5.8	<0.1	1.5	Very Low
315°-330°	0.1	6.0	<0.1	1.5	Very Low
330°-345°	0.2	8.7	<0.1	2.2	Very Low
345°-360°	0.2	7.8	<0.1	1.9	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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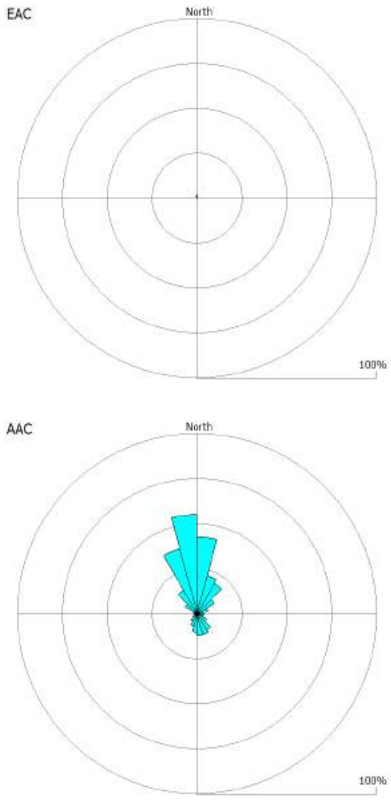
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-03 (No point description given)		
Date Out:	19-Oct-15	**Date In:**	23-Oct-15
Interval*:	4 days	**Our Ref:**	62776 / S-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.4
Absolute Area Coverage (AAC%) / interval = 12.6
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 3.1

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	1.5	42.8	0.4	10.7	Very Low
15°-30°	0.7	22.0	0.2	5.5	Very Low
30°-45°	0.5	19.4	0.1	4.9	Very Low
45°-60°	0.3	11.4	<0.1	2.9	Very Low
60°-75°	0.2	6.2	<0.1	1.6	Very Low
75°-90°	<0.1	3.4	<0.1	0.9	Very Low
90°-105°	0.1	3.6	<0.1	0.9	Very Low
105°-120°	0.1	3.7	<0.1	0.9	Very Low
120°-135°	0.2	6.1	<0.1	1.5	Very Low
135°-150°	0.4	10.7	0.1	2.7	Very Low
150°-165°	0.5	12.2	0.1	3.0	Very Low
165°-180°	0.5	12.2	0.1	3.0	Very Low
180°-195°	0.4	10.5	<0.1	2.6	Very Low
195°-210°	0.3	7.4	<0.1	1.9	Very Low
210°-225°	0.2	5.3	<0.1	1.3	Very Low
225°-240°	<0.1	3.1	<0.1	0.8	Very Low
240°-255°	<0.1	0.8	<0.1	0.2	Very Low
255°-270°	<0.1	1.8	<0.1	0.5	Very Low
270°-285°	<0.1	1.2	<0.1	0.3	Very Low
285°-300°	<0.1	2.6	<0.1	0.7	Very Low
300°-315°	0.2	7.6	<0.1	1.9	Very Low
315°-330°	0.4	15.1	0.1	3.8	Very Low
330°-345°	1.2	37.3	0.3	9.3	Very Low
345°-360°	1.9	55.2	0.5	13.8	Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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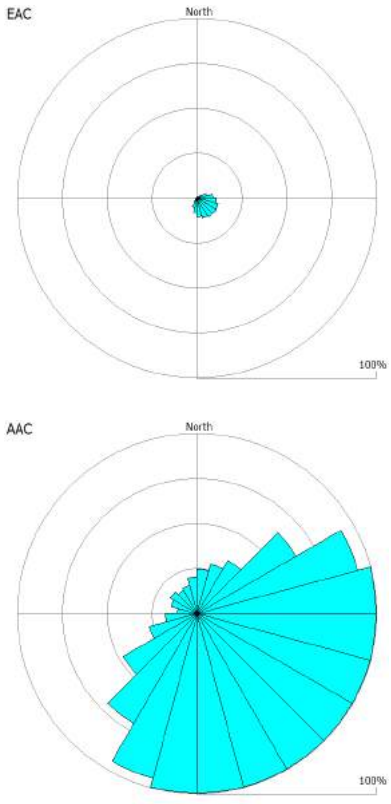
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	A-01 (No point description given)		
Date Out:	18-Jan-16	**Date In:**	22-Jan-16
Interval*:	4 days	**Our Ref:**	64687 / A-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 4.7
Absolute Area Coverage (AAC%) / interval = 58.3
Effective Area Coverage (EAC%) / day = 1.2
Absolute Area Coverage (AAC%) / day = 14.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.8	24.7	0.2	6.2	Very Low
15°-30°	1.0	28.6	0.2	7.1	Very Low
30°-45°	1.2	34.6	0.3	8.6	Very Low
45°-60°	2.5	63.6	0.6	15.9	Low
60°-75°	5.5	92.6	1.4	23.2	Medium
75°-90°	9.0	100.0	2.2	25.0	High
90°-105°	11.0	100.0	2.8	25.0	Very High
105°-120°	12.4	100.0	3.1	25.0	Very High
120°-135°	12.6	100.0	3.1	25.0	Very High
135°-150°	12.3	100.0	3.1	25.0	Very High
150°-165°	11.6	100.0	2.9	25.0	Very High
165°-180°	10.4	100.0	2.6	25.0	High
180°-195°	8.4	99.7	2.1	24.9	High
195°-210°	5.7	94.9	1.4	23.7	Medium
210°-225°	2.9	70.6	0.7	17.7	Medium
225°-240°	1.7	47.5	0.4	11.9	Very Low
240°-255°	0.8	27.8	0.2	6.9	Very Low
255°-270°	0.5	17.8	0.1	4.4	Very Low
270°-285°	0.3	11.2	<0.1	2.8	Very Low
285°-300°	0.4	15.3	<0.1	3.8	Very Low
300°-315°	0.4	17.3	0.1	4.3	Very Low
315°-330°	0.3	15.2	<0.1	3.8	Very Low
330°-345°	0.4	16.4	<0.1	4.1	Very Low
345°-360°	0.6	20.4	0.1	5.1	Very Low



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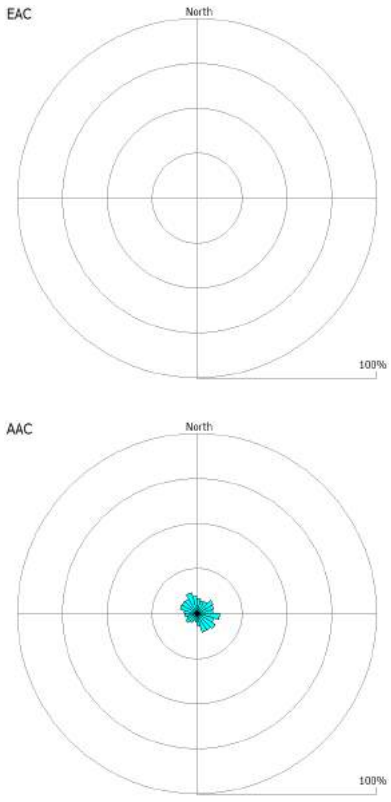
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-01 (No point description given)		
Date Out:	18-Jan-16	**Date In:**	22-Jan-16
Interval*:	4 days	**Our Ref:**	64688 / P-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.2
Absolute Area Coverage (AAC%) / interval = 8.8
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 2.2

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	0.2	8.2	<0.1	2.1	Very Low
15°-30°	0.2	7.2	<0.1	1.8	Very Low
30°-45°	0.2	8.0	<0.1	2.0	Very Low
45°-60°	0.2	10.6	<0.1	2.6	Very Low
60°-75°	0.3	9.9	<0.1	2.5	Very Low
75°-90°	0.2	9.0	<0.1	2.2	Very Low
90°-105°	0.3	12.8	<0.1	3.2	Very Low
105°-120°	0.2	9.9	<0.1	2.5	Very Low
120°-135°	0.3	12.1	<0.1	3.0	Very Low
135°-150°	0.2	10.9	<0.1	2.7	Very Low
150°-165°	0.2	10.9	<0.1	2.7	Very Low
165°-180°	0.1	6.7	<0.1	1.7	Very Low
180°-195°	<0.1	4.9	<0.1	1.2	Very Low
195°-210°	<0.1	4.2	<0.1	1.1	Very Low
210°-225°	<0.1	5.7	<0.1	1.4	Very Low
225°-240°	<0.1	7.2	<0.1	1.8	Very Low
240°-255°	<0.1	6.1	<0.1	1.5	Very Low
255°-270°	0.1	6.9	<0.1	1.7	Very Low
270°-285°	0.1	7.3	<0.1	1.8	Very Low
285°-300°	0.2	10.0	<0.1	2.5	Very Low
300°-315°	0.2	9.7	<0.1	2.4	Very Low
315°-330°	0.2	9.5	<0.1	2.4	Very Low
330°-345°	0.3	12.4	<0.1	3.1	Very Low
345°-360°	0.2	10.1	<0.1	2.5	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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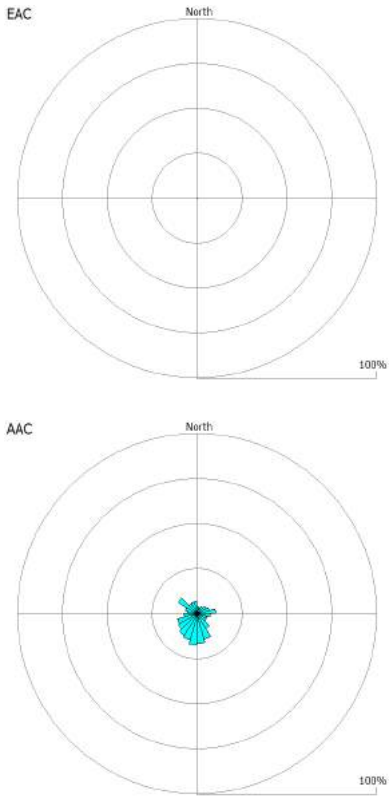
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-02 (No point description given)		
Date Out:	18-Jan-16	**Date In:**	22-Jan-16
Interval*:	4 days	**Our Ref:**	64689 / P-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.2
Absolute Area Coverage (AAC%) / interval = 9.2
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 2.3

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	<0.1	4.0	<0.1	1.0	Very Low
15°-30°	<0.1	3.8	<0.1	1.0	Very Low
30°-45°	<0.1	4.6	<0.1	1.2	Very Low
45°-60°	<0.1	6.0	<0.1	1.5	Very Low
60°-75°	0.1	7.1	<0.1	1.8	Very Low
75°-90°	0.1	10.6	<0.1	2.7	Very Low
90°-105°	0.1	7.3	<0.1	1.8	Very Low
105°-120°	<0.1	5.9	<0.1	1.5	Very Low
120°-135°	<0.1	5.8	<0.1	1.5	Very Low
135°-150°	0.1	9.4	<0.1	2.3	Very Low
150°-165°	0.3	14.7	<0.1	3.7	Very Low
165°-180°	0.3	16.7	<0.1	4.2	Very Low
180°-195°	0.4	17.6	<0.1	4.4	Very Low
195°-210°	0.3	15.1	<0.1	3.8	Very Low
210°-225°	0.3	14.2	<0.1	3.5	Very Low
225°-240°	0.2	12.4	<0.1	3.1	Very Low
240°-255°	0.2	11.8	<0.1	2.9	Very Low
255°-270°	0.1	7.4	<0.1	1.9	Very Low
270°-285°	<0.1	5.6	<0.1	1.4	Very Low
285°-300°	<0.1	7.1	<0.1	1.8	Very Low
300°-315°	0.2	12.4	<0.1	3.1	Very Low
315°-330°	<0.1	6.6	<0.1	1.6	Very Low
330°-345°	<0.1	6.8	<0.1	1.7	Very Low
345°-360°	<0.1	7.1	<0.1	1.8	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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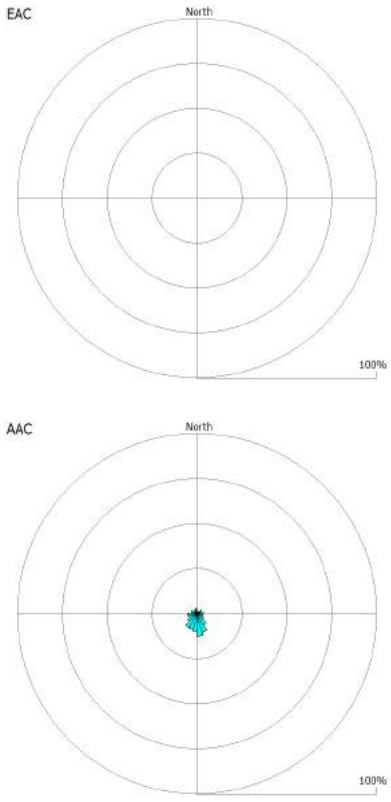
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-03 (No point description given)		
Date Out:	18-Jan-16	**Date In:**	22-Jan-16
Interval*:	4 days	**Our Ref:**	64690 / P-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.1
Absolute Area Coverage (AAC%) / interval = 4.9
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.2

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	<0.1	1.5	<0.1	0.4	Very Low
15°-30°	<0.1	0.8	<0.1	0.2	Very Low
30°-45°	<0.1	1.5	<0.1	0.4	Very Low
45°-60°	<0.1	3.4	<0.1	0.8	Very Low
60°-75°	<0.1	2.2	<0.1	0.5	Very Low
75°-90°	<0.1	3.6	<0.1	0.9	Very Low
90°-105°	<0.1	2.9	<0.1	0.7	Very Low
105°-120°	<0.1	3.3	<0.1	0.8	Very Low
120°-135°	<0.1	4.5	<0.1	1.1	Very Low
135°-150°	0.2	7.3	<0.1	1.8	Very Low
150°-165°	0.2	10.8	<0.1	2.7	Very Low
165°-180°	0.3	12.7	<0.1	3.2	Very Low
180°-195°	0.2	10.2	<0.1	2.6	Very Low
195°-210°	0.3	9.5	<0.1	2.4	Very Low
210°-225°	0.2	9.2	<0.1	2.3	Very Low
225°-240°	0.1	6.1	<0.1	1.5	Very Low
240°-255°	<0.1	4.9	<0.1	1.2	Very Low
255°-270°	0.1	5.4	<0.1	1.3	Very Low
270°-285°	<0.1	3.5	<0.1	0.9	Very Low
285°-300°	<0.1	3.8	<0.1	1.0	Very Low
300°-315°	<0.1	1.7	<0.1	0.4	Very Low
315°-330°	<0.1	2.8	<0.1	0.7	Very Low
330°-345°	<0.1	3.1	<0.1	0.8	Very Low
345°-360°	<0.1	3.3	<0.1	0.8	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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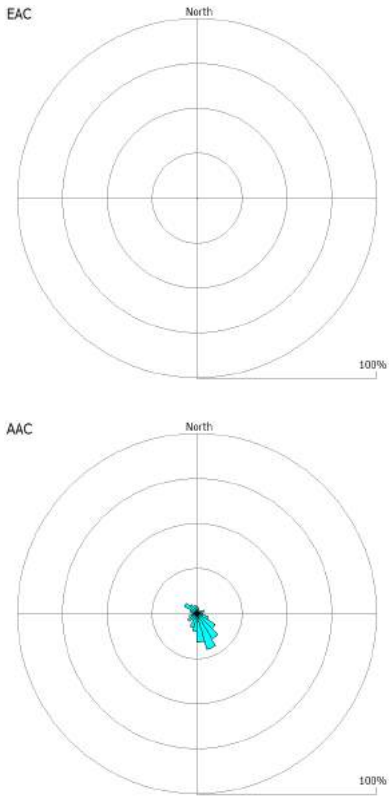
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-04 (No point description given)		
Date Out:	18-Jan-16	**Date In:**	22-Jan-16
Interval*:	4 days	**Our Ref:**	64691 / P-04 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.1
Absolute Area Coverage (AAC%) / interval = 6.7
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	<0.1	3.6	<0.1	0.9	Very Low
15°-30°	<0.1	2.7	<0.1	0.7	Very Low
30°-45°	<0.1	1.1	<0.1	0.3	Very Low
45°-60°	<0.1	2.7	<0.1	0.7	Very Low
60°-75°	<0.1	4.6	<0.1	1.2	Very Low
75°-90°	<0.1	2.4	<0.1	0.6	Very Low
90°-105°	<0.1	3.3	<0.1	0.8	Very Low
105°-120°	0.1	6.5	<0.1	1.6	Very Low
120°-135°	0.3	12.0	<0.1	3.0	Very Low
135°-150°	0.4	16.5	<0.1	4.1	Very Low
150°-165°	0.5	20.8	0.1	5.2	Very Low
165°-180°	0.3	16.1	<0.1	4.0	Very Low
180°-195°	0.2	10.2	<0.1	2.5	Very Low
195°-210°	0.2	8.1	<0.1	2.0	Very Low
210°-225°	<0.1	4.6	<0.1	1.1	Very Low
225°-240°	<0.1	6.1	<0.1	1.5	Very Low
240°-255°	<0.1	4.7	<0.1	1.2	Very Low
255°-270°	<0.1	2.6	<0.1	0.6	Very Low
270°-285°	<0.1	3.3	<0.1	0.8	Very Low
285°-300°	<0.1	4.4	<0.1	1.1	Very Low
300°-315°	0.2	8.4	<0.1	2.1	Very Low
315°-330°	<0.1	6.1	<0.1	1.5	Very Low
330°-345°	<0.1	4.7	<0.1	1.2	Very Low
345°-360°	<0.1	4.5	<0.1	1.1	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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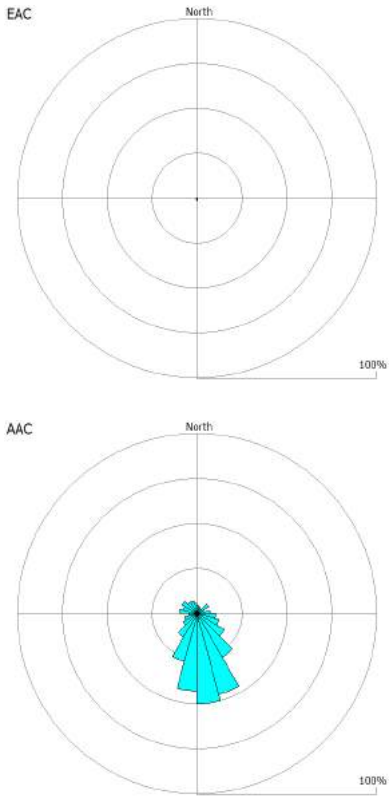
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-05 (No point description given)		
Date Out:	18-Jan-16	**Date In:**	22-Jan-16
Interval*:	4 days	**Our Ref:**	64692 / P-05 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.4
Absolute Area Coverage (AAC%) / interval = 14.7
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 3.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	<0.1	4.6	<0.1	1.1	Very Low
15°-30°	<0.1	3.9	<0.1	1.0	Very Low
30°-45°	<0.1	3.3	<0.1	0.8	Very Low
45°-60°	0.1	7.8	<0.1	2.0	Very Low
60°-75°	<0.1	4.2	<0.1	1.1	Very Low
75°-90°	0.1	7.4	<0.1	1.8	Very Low
90°-105°	0.2	10.5	<0.1	2.6	Very Low
105°-120°	0.3	12.8	<0.1	3.2	Very Low
120°-135°	0.4	17.7	<0.1	4.4	Very Low
135°-150°	0.8	28.2	0.2	7.0	Very Low
150°-165°	1.4	46.8	0.3	11.7	Very Low
165°-180°	1.5	50.3	0.4	12.6	Very Low
180°-195°	1.3	42.9	0.3	10.7	Very Low
195°-210°	0.8	27.5	0.2	6.9	Very Low
210°-225°	0.3	15.1	<0.1	3.8	Very Low
225°-240°	0.2	9.3	<0.1	2.3	Very Low
240°-255°	0.1	7.5	<0.1	1.9	Very Low
255°-270°	<0.1	5.0	<0.1	1.2	Very Low
270°-285°	0.2	10.1	<0.1	2.5	Very Low
285°-300°	0.1	8.2	<0.1	2.0	Very Low
300°-315°	0.2	10.0	<0.1	2.5	Very Low
315°-330°	0.1	7.7	<0.1	1.9	Very Low
330°-345°	<0.1	7.2	<0.1	1.8	Very Low
345°-360°	<0.1	5.9	<0.1	1.5	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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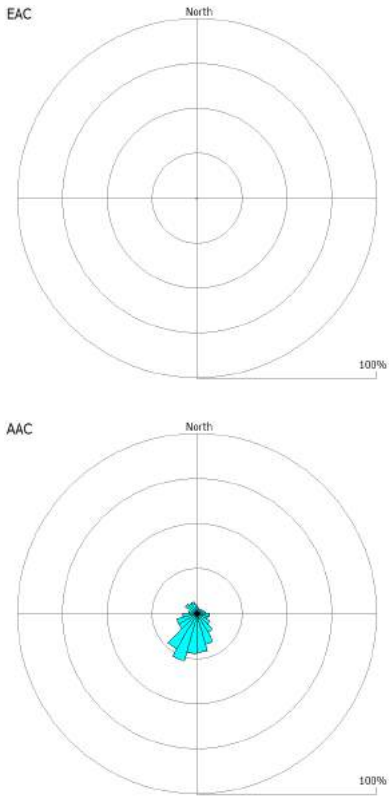
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-06 (No point description given)		
Date Out:	18-Jan-16	**Date In:**	22-Jan-16
Interval*:	4 days	**Our Ref:**	64693 / P-06 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.2
Absolute Area Coverage (AAC%) / interval = 9.8
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 2.5

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	<0.1	3.7	<0.1	0.9	Very Low
15°-30°	<0.1	2.3	<0.1	0.6	Very Low
30°-45°	<0.1	2.9	<0.1	0.7	Very Low
45°-60°	<0.1	3.9	<0.1	1.0	Very Low
60°-75°	<0.1	4.2	<0.1	1.0	Very Low
75°-90°	<0.1	4.9	<0.1	1.2	Very Low
90°-105°	0.1	6.9	<0.1	1.7	Very Low
105°-120°	<0.1	6.3	<0.1	1.6	Very Low
120°-135°	0.1	8.6	<0.1	2.1	Very Low
135°-150°	0.3	12.3	<0.1	3.1	Very Low
150°-165°	0.4	17.6	0.1	4.4	Very Low
165°-180°	0.6	21.8	0.1	5.4	Very Low
180°-195°	0.6	22.3	0.2	5.6	Very Low
195°-210°	0.7	27.2	0.2	6.8	Very Low
210°-225°	0.6	23.1	0.2	5.8	Very Low
225°-240°	0.2	12.0	<0.1	3.0	Very Low
240°-255°	0.3	12.0	<0.1	3.0	Very Low
255°-270°	0.2	8.1	<0.1	2.0	Very Low
270°-285°	<0.1	4.8	<0.1	1.2	Very Low
285°-300°	<0.1	4.8	<0.1	1.2	Very Low
300°-315°	0.1	7.5	<0.1	1.9	Very Low
315°-330°	<0.1	6.4	<0.1	1.6	Very Low
330°-345°	0.1	6.9	<0.1	1.7	Very Low
345°-360°	<0.1	5.0	<0.1	1.3	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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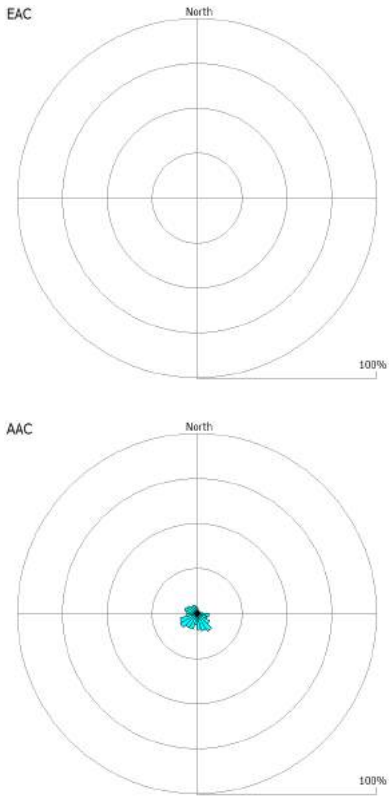
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-07 (No point description given)		
Date Out:	18-Jan-16	**Date In:**	22-Jan-16
Interval*:	4 days	**Our Ref:**	64694 / P-07 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.1
Absolute Area Coverage (AAC%) / interval = 6.3
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	<0.1	3.0	<0.1	0.8	Very Low
15°-30°	<0.1	2.1	<0.1	0.5	Very Low
30°-45°	<0.1	2.3	<0.1	0.6	Very Low
45°-60°	<0.1	1.5	<0.1	0.4	Very Low
60°-75°	<0.1	2.5	<0.1	0.6	Very Low
75°-90°	<0.1	3.2	<0.1	0.8	Very Low
90°-105°	0.1	6.6	<0.1	1.6	Very Low
105°-120°	<0.1	5.9	<0.1	1.5	Very Low
120°-135°	0.2	8.1	<0.1	2.0	Very Low
135°-150°	0.3	11.6	<0.1	2.9	Very Low
150°-165°	0.2	10.3	<0.1	2.6	Very Low
165°-180°	0.2	9.0	<0.1	2.3	Very Low
180°-195°	<0.1	6.2	<0.1	1.6	Very Low
195°-210°	0.2	9.0	<0.1	2.3	Very Low
210°-225°	0.2	9.0	<0.1	2.3	Very Low
225°-240°	0.2	10.9	<0.1	2.7	Very Low
240°-255°	0.2	9.8	<0.1	2.4	Very Low
255°-270°	<0.1	6.0	<0.1	1.5	Very Low
270°-285°	<0.1	6.0	<0.1	1.5	Very Low
285°-300°	0.1	7.3	<0.1	1.8	Very Low
300°-315°	<0.1	6.2	<0.1	1.6	Very Low
315°-330°	<0.1	5.2	<0.1	1.3	Very Low
330°-345°	<0.1	5.0	<0.1	1.3	Very Low
345°-360°	<0.1	4.1	<0.1	1.0	Very Low



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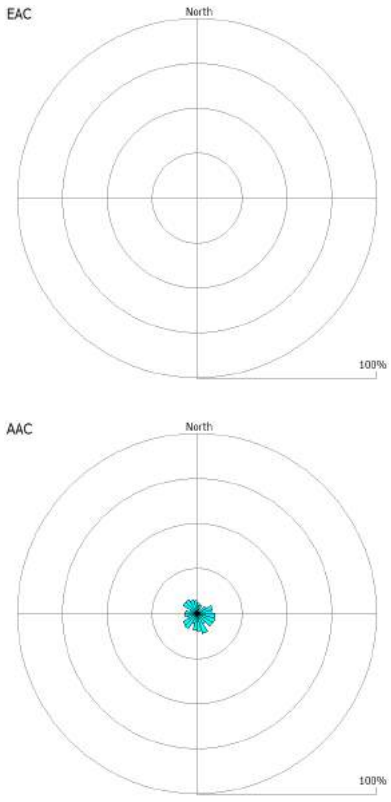
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	P-08 (No point description given)		
Date Out:	18-Jan-16	**Date In:**	22-Jan-16
Interval*:	4 days	**Our Ref:**	64695 / P-08 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.1
Absolute Area Coverage (AAC%) / interval = 7.8
Effective Area Coverage (EAC%) / day = 0.0
Absolute Area Coverage (AAC%) / day = 1.9

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	<0.1	5.9	<0.1	1.5	Very Low
15°-30°	<0.1	5.2	<0.1	1.3	Very Low
30°-45°	<0.1	2.5	<0.1	0.6	Very Low
45°-60°	0.1	5.9	<0.1	1.5	Very Low
60°-75°	0.2	9.2	<0.1	2.3	Very Low
75°-90°	0.1	8.4	<0.1	2.1	Very Low
90°-105°	0.2	10.2	<0.1	2.6	Very Low
105°-120°	0.2	10.6	<0.1	2.6	Very Low
120°-135°	0.2	9.7	<0.1	2.4	Very Low
135°-150°	0.1	6.7	<0.1	1.7	Very Low
150°-165°	0.2	11.7	<0.1	2.9	Very Low
165°-180°	0.2	9.7	<0.1	2.4	Very Low
180°-195°	0.2	9.5	<0.1	2.4	Very Low
195°-210°	<0.1	6.0	<0.1	1.5	Very Low
210°-225°	0.2	9.7	<0.1	2.4	Very Low
225°-240°	0.2	9.0	<0.1	2.3	Very Low
240°-255°	<0.1	5.6	<0.1	1.4	Very Low
255°-270°	0.1	7.0	<0.1	1.8	Very Low
270°-285°	0.1	6.7	<0.1	1.7	Very Low
285°-300°	<0.1	4.0	<0.1	1.0	Very Low
300°-315°	0.2	9.1	<0.1	2.3	Very Low
315°-330°	0.2	9.0	<0.1	2.2	Very Low
330°-345°	0.1	7.9	<0.1	2.0	Very Low
345°-360°	<0.1	7.2	<0.1	1.8	Very Low



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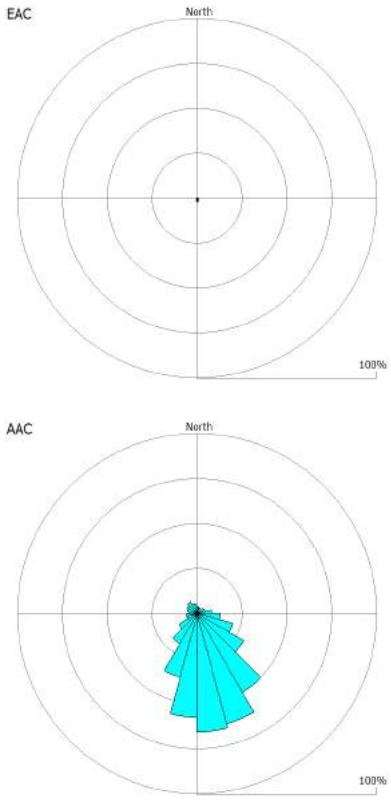
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-01 (No point description given)		
Date Out:	18-Jan-16	**Date In:**	22-Jan-16
Interval*:	4 days	**Our Ref:**	64696 / S-01 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.5
Absolute Area Coverage (AAC%) / interval = 18.5
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 4.6

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	<0.1	4.3	<0.1	1.1	Very Low
15°-30°	<0.1	3.6	<0.1	0.9	Very Low
30°-45°	<0.1	2.3	<0.1	0.6	Very Low
45°-60°	<0.1	4.3	<0.1	1.1	Very Low
60°-75°	<0.1	4.9	<0.1	1.2	Very Low
75°-90°	0.2	8.3	<0.1	2.1	Very Low
90°-105°	0.3	13.0	<0.1	3.3	Very Low
105°-120°	0.5	21.0	0.1	5.2	Very Low
120°-135°	0.8	30.2	0.2	7.6	Very Low
135°-150°	1.7	50.6	0.4	12.7	Very Low
150°-165°	2.3	63.2	0.6	15.8	Low
165°-180°	2.4	65.8	0.6	16.5	Low
180°-195°	1.9	57.8	0.5	14.4	Low
195°-210°	1.1	36.5	0.3	9.1	Very Low
210°-225°	0.4	19.5	0.1	4.9	Very Low
225°-240°	0.2	11.9	<0.1	3.0	Very Low
240°-255°	<0.1	6.1	<0.1	1.5	Very Low
255°-270°	<0.1	5.8	<0.1	1.4	Very Low
270°-285°	<0.1	4.4	<0.1	1.1	Very Low
285°-300°	<0.1	5.8	<0.1	1.5	Very Low
300°-315°	<0.1	6.4	<0.1	1.6	Very Low
315°-330°	0.1	7.6	<0.1	1.9	Very Low
330°-345°	<0.1	5.7	<0.1	1.4	Very Low
345°-360°	<0.1	5.2	<0.1	1.3	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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Dust Consultancy and Dust Monitoring Services

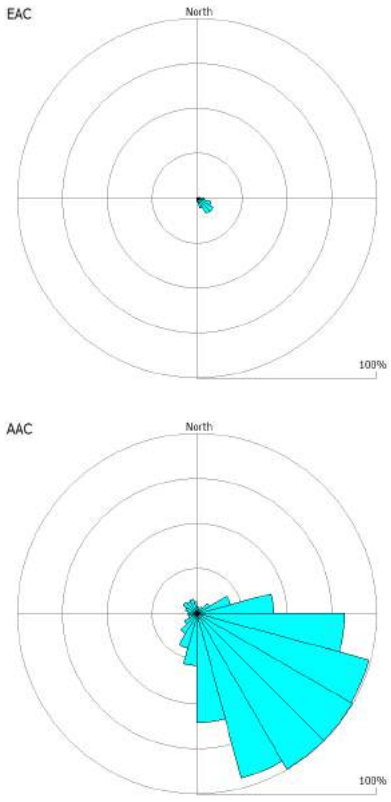
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-02 (No point description given)		
Date Out:	18-Jan-16	**Date In:**	22-Jan-16
Interval*:	4 days	**Our Ref:**	64697 / S-02 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 1.9
Absolute Area Coverage (AAC%) / interval = 31.0
Effective Area Coverage (EAC%) / day = 0.5
Absolute Area Coverage (AAC%) / day = 7.7

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	<0.1	4.2	<0.1	1.0	Very Low
15°-30°	<0.1	2.5	<0.1	0.6	Very Low
30°-45°	<0.1	4.6	<0.1	1.2	Very Low
45°-60°	0.2	8.0	<0.1	2.0	Very Low
60°-75°	0.6	19.4	0.1	4.9	Very Low
75°-90°	1.5	42.6	0.4	10.7	Very Low
90°-105°	4.2	82.3	1.0	20.6	Medium
105°-120°	7.9	99.1	2.0	24.8	High
120°-135°	10.7	100.0	2.7	25.0	High
135°-150°	10.2	100.0	2.6	25.0	High
150°-165°	6.0	94.8	1.5	23.7	Medium
165°-180°	2.3	60.6	0.6	15.2	Low
180°-195°	0.9	29.3	0.2	7.3	Very Low
195°-210°	0.5	20.1	0.1	5.0	Very Low
210°-225°	0.2	13.0	<0.1	3.2	Very Low
225°-240°	0.1	8.4	<0.1	2.1	Very Low
240°-255°	<0.1	5.2	<0.1	1.3	Very Low
255°-270°	<0.1	5.1	<0.1	1.3	Very Low
270°-285°	<0.1	5.3	<0.1	1.3	Very Low
285°-300°	<0.1	6.9	<0.1	1.7	Very Low
300°-315°	0.1	9.1	<0.1	2.3	Very Low
315°-330°	<0.1	8.1	<0.1	2.0	Very Low
330°-345°	0.1	8.5	<0.1	2.1	Very Low
345°-360°	<0.1	6.5	<0.1	1.6	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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DustScan Ltd
Dust Consultancy and Dust Monitoring Services

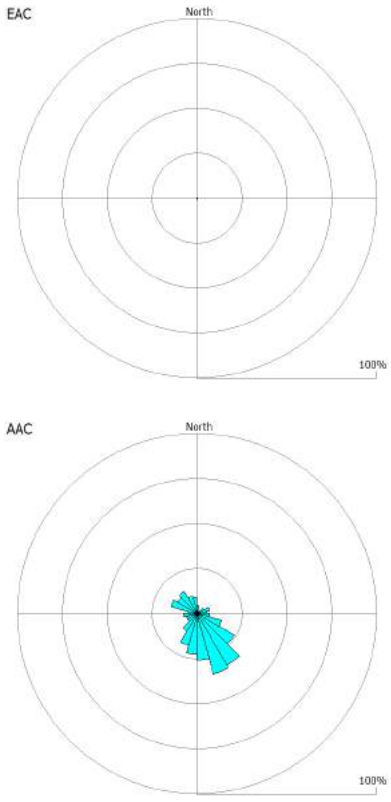
DS100 DIRECTIONAL DUST FLUX REPORT

Client:	Schnitzer Steel Industries Inc.	**Site:**	Portland
Point:	S-03 (No point description given)		
Date Out:	18-Jan-16	**Date In:**	22-Jan-16
Interval*:	4 days	**Our Ref:**	64698 / S-03 / ZSSPORTLAND

DIRECTIONAL DUST FLUX DATA

Effective Area Coverage (EAC%) / interval = 0.3
Absolute Area Coverage (AAC%) / interval = 12.7
Effective Area Coverage (EAC%) / day = 0.1
Absolute Area Coverage (AAC%) / day = 3.2

Segment	EAC% /Interval	AAC% /Interval	EAC% /Day	AAC% /Day	Dust Impact Risk
00°-15°	<0.1	4.5	<0.1	1.1	Very Low
15°-30°	<0.1	2.0	<0.1	0.5	Very Low
30°-45°	<0.1	1.3	<0.1	0.3	Very Low
45°-60°	<0.1	4.4	<0.1	1.1	Very Low
60°-75°	0.2	7.2	<0.1	1.8	Very Low
75°-90°	0.1	5.6	<0.1	1.4	Very Low
90°-105°	0.1	6.9	<0.1	1.7	Very Low
105°-120°	0.4	14.2	<0.1	3.6	Very Low
120°-135°	0.6	24.0	0.2	6.0	Very Low
135°-150°	1.0	33.5	0.2	8.4	Very Low
150°-165°	1.1	34.9	0.3	8.7	Very Low
165°-180°	0.7	26.0	0.2	6.5	Very Low
180°-195°	0.6	22.7	0.2	5.7	Very Low
195°-210°	0.4	18.4	0.1	4.6	Very Low
210°-225°	0.2	11.3	<0.1	2.8	Very Low
225°-240°	0.1	6.4	<0.1	1.6	Very Low
240°-255°	0.1	6.2	<0.1	1.5	Very Low
255°-270°	0.1	7.8	<0.1	1.9	Very Low
270°-285°	<0.1	5.3	<0.1	1.3	Very Low
285°-300°	0.2	15.1	<0.1	3.8	Very Low
300°-315°	0.2	12.6	<0.1	3.1	Very Low
315°-330°	0.3	14.5	<0.1	3.6	Very Low
330°-345°	0.2	10.3	<0.1	2.6	Very Low
345°-360°	0.2	8.9	<0.1	2.2	Very Low



The rose diagrams represent the soiling (EAC) and presence (AAC) of dust for each 15 degree arc per sampling interval.

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Basin 18 Supplemental Storm Water Sampling and Analysis Data
October 13, 2016 Sampling Event, Source Control Evaluation,
Burgard Industrial Park, Portland, Oregon
Rieke Consulting Services, LLC, 2016 (Revised 2017)

RCS RIEKE CONSULTING SERVICES, LLC

Basin 18 Supplemental Storm Water Sampling and Analysis Data October 13, 2016 Sampling Event Source Control Evaluation Burgard Industrial Park Portland, Oregon

TO: Ray Hoy/Oregon DEQ

CC: Jim Orr/Oregon DEQ
Eva DeMaria/EPA
Sean Sheldrake/EPA
Mat Cusma/Schnitzer
Mark Bartee/Schnitzer

FROM: Ross Rieke/RCS

DATE: December 29, 2016 (Revised April 17, 2017)

This memorandum presents the results of the October 13, 2016 storm water sampling and analysis performed at Basin 18 at the Burgard Industrial Park (BIP) in Portland, Oregon (Figure 1, Figure 2). The storm water sampling and analysis was performed in general accordance with the May 24, 2016 (Revised August 10, 2016), *Basin 18 Supplemental Sampling and Analysis Plan* (SSAP). The Basin 18 SSAP was revised from the original May 24, 2016 SSAP based on comments received from the Oregon Department of Environmental Quality (DEQ) during an August 8, 2016 meeting. DEQ provided conditional approval of the May 24, 2016 SSAP conditioned on the revisions provided in the revised Basin 18 SSAP.

A previous version of this report used incorrect units for PCB congener and PCB homolog concentrations when presenting the October 13, 2016 sample results in Table 3, resulting in an overstatement of the PCB concentrations. Table 3 included with this revised report has been revised to show the correct PCB concentrations for these samples.

Basin 18 Description

Basin 18 consists of an approximately 85-acre area on the east side of the BIP. Figure 3 shows the approximate boundaries of Basin 18 and a summary of the primary storm water drainage features discharging to Outfall 18. The Basin 18 boundaries are based on site topography, observations made during rainfall events, and the drainage basins shown in historical Storm Water Pollution Prevention and Control (SWPC) plans prepared by the site operators within Basin 18.

Only about 25 acres of the Basin 18 area is within the BIP as defined in the 2000 Voluntary Agreement between Schnitzer and the Oregon DEQ. Basin 18 areas outside the BIP include:

- Northwest Pipe property (about 26 acres);
- Dunkin & Bush property (<1 acre);
- N. Sever Road (<1 acre);

- PGE Substation property (about 6 acres);
- Lampros property (about 25 acres); and
- City of Portland Burgard Road (about 2 acres).

Thus, about 70 percent of the area drained by Outfall 18 is not on the BIP site subject to the Voluntary Agreement between Schnitzer and DEQ for the source control evaluation work.

Activities occurring on the BIP portion of Basin 18 include vehicle traffic on Burgard Way. Most of the southern portion of Basin 18 within the BIP is used by Northwest Pipe to store pipe and material inventory. Four buildings used for light manufacturing are located in the central portion of Basin 18 within the BIP. Figure 4 shows the paved areas within Basin 18.

The current Basin 18 sampling activities are focused toward the Dunkin & Bush (D&B) property and the portion of Basin 18 owned by Burgard Equities LLC and managed by Felton Management Corp (Felton Property). Figure 2 shows these areas of Basin 18.

D&B Property

The D&B Property is about 0.65 acres, level, and is approximately 40 percent covered by buildings or pavement, with a predominantly compacted gravel yard, a small landscaped area north of the office, and narrow landscaped strips along the northeast and southern edges of the Property (Figure 5). The D&B Property is used to support offsite painting services. Painting supplies and equipment, including paint, are stored on the D&B Property. Paint is stored under cover in secondary containment.

Source control measures performed by Dunkin & Bush consist of ongoing housekeeping, including use of secondary containment and covering materials when not in use. Use of secondary containment and storage of paints under cover greatly reduce the potential for paint-associated COIs from entering the storm water runoff. Dunkin & Bush also paved a portion of their storage lot in 2016 to reduce solids entering the storm water system.

Felton Property

The Felton Property is about 20 acres, level (except along the eastern and portion of the southern perimeters), and is about 70 percent paved (Figure 6).

There are four tenants on the portion of the Felton Property being assessed.

- NW Pipe leases about 7 acres in the southern portion of the Felton Property and uses the partially paved area to store large-diameter “finished” (coated and sealed) steel pipe on unpaved (south) and paved (southwest) surfaces. NW Pipe has obtained a storm water “No Exposure Certificate” from the City of Portland Bureau of Environmental Services for this storage area.
- IRC Aluminum leases the western building in the northern portion of the Felton Property. IRC uses a high pressure water jet with garnet to cut metal in a closed-loop system. Cutting water goes through a solids settling basin then is discharged to the storm water system. Garnet is reclaimed from the solids settling basin and is recycled. All operations and waste storage are performed inside and all outside storage is covered.
- Western Machine Works leases the center building in the northern portion of the Felton Property. Western Machine Works performs repair and maintenance of large equipment used in the pulp, paper and wind power industries. A wash pad on the west side of the building is bermed and all waste water is collected. The collected waste water is treated with

filtration prior to being discharged to the sanitary sewer. Western Machine has obtained a storm water "No Exposure Certificate" from the City of Portland Bureau of Environmental Services.

- Pacific Leasing/Western Truck Center leases the eastern building in the northern portion of the Felton Property and uses the building to perform truck maintenance. Truck maintenance activities are performed inside the building. Occasionally, pressure-washing is performed outside of the southeast corner by a contractor. The contractor collects all waste wash water and removes the waste water from the site. Two catch basins are located under cover in the southeast corner of the building. Vehicle storage and, possibly, light vehicle maintenance appear to occur in this area.

NW Pipe also leases an area to the southwest directly south of their facility. NW Pipe is performing a remedial investigation/source control evaluation with DEQ in this area and this area is not addressed in the Basin 18 SSAP.

Current runon to the Felton Property appears to be limited to localized flow off of vegetated slopes along the eastern and southern boundaries of the Felton Property (Figure 6). Historically, large flows ran on to the southeast portion of the Felton Property from Burgard Road and the Northwest Container Services property to the east. The flows were of sufficient magnitude to routinely deposit offsite sediment on to the Felton Property and into the Felton Property catch basins. Samples of this runon water were collected in January 2006 (see Appendix A of the April 13, 2007 *Source Control Evaluation Report, Burgard Industrial Park*) and in December 2012 (see Table 3). The sample results noted polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), dioxins, and metals. Reconstruction of Burgard Road in 2014 east of the Felton Property eliminated this runon.

Felton periodically inspects the properties to ensure that tenants implement proper BMPs. BMPs include minimizing or eliminating outside operations or material storage. Exterior storage of metal scrap is discouraged. Tenants are aware of the risk of any facility discharge outside to the parking lot. Felton has had the paved surfaces swept and the two onsite oil-water separators and all catch basins cleaned out. The removed sediment was disposed offsite by the cleaning contractor. Most of the catch basin are fitted with fabric filter inserts.

Initial Supplemental Basin 18 Source Control Evaluation Activities

Conveyance Pipe and Catch Basin Cleanout and Solids Sampling

The storm water conveyance pipes and catch basins on the D&B property were cleaned (e.g., jetted while recovering the jetted water and sediments) on August 26, 2016 to reduce future potential migration of Basin 18 COIs from the D&B Property. Catch basins CB1 through CB5 and accessible pipes attached to these catch basins were cleaned. About 500 gallons of water and sediment were generated during the cleanout process and placed in a portable tank on the site for staging, sampling, and offsite management. A representative sample of the solids were collected using decontaminated sampling equipment and submitted to Apex Labs for chemical analysis for the following:

- Aluminum, antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, and zinc;
- Butyltins;
- PCB aroclors;
- Dioxins/furans;

- Phthalates;
- Polycyclic aromatic hydrocarbons (PAHs);
- Total organic carbon (TOC); and
- Total Petroleum Hydrocarbons (gasoline, diesel, and heavy oil).

Table 1 presents the results of the cleanout sediment chemical analysis.

Dunkin & Bush Camera Survey

A camera survey of the Dunkin & Bush storm water conveyance pipes was performed on August 29, 2016 to assess the storm water system infrastructure in the area around Dunkin & Bush catch basins including the possible presence and location of the manhole historically identified in North Sever Road. Based on the video survey and observations during the catch basin and pipe cleanout, the following storm water collection and conveyance system features are inferred:

Catch Basin 1: 5-inch concrete pipe with invert about 16 inches below ground surface (bgs) enters from south (roof drain). 12-inch steel pipe with invert about 32 inches bgs exits to north, goes about 3 feet and then turns down.

Catch Basin 2: 5-inch plastic pipe with invert about 16 inches bgs enters from south (roof drain). 3-inch plastic pipe with invert about 16 inches bgs enters from southeast (connected to open pipe at surface in yard about 5 ½ feet from catch basin). 12-inch steel pipe with invert about 32 inches bgs exits to north, goes about 3 feet and then turns down.

Catch Basin 3: 12-inch corrugated steel pipe with invert about 27 inches bgs enters from southeast; pipe extends about 60 feet to southeast before obstructed with roots and soil. 12-inch concrete pipe with invert about 28 inches bgs exits to northwest, goes at about 41 feet and transitions (within a concrete-walled chamber with 2-ft nominal dimensions) to a 10-inch corrugated steel pipe angled about 45 degrees further to the west, which further extends about 33 feet where sediment in the invert and equipment limitations prevented further assessment. About one inch of sediment was observed in the invert of the corrugated steel pipe section. Scattered pockets of sediment of less than 1 inch thick were noted in the invert of the concrete pipe section.

Catch Basin 4: 12-inch steel pipe with invert about 32 inches bgs exits to south, goes about 3 feet and then turns down.

Catch Basin 5: 12-inch steel pipe with invert about 26 inches bgs exits to south, goes about 3 feet and then turns down.

North Sever Road Manhole: The manhole located about 450 feet north of North Sever Road on the Lampros Steel site (SP-1 on Figure 3) was accessed and a camera survey performed south of the manhole. An approximate 36-inch corrugated steel pipe exits the manhole to the south. The camera survey noted a manhole located about 504 feet south of the SP-1 manhole. Based on signal tracing from the camera, the manhole appears to be beneath the southern sidewalk of North Sever Road, just west of the Dunkin & Bush yard gate (Figure 5). Various inlet pipes were noted at the manhole in addition to the 36-inch pipe. Figure 5 shows the inferred lateral orientations of the pipes entering/exiting the manhole, consistent with the camera survey. Little to no sediment was noted in the pipe the first approximate 250 feet south of SP-1. From about 250 feet to about 340 south of SP-1, sediment depth in the invert pipe varied from less than one inch to about four inches. From about 340 feet south of SP-1 to the North Sever Road manhole, little to no sediment was present in the pipe invert. At about 305 feet south of the SP-1

manhole, an approximate 6-inch steel remnant pipe intruded into the crown of the 36-inch pipe. The 6-inch pipe was covered with what appears to be roots and soil, including inside the pipe. No evidence of recent discharge from the 6-inch pipe was observed in the camera survey.

Basin 18 Supplemental Storm Water Sampling and Analysis

Storm Water Sample Collection

Basin 18 storm water samples were collected on October 13, 2016 at the following locations in accordance with the hierarchical sampling methodology shown in Figure 7.

B18-D-CB1: Sample collected from water flowing into the catch basin from the connected roof drain.

B18-D-CB2: Sample collected from water discharging from the catch basin.

B18-D-CB3: Sample collected from water discharging from the catch basin.

B18-F-1: Sample collected from standing water above the catch basin.

B18-F-2: Sample collected from standing water in the discharge side of the separator.

B18-F-3: Sample collected from standing water in the discharge side of the separator.

B18-F-4: Sample collected from standing water in the catch basin.

B18-F-5: Sample collected from water flowing into the catch basin at the catch basin edge.

B18-F-6: Sample collected from water flowing into the catch basin at the catch basin edge.

B18-F-7: Sample collected from water flowing into the catch basin at the catch basin edge.

B18-F-R1: Sample collected from roof drain drop pipe.

B18-F-R2: Sample collected from roof drain drop pipe.

B18-F-R3: Sample collected from roof drain drop pipe.

B18-OF18: Sample collected at outfall from discharging water.

Table 2 presents the rainfall conditions preceding and during the storm water sampling event. Based on the relative rainfall and sample collection timing, somewhat greater than 0.1 inches of rainfall is inferred to have fallen prior to collection of the storm water samples. Given the modest exceedance (about 0.3 inches) of the 0.1-inch pre-event target and the size of the overall rainfall event (> 2 inches), the collected samples are representative of storm water runoff from Basin 18. An October 17, 2016 email from DEQ noted that the samples were within a time frame to provide good data within the first seasonal flush.

Storm Water Sample Analysis

The Basin 18 storm water sample was analyzed for the following:

- Aluminum, antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, and zinc;
- Butyltins;

- PCB aroclors, homologs, and congeners;
- Dioxins/furans;
- Phthalates;
- Polycyclic aromatic hydrocarbons (PAHs);
- Total organic carbon (TOC);
- Total Petroleum Hydrocarbons (gasoline, diesel, and heavy oil); and
- Total suspended solids (TSS).

Table 3 presents the results of the Basin 18 storm water sample analyses. Copies of the analytical laboratory reports are provided in Appendix A. Review of the laboratory QA/QC results did not indicate any issues requiring corrective action. Table 3 also presents the result of previous storm water sampling and analysis in Basin 18. Figure 3 shows the previous storm water sample locations.

Attachments:

Table 1 – Dunkin & Bush Catch Basin and Pipe Solids Sample Analytical Laboratory Results
Table 2 - Storm Water Sampling Event Rainfall Data, 10/13/2016 Sampling Event
Table 3 – Storm Water Sample Analytical Laboratory Results
Figure 1 – Site Location Map
Figure 2 – Burgard Industrial Park Site Plan
Figure 3 – Basin 18 Site Plan
Figure 4 – Basin 18 Impervious Surfaces
Figure 5 – Sample Locations, Dunkin & Bush Property
Figure 6 – Sample Locations, Felton Property
Figure 7 – Storm Water Sampling Hierarchy Flow Chart
Appendix A – Analytical Laboratory Reports

Tables

Table 1
Dunkin & Bush Catch Basin and Pipe Solids Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18 Dunkin Bush

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	CB Cleanout Sediment 8/29/2016
PAHs (ug/kg)				
2-Methylnaphthalene	200			180 U
Acenaphthene	300			90 U
Acenaphthylene	200			222
Anthracene	845			269
Benzo(a)anthracene	1050			1650
Benzo(a)pyrene	1450			3070
Benzo(b+k)fluoranthene	13000			4260
Benzo(g,h,i)perylene	300			3100
Chrysene	1290			2450
Dibenzo(a,h)anthracene	1300			381
Fluoranthene	2230			3080
Fluorene	536			90 U
Indeno(1,2,3-cd)pyrene	100			2660
Naphthalene	561			361
Phenanthrene	1170			942
Pyrene	1520			4310
Total PAHs (BaP TEF)		12		3664
Total Detected PAHs		23000	15000	25522
PCBs (ug/kg)				
Aroclor 1016	530			8.2 U
Aroclor 1221				8.2 U
Aroclor 1232				8.2 U
Aroclor 1242				8.2 U
Aroclor 1248	1500			8.2 U
Aroclor 1254	300			339
Aroclor 1260	200			286
Total Detected PCB Aroclors	0.39	9	200	625
Phthalates (ug/kg)				
Bis(2-ethylhexyl) phthalate	330	135	30000	1610 J
Butylbenzyl phthalate				897 U
Diethyl phthalate	600			897 U
Dimethyl phthalate				897 U
Dibutyl phthalate				897 U
Di-n-octyl phthalate	60			897 U
Dioxins (ug/kg)				
1,2,3,4,6,7,8-HeptaCDD	0.69			17.2
1,2,3,4,6,7,8-HeptaCDF	0.69			3.07
1,2,3,4,7,8,9-HeptaCDF	0.69			0.209
1,2,3,4,7,8-HexaCDD				0.195
1,2,3,4,7,8-HexaCDF	0.0027	0.0004		0.242
1,2,3,6,7,8-HexaCDD				0.947
1,2,3,6,7,8-HexaCDF	0.0027			0.158
1,2,3,7,8,9-HexaCDD				0.461
1,2,3,7,8,9-HexaCDF	0.0027			0.00611
1,2,3,7,8-PentaCDD	0.0026	0.0002		0.071
1,2,3,7,8-PentaCDF	0.0026			0.040
2,3,4,6,7,8-HexaCDF	0.0027			0.122
2,3,4,7,8-PentaCDF	0.000	0.0003		0.049
2,3,7,8-TetraCDD	0.0000091	0.0002		0.026
2,3,7,8-TetraCDF	0.00077	0.00040658		0.035
OCDD	23			148
OCDF	23			7.15
Total Hepta CDD				29.6

Table 1
Dunkin & Bush Catch Basin and Pipe Solids Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18 Dunkin Bush

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	CB Cleanout Sediment 8/29/2016
Total Hepta CDF				11.0
Total Hexa CDD				4.25
Total Hexa CDF				5.39
Total Penta CDD				0.223
Total Penta CDF				1.59
Total Tetra CDD				0.080
Total Tetra CDF				0.405
Total TEQ	0.000091			0.580
Butyltins (ug/kg)				
Butyltin ion				24
Dibutyltin ion				6.2
Tributyltin ion	2.3	3080		1.2 J
Metals (ug/kg)				
Aluminum				16500000
Antimony	64000			7890
Arsenic	7000	3000	10000	9390
Cadmium	1000	510	2000	32600
Chromium	111000		130000	68300
Copper	149000	359000	500000	228000
Lead	17000	196000	300000	536000
Manganese	1100000			1280000
Mercury	70	85	350	221
Nickel	48600		60000	44300
Silver	5000		700	420.00 J
Zinc	459000	459000	1400000	4710000
Total Petroluem Hydrcarbons (ug/kg)				
Gasoline				6000.0 U
Diesel		91000		337000 U
Oil				2140000
Total Organic Carbon (ug/kg)				45000000

U - Not detected at noted detection limit
J - Estimated value

1 - Table 3-1 PH JSCS Guidance, 7/16/2007 revision

2 - Table 17 January 2017 PH ROD. Riverbank/Soil Cleanup Level

3 - October 2010, DEQ Guidance for Evaluating Stormwater Pathway at Upland Sites, Appendix E, Tool For Evaluating Stormwater Data (12/2015 update)

Detected concentration > 10 x SLV (CL or JSCS if no CL)
Detected concentration > 100 x SLV (CL or JSCS if no CL)
Detected concentration > 1000 x SLV (CL or JSCS if no CL)

Table 2
Storm Water Sampling Event Rainfall Data
10/13/2016 Sampling Event
Burgard Industrial Park Basin 18

Date	Daily Total	Hourly Rain Fall (0.01 inches)																							
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
9/28/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/29/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9/30/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/1/2016	39	0	0	0	0	0	5	0	0	0	0	0	0	0	0	11	7	2	9	0	0	1	3	1	0
10/2/2016	37	2	7	4	1	1	2	4	7	6	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0
10/3/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/4/2016	20	0	0	0	3	1	0	0	0	1	0	1	0	0	3	0	1	0	2	6	2	0	0	0	0
10/5/2016	21	0	0	0	4	13	0	0	0	0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0
10/6/2016	13	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	2	2	3	0	0	1	0	3	1
10/7/2016	28	7	9	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	2	4	0	0	0	0
10/8/2016	15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	7	6	0	0
10/9/2016	76	2	0	4	0	0	4	3	3	6	3	3	2	0	0	0	5	7	2	18	10	4	0	0	0
10/10/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
10/11/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10/12/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
10/13/2016	205	5	11	10	7	9	7	3	3	6	9	12	13	5	8	16	23	13	9	6	7	15	5	3	0

Data from Shipyard Rain Gage - 8900 N. Sever Road
Sampling Day
Sampling Hours

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016
PAHs (ug/l)																	
Acenaphthene	2.00E-01			9.52E-03 U	1.11E-02 U	9.62E-02 U	1.08E-02 U	9.52E-03 U	1.06E-02 U	1.05E-02 U	9.62E-03 U	1.86E-01	9.62E-03 U	9.52E-03 U	9.62E-03 U	9.52E-03 U	9.43E-03 U
Acenaphthylene	2.00E-01			9.52E-03 U	1.11E-02 U	9.62E-02 U	1.08E-02 U	9.52E-03 U	1.06E-02 U	1.05E-02 U	1.02E-02 J	3.88E-02 U	9.62E-03 U	9.52E-03 U	9.62E-03 U	9.52E-03 U	9.43E-03 U
Anthracene				9.52E-03 U	1.11E-02 U	9.62E-02 U	1.08E-02 U	9.52E-03 U	1.06E-02 U	1.05E-02 U	2.90E-02	1.75E-01	9.62E-03 U	9.52E-03 U	9.62E-03 U	9.52E-03 U	9.43E-03 U
Benzo(a)anthracene	1.80E-02	1.20E-03		9.52E-03 U	1.11E-02 U	1.35E-01 J	1.70E-02 J	9.52E-03 U	1.06E-02 U	1.05E-02 U	7.97E-02	2.87E-01	9.62E-03 U	9.52E-03 U	9.62E-03 U	9.52E-03 U	1.81E-02 J
Benzo(a)pyrene	1.80E-02	1.20E-04		1.43E-02 U	1.67E-02 U	3.31E-01	2.88E-02 J	1.43E-02 U	1.60E-02 U	1.58E-02 U	8.30E-02	2.86E-01	1.69E-02 J	1.43E-02 U	1.44E-02 U	1.43E-02 U	2.97E-02
Benzo(b)fluoranthene	1.80E-02	1.20E-03		1.43E-02 U	1.67E-02 U	3.64E-01	5.35E-02	1.43E-02 U	1.60E-02 U	1.58E-02 U	1.58E-01	4.70E-01	1.66E-02 J	1.43E-02 U	1.44E-02 U	1.43E-02 U	3.97E-02
Benzo(k)fluoranthene	1.80E-02	1.30E-03		1.43E-02 U	1.67E-02 U	1.44E-01 U	1.93E-02 J	1.43E-02 U	1.60E-02 U	1.58E-02 U	4.96E-02	1.54E-01	1.44E-02 U	1.43E-02 U	1.44E-02 U	1.43E-02 U	1.69E-02 J
Benzo(b+k)fluoranthene	1.80E-02	1.20E-03															
Benzo(g,h,i)perylene	2.00E-01			9.52E-03 U	1.11E-02 U	3.17E-01	2.97E-02	9.52E-03 U	1.06E-02 U	1.05E-02 U	5.93E-02	2.25E-01	1.87E-02 J	9.52E-03 U	9.62E-03 U	9.52E-03 U	3.26E-02
Chrysene	1.80E-02	1.30E-03		9.52E-03 U	1.11E-02 U	3.30E-01	5.27E-02	9.52E-03 U	1.06E-02 U	1.05E-02 U	1.59E-01	4.80E-01	1.61E-02 J	9.52E-03 U	9.62E-03 U	9.52E-03 U	4.41E-02
Dibenzo(a,h)anthracene	1.80E-02	1.20E-04		9.52E-03 U	1.11E-02 U	9.62E-02 U	1.08E-02 U	9.52E-03 U	1.06E-02 U	1.05E-02 U	1.18E-02 J	4.92E-02 J	9.62E-03 U	9.52E-03 U	9.62E-03 U	9.52E-03 U	9.43E-03 U
Fluoranthene	2.00E-01			9.52E-03 U	1.11E-02 U	3.03E-01	5.79E-02	9.52E-03 U	1.17E-02 J	1.05E-02 U	1.51E-01	1.45E+00	2.50E-02	9.52E-03 U	1.05E-02 J	9.52E-03 U	5.20E-02
Fluorene	2.00E-01			9.52E-03 U	1.11E-02 U	9.62E-02 U	1.41E-02 J	9.52E-03 U	1.06E-02 U	1.05E-02 U	9.62E-03 U	2.97E-01	1.09E-02 J	9.59E-03 J	9.90E-03 J	1.04E-02 J	9.43E-03 U
Indeno(1,2,3-cd)pyrene	1.80E-02	1.20E-03		9.52E-03 U	1.11E-02 U	2.59E-01	2.29E-02	9.52E-03 U	1.06E-02 U	1.05E-02 U	6.14E-02	1.96E-01	1.24E-02 J	9.52E-03 U	9.62E-03 U	9.52E-03 U	2.38E-02
Naphthalene	2.00E-01	1.20E+01		1.90E-02 U	2.22E-02 U	1.92E-01 U	2.15E-02 U	1.90E-02 U	2.13E-02 U	2.11E-02 U	1.92E-02 U	7.77E-02 U	2.12E-02 J	2.46E-02 J	1.92E-02 U	2.90E-02 J	3.28E-02 J
Phenanthrene	2.00E-01			1.69E-02 J	2.35E-02	1.15E-01 J	4.17E-02	2.27E-02	1.06E-02 U	1.05E-02 U	2.54E-02	5.86E-01	3.06E-02	2.22E-02	1.78E-02 J	2.75E-02	2.53E-02
Pyrene	2.00E-01			9.52E-03 U	1.11E-02 U	4.15E-01	5.37E-02	9.52E-03 U	1.58E-02 J	1.05E-02 U	1.55E-01	1.13E+00	2.80E-02	9.52E-03 U	9.62E-03 U	9.52E-03 U	7.00E-02
Total Detected CPAHs (BaP TEF)		1.20E-04		0.00E+00	0.00E+00	3.74E-01	3.31E-02	0.00E+00	0.00E+00	0.00E+00	1.10E-01	3.86E-01	1.83E-02	0.00E+00	0.00E+00	0.00E+00	3.43E-02
Total Detected PAHs			1.50E+00	1.69E-02	2.35E-02	2.57E+00	3.91E-01	2.27E-02	2.75E-02	0.00E+00	1.02E+00	5.97E+00	1.96E-01	5.64E-02	2.83E-02	6.69E-02	3.85E-01
PCBs (ug/l)																	
Aroclor 1016	9.60E-01			1.03E-02 U	9.62E-03 U	1.03E-02 U	1.14E-02 U	1.04E-02 U	9.43E-03 U	9.62E-03 U	1.08E-02 U	1.06E-02 U	1.01E-02 U	1.03E-02 U	1.04E-02 U	1.03E-02 U	1.02E-02 U
Aroclor 1221	3.40E-02			2.06E-02 U	9.62E-03 U	1.03E-02 U	1.14E-02 U	1.04E-02 U	9.43E-03 U	9.62E-03 U	1.08E-02 U	1.06E-02 U	1.01E-02 U	1.03E-02 U	1.04E-02 U	1.03E-02 U	1.02E-02 U
Aroclor 1232	3.40E-02			1.03E-02 U	9.62E-03 U	1.03E-02 U	1.14E-02 U	1.04E-02 U	9.43E-03 U	9.62E-03 U	1.08E-02 U	1.06E-02 U	1.01E-02 U	1.03E-02 U	1.04E-02 U	1.03E-02 U	2.04E-02 U
Aroclor 1242	3.40E-02			1.03E-02 U	9.62E-03 U	1.03E-02 U	1.14E-02 U	1.04E-02 U	9.43E-03 U	9.62E-03 U	1.08E-02 U	1.17E-01	1.01E-02 U	1.03E-02 U	1.04E-02 U	1.03E-02 U	1.02E-02 U
Aroclor 1248	3.40E-02			1.03E-02 U	9.62E-03 U	1.03E-02 U	1.14E-02 U	1.04E-02 U	9.43E-03 U	9.62E-03 U	1.08E-02 U	1.06E-02 U	1.01E-02 U	1.03E-02 U	1.04E-02 U	1.03E-02 U	1.02E-02 U
Aroclor 1254	3.40E-02			1.03E-02 U	9.62E-03 U	5.20E-02	1.14E-02 U	1.04E-02 U	9.43E-03 U	9.62E-03 U	1.08E-02 U	1.10E-01	5.28E-02	1.03E-02 U	1.04E-02 U	1.03E-02 U	1.02E-02 U
Aroclor 1260	3.40E-02			1.03E-02 U	9.62E-03 U	4.21E-02	1.14E-02 U	1.04E-02 U	3.78E-02	9.62E-03 U	1.08E-02 U	5.23E-02	6.18E-02	1.03E-02 U	1.04E-02 U	1.03E-02 U	1.02E-02 U
Total Detected PCB aroclors	6.40E-05	6.40E-06	0.3	0.00E+00	0.00E+00	9.41E-02	0.00E+00	0.00E+00	3.78E-02	0.00E+00	0.00E+00	2.79E-01	1.15E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PCB Congeners (ug/l)																	
2-MonoCB-(1)																	
3-MonoCB-(2)																	
4-MonoCB-(3)																	
22'-DiCB-(4)																	
2,3-DiCB-(5)																	
2,3'-DiCB-(6)																	
2,4-DiCB-(7)																	
2,4'-DiCB-(8)																	
2,5-DiCB-(9)																	
2,6-DiCB-(10)																	
3,3'-DiCB-(11)																	
DiCB-(12)+(13)																	
3,5-DiCB-(14)																	
4,4'-DiCB-(15)																	
22'3-TriCB-(16)																	
22'4-TriCB-(17)																	
TriCB-(18)+(30)																	
22'6-TriCB-(19)																	
TriCB-(20) + (28)																	
TriCB-(21)+(33)																	
234'-TriCB-(22)																	
235-TriCB-(23)																	
236-TriCB-(24)																	
23'4-TriCB-(25)																	
TriCB-(26)+(29)																	
23'6-TriCB-(27)																	
24'5-TriCB-(31)																	
24'6-TriCB-(32)																	
23'5'-TriCB-(34)																	
33'4-TriCB-(35)																	
33'5-TriCB-(36)																	
344'-TriCB-(37)																	
345-TriCB-(38)																	
34'5-TriCB-(39)																	

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016
TetraCB-(40)+(41)+(71)																	
22'34'-TetraCB-(42)																	
22'35-TetraCB-(43)																	
TetraCB-(44)+(47)+(65)																	
TetraCB-(45)+(51)																	
22'36'-TetraCB-(46)																	
22'45-TetraCB-(48)																	
TetraCB-(49)+TetraCB-(69)																	
TetraCB-(50)+(53)																	
22'55'-TetraCB-(52)																	
22'66'-TetraCB-(54)																	
233'4-TetraCB-(55)																	
233'4'-Tetra CB(56)																	
233'5-TetraCB-(57)																	
233'5'-TetraCB-(58)																	
TetraCB-(59)+(62)+(75)																	
2344'-TetraCB -(60)																	
TetraCB-(61)+(70)+(74)+(76)																	
234'5-TetraCB-(63)																	
234'6-TetraCB-(64)																	
23'44'-TetraCB-(66)																	
23'45-TetraCB-(67)																	
23'45'-TetraCB-(68)																	
23'55'-TetraCB-(72)																	
23'5'6-TetraCB-(73)																	
33'44'-TetraCB-(77)																	
33'45-TetraCB-(78)																	
33'45'-TetraCB(79)																	
33'55'-TetraCB-(80)																	
344'5-TetraCB-(81)																	
22'33'4-PentaCB-(82)																	
PentaCB-(83)+(99)																	
22'33'6-PentaCB-(84)																	
PentaCB-(85)+(116)+(117)																	
PentaCB-(86)(87)(97)(109)(119)(125)																	
PentaCB-(88)+(91)																	
22'346'-PentaCB-(89)																	
PentaCB-(90)+(101)+(113)																	
22'355'-PentaCB-(92)																	
PentaCB-(93)+(98)+(100)+(102)																	
22'356'-PentaCB-(94)																	
22'35'6-PentaCB-(95)																	
22'366'-PentaCB-(96)																	
22'45'6-PentaCB-(103)																	
22'466'-PentaCB-(104)																	
233'44'-PentaCB-(105)																	
233'45-PentaCB-(106)																	
233'4'5-PentaCB-(107)																	
PentaCB-(108)+(124)																	
PentaCB-(110)+(115)																	
233'55'-PentaCB-(111)																	
233'56-PentaCB-(112)																	
2344'5-PentaCB-(114)																	
23'44'5-PentaCB-(118)																	
23'455'-PentaCB-(120)																	
23'45'6-PentaCB-(121)																	
233'4'5'-PentaCB-(122)																	
23'44'5'-PentaCB-(123)																	
33'44'5-PentaCB-(126)																	
33'455'-PentaCB-(127)																	
HexaCB-(128)+(166)																	
HexaCB-(129)+(138)+(163)																	
22'33'45'-HexaCB-(130)																	
22'33'46-HexaCB-(131)																	
22'33'46'-HexaCB-(132)																	
22'33'55'-HexaCB-(133)																	

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016
HexaCB-(134)+(143)																	
HexaCB-(135)+(151)																	
22'33'66'-HexaCB-(136)																	
22'344'5-HexaCB-(137)																	
HexaCB-(139)+(140)																	
22'3455'-HexaCB-(141)																	
22'3456-HexaCB-(142)																	
22'345'6-HexaCB-(144)																	
22'3466'-HexaCB-(145)																	
22'34'55'-HexaCB-(146)																	
HexaCB-(147)+(149)																	
22'34'56'-HexaCB-(148)																	
22'34'66'-HexaCB-(150)																	
22'3566'-HexaCB-(152)																	
HexaCB-(153)+(168)																	
22'44'56'-HexaCB-(154)																	
22'44'66'-HexaCB-(155)																	
HexaCB-(156)+(157)																	
233'44'6-HexaCB-(158)																	
233'455'-HexaCB-(159)																	
233'456-HexaCB-(160)																	
233'45'6-HexaCB-(161)																	
233'4'55'-HexaCB-(162)																	
233'4'5'6-HexaCB-(164)																	
233'55'6-HexaCB-(165)																	
23'44'55'-HexaCB-(167)																	
33'44'55'-HexaCB-(169)																	
22'33'44'5-HeptaCB-(170)																	
HeptaCB-(171)+(173)																	
22'33'455'-HeptaCB-(172)																	
22'33'456'-HeptaCB-(174)																	
22'33'45'6-HeptaCB-(175)																	
22'33'466'-HeptaCB-(176)																	
22'33'45'6'-HeptaCB-(177)																	
22'33'55'6-HeptaCB-(178)																	
22'33'566'-HeptaCB-(179)																	
HeptaCB-(180)+(193)																	
22'344'56-HeptaCB-(181)																	
22'344'56'-HeptaCB-(182)																	
22'344'5'6-HeptaCB-(183)																	
22'344'66'-HeptaCB-(184)																	
22'3455'6-HeptaCB-(185)																	
22'34566'-HeptaCB-(186)																	
22'34'55'6-HeptaCB-(187)																	
22'34'566'-HeptaCB-(188)																	
233'44'55'-HeptaCB-(189)																	
233'44'56-HeptaCB-(190)																	
233'44'5'6-HeptaCB-(191)																	
233'455'6-HeptaCB-(192)																	
22'33'44'55'-OctaCB-(194)																	
22'33'44'56-OctaCB-(195)																	
22'33'44'56'-OctaCB-(196)																	
22'33'44'66'OctaCB-(197)																	
OctaCB-(198)+(199)																	
22'33'4566'-OctaCB-(200)																	
22'33'45'66'-OctaCB-(201)																	
22'33'55'66'-OctaCB-(202)																	
22'344'55'6-OctaCB-(203)																	
22'344'566'-OctaCB-(204)																	
233'44'55'6-OctaCB-(205)																	
22'33'44'55'6-NonaCB-(206)																	
22'33'44'566'-NonaCB-(207)																	
22'33'455'66'-NonaCB-(208)																	
DecaCB-(209)																	
PCB Congeners (ug/l)																	

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016
2-Chlorobiphenyl (1)				3.66E-06 J	3.74E-06 J	1.24E-08 J	1.04E-08 J	3.14E-09 J	2.44E-09 J	2.88E-09 J	6.31E-06 J	7.11E-05	5.61E-06 J	3.32E-06 U	2.98E-06 J	3.32E-06 J	1.98E-06 U
3-Chlorobiphenyl (2)				1.78E-06 J	1.97E-06 J	1.71E-05 J	4.54E-06 J	1.42E-06 J	1.57E-06 J	6.11E-07 U	2.05E-06 J	2.82E-05	5.05E-06 J	1.07E-06 U	1.23E-06 U	9.90E-07 U	1.94E-06 U
4-Chlorobiphenyl (3)				3.36E-06 J	2.96E-06 J	2.71E-05 J	9.67E-06 J	2.64E-06 J	2.52E-06 J	2.18E-06 J	2.82E-06 J	6.66E-05	5.53E-06 J	1.27E-06 U	2.34E-06 J	1.07E-06 U	2.60E-06 J
2,2'-Dichlorobiphenyl (4)				6.18E-06 J	8.95E-06 J	3.37E-05 U	3.66E-05	8.44E-06 J	1.61E-05 J	9.31E-06 J	1.72E-05 J	5.01E-04	1.83E-05 J	3.74E-06 U	5.80E-06 J	8.03E-06 J	2.16E-05
2,3-Dichlorobiphenyl (5)				1.52E-06 U	1.73E-06 U	3.43E-05 U	2.40E-06 U	1.51E-06 U	1.52E-06 U	1.22E-06 U	1.76E-06 U	3.50E-05	3.79E-06 U	4.49E-06 U	2.32E-06 U	3.38E-06 U	3.27E-06 U
2,3'-Dichlorobiphenyl (6)				2.51E-06 J	3.70E-06 J	2.63E-05 U	1.78E-05 J	2.66E-06 J	3.73E-06 J	2.60E-06 J	4.94E-06 J	3.00E-04	9.39E-06 J	3.49E-06 U	1.83E-06 U	4.62E-06 U	6.82E-06 J
2,4-Dichlorobiphenyl (7)				1.34E-06 J	1.53E-06 U	2.86E-05 U	5.46E-06 J	1.30E-06 U	1.31E-06 U	1.05E-06 U	2.09E-06 J	5.54E-05	3.29E-06 U	3.92E-06 U	2.04E-06 U	2.95E-06 U	2.85E-06 U
2,4'-Dichlorobiphenyl (8)				9.32E-06 J	1.38E-05 J	1.17E-04 J	8.19E-05	1.07E-05 J	1.68E-05 J	1.05E-05 J	1.87E-05 J	1.35E-03	3.48E-05	1.01E-05 J	1.09E-05 J	1.33E-05 J	2.92E-05
2,5-Dichlorobiphenyl (9)				1.55E-06 J	2.70E-06 J	2.80E-05 U	5.92E-06 J	1.34E-06 U	2.54E-06 J	1.22E-06 J	2.05E-06 J	8.02E-05	3.21E-06 U	3.82E-06 U	2.04E-06 U	2.95E-06 U	2.85E-06 U
2,6-Dichlorobiphenyl (10)				1.23E-06 U	1.31E-06 U	2.72E-05 U	1.87E-06 U	1.28E-06 U	1.27E-06 U	8.97E-07 U	1.49E-06 U	2.74E-05	2.03E-06 U	2.28E-06 U	1.23E-06 U	1.67E-06 U	1.52E-06 U
3,3'-Dichlorobiphenyl (11)				4.28E-05 J	4.86E-05 J	4.55E-04 J	1.93E-04	5.92E-05 J	6.79E-05 J	4.66E-05 J	5.42E-05 J	3.60E-04	1.49E-04	7.69E-05 J	8.75E-05 J	7.27E-05 J	9.16E-05 J
3,4-Dichlorobiphenyl (12) (13)				2.72E-06 J	4.77E-06 J	2.94E-05 U	2.06E-05 J	4.04E-06 J	5.47E-06 J	4.87E-06 J	5.56E-06 J	2.72E-04	3.43E-06 U	4.06E-06 U	2.12E-06 U	3.09E-06 U	1.12E-05 J
3,5-Dichlorobiphenyl (14)				1.25E-06 U	1.43E-06 U	2.65E-05 U	1.98E-06 U	1.26E-06 U	1.27E-06 U	1.01E-06 U	1.47E-06 U	3.55E-06 U	3.17E-06 U	3.76E-06 U	1.93E-06 U	2.81E-06 U	2.71E-06 U
4,4'-Dichlorobiphenyl (15)				7.17E-06 J	1.35E-05 J	1.51E-04 J	1.06E-04	1.13E-05 J	3.58E-05	1.03E-05 J	3.56E-05	1.96E-03	3.29E-05	4.52E-06 U	8.51E-06 J	8.83E-06 J	7.90E-05
2,2',3-Trichlorobiphenyl (16)				4.76E-06 J	8.43E-06 J	1.16E-04 J	5.59E-05	6.81E-06 J	2.22E-05	5.25E-06 J	1.77E-05 J	1.48E-03	3.12E-05	6.69E-06 J	6.91E-06 J	9.29E-06 J	5.75E-05
2,2',4-Trichlorobiphenyl (17)				4.95E-06 J	6.42E-06 J	9.10E-05 J	4.73E-05	5.41E-06 J	2.17E-05	5.10E-06 J	1.56E-05 J	1.02E-03	1.96E-05	5.21E-06 J	5.72E-06 J	6.75E-06 J	4.47E-05
2,2',5-Trichlorobiphenyl (18) (30)				9.42E-06 J	1.42E-05 J	1.90E-04 J	1.02E-04	1.27E-05 J	4.79E-05	1.22E-05 J	3.26E-05 J	2.26E-03	3.94E-05	1.04E-05 J	1.21E-05 J	1.29E-05 J	9.83E-05
2,2',6-Trichlorobiphenyl (19)				2.03E-06 J	2.49E-06 J	3.05E-05 J	1.52E-05 J	2.77E-06 J	1.11E-05 J	3.02E-06 J	6.83E-06 J	2.71E-04	6.15E-06 J	3.14E-06 J	2.59E-06 J	2.97E-06 J	1.54E-05 J
2,3,3'-Trichlorobiphenyl (20) (28)				1.61E-05 J	2.54E-05 J	3.76E-04 J	2.12E-04	1.85E-05 J	7.44E-05	1.95E-05 J	7.40E-05	6.40E-03	7.93E-05	1.64E-05 J	1.85E-05 J	1.80E-05 J	2.30E-04
2,3,4-Trichlorobiphenyl (21) (33)				9.99E-06 J	1.60E-05 J	2.48E-04 J	1.19E-04	1.02E-05 J	3.68E-05 J	1.03E-05 J	3.22E-05 J	3.31E-03	6.07E-05	1.12E-05 J	1.03E-05 J	1.13E-05 J	6.66E-05
2,3,4'-Trichlorobiphenyl (22)				6.89E-06 J	1.14E-05 J	1.70E-04 J	9.39E-05	9.45E-06 J	3.30E-05	8.82E-06 J	3.37E-05	2.98E-03	3.71E-05	7.27E-06 J	8.04E-06 J	8.65E-06 J	7.93E-05
2,3,5-Trichlorobiphenyl (23)				9.59E-07 U	1.07E-06 U	1.41E-05 U	1.25E-06 U	1.38E-06 U	1.15E-06 U	8.78E-07 U	1.20E-06 U	5.70E-06 J	1.24E-06 U	1.38E-06 U	1.05E-06 U	1.09E-06 U	9.42E-07 U
2,3,6-Trichlorobiphenyl (24)				1.02E-06 U	1.13E-06 U	1.43E-05 U	4.04E-06 J	1.51E-06 U	2.36E-06 J	9.73E-07 U	1.31E-06 U	1.20E-06 U	1.22E-06 U	1.37E-06 U	1.11E-06 U	1.14E-06 U	9.80E-07 U
2,3',4-Trichlorobiphenyl (25)				1.44E-06 J	2.03E-06 J	3.06E-05 J	1.41E-05 J	1.24E-06 U	4.42E-06 J	1.49E-06 U	4.54E-06 J	3.79E-04	6.68E-06 J	1.29E-06 U	1.50E-06 J	1.47E-06 J	1.17E-05 J
2,3',5-Trichlorobiphenyl (26) (29)				2.95E-06 J	4.20E-06 J	6.69E-05 J	3.05E-05 J	2.28E-06 J	1.05E-05 J	3.17E-06 J	9.07E-06 J	8.28E-04	1.66E-05 J	3.37E-06 J	3.21E-06 J	3.18E-06 J	2.77E-05 J
2,3',6-Trichlorobiphenyl (27)				1.15E-06 U	1.61E-06 J	1.64E-05 J	1.01E-05 J	1.32E-06 U	5.28E-06 J	1.03E-06 J	3.40E-06 J	2.00E-04	2.77E-06 J	1.25E-06 U	1.58E-06 J	1.51E-06 J	9.21E-06 J
2,4',5-Trichlorobiphenyl (31)				1.21E-05 J	2.04E-05	3.01E-04	1.48E-04	1.37E-05 J	5.47E-05	1.73E-05 J	4.64E-05	4.25E-03	5.70E-05	1.35E-05 J	1.31E-05 J	1.38E-05 J	1.39E-04
2,4',6-Trichlorobiphenyl (32)				2.82E-06 J	3.90E-06 J	5.83E-05 J	3.17E-05	3.86E-06 J	1.56E-05 J	3.28E-06 J	1.11E-05 J	8.49E-04	1.14E-05 J	3.10E-06 J	3.56E-06 J	3.86E-06 J	3.60E-05
2',3,5-Trichlorobiphenyl (34)				8.82E-07 U	9.94E-07 U	1.30E-05 U	1.17E-06 U	1.28E-06 U	1.08E-06 U	8.21E-07 U	1.11E-06 U	1.25E-05 J	1.18E-06 U	1.33E-06 U	9.66E-07 U	1.01E-06 U	8.65E-07 U
3,3',4-Trichlorobiphenyl (35)				1.30E-06 U	2.59E-06 J	3.57E-05 J	1.33E-05 J	1.43E-06 U	3.96E-06 J	1.91E-06 J	3.38E-06 J	1.86E-04	9.73E-06 J	1.81E-06 U	1.89E-06 J	1.65E-06 U	7.29E-06 J
3,3',5-Trichlorobiphenyl (36)				1.25E-06 U	1.59E-06 U	1.39E-05 U	2.19E-06 U	1.36E-06 U	1.69E-06 U	1.24E-06 U	1.71E-06 U	2.52E-06 U	2.19E-06 U	1.64E-06 U	9.46E-07 U	1.49E-06 U	1.63E-06 U
3,4,4'-Trichlorobiphenyl (37)				6.98E-06 J	1.37E-05 J	2.19E-04	1.73E-04	1.12E-05 J	5.65E-05	1.06E-05 J	7.26E-05	3.28E-03	5.08E-05	6.22E-06 J	8.06E-06 J	6.25E-06 J	1.16E-04
3,4,5-Trichlorobiphenyl (38)				1.17E-06 U	1.51E-06 U	1.37E-05 U	2.06E-06 U	1.30E-06 U	1.63E-06 U	1.20E-06 U	1.65E-06 U	6.05E-06 J	2.30E-06 U	1.72E-06 U	9.87E-07 U	1.53E-06 U	1.67E-06 U
3,4',5-Trichlorobiphenyl (39)				1.25E-06 U	1.61E-06 U	1.48E-05 U	2.21E-06 U	1.38E-06 U	1.71E-06 U	1.28E-06 U	1.73E-06 U	2.71E-06 U	2.32E-06 U	1.74E-06 U	1.01E-06 U	1.57E-06 U	1.71E-06 U
2,2',3,3'-Tetrachlorobiphenyl (40) (71)				6.44E-06 J	1.05E-05 J	3.21E-04 J	2.05E-04	1.01E-05 J	5.17E-05	8.53E-06 J	8.02E-05	3.58E-03	7.92E-05	4.29E-06 J	9.58E-06 J	6.21E-06 J	1.49E-04
2,2',3,4-Tetrachlorobiphenyl (41)				1.90E-06 U	2.78E-06 J	7.05E-05 J	4.20E-05	3.83E-06 J	1.42E-05 J	2.86E-06 J	1.43E-05 J	8.41E-04	1.99E-05	2.73E-06 U	2.73E-06 J	2.12E-06 J	3.16E-05
2,2',3,4'-Tetrachlorobiphenyl (42)				3.66E-06 J	5.67E-06 J	1.82E-04 J	1.13E-04	5.87E-06 J	2.90E-05	4.68E-06 J	4.14E-05	2.18E-03	4.24E-05	3.16E-06 J	5.57E-06 J	4.02E-06 J	8.77E-05
2,2',3,5-Tetrachlorobiphenyl (43)				2.76E-06 U	2.07E-06 U	4.47E-05 U	1.94E-05 J	2.28E-06 U	4.47E-06 J	1.72E-06 U	4.45E-06 J	3.22E-04	1.10E-05 J	2.91E-06 U	1.60E-06 U	2.48E-06 U	1.49E-05 J
2,2',3,5'-Tetrachlorobiphenyl (44) (47) (65)				1.44E-05 J	2.09E-05 J	1.02E-03	3.94E-04	2.26E-05 J	1.05E-04	1.98E-05 J	1.57E-04	6.62E-03	3.01E-04	1.26E-05 J	2.71E-05 J	1.54E-05 J	3.24E-04
2,2',3,6-Tetrachlorobiphenyl (45) (51)				2.95E-06 J	4.49E-06 J	1.16E-04 J	4.04E-05 J	3.27E-06 J	2.11E-05 J	3.15E-06 J	1.72E-05 J	8.60E-04	1.76E-05 J	3.84E-06 J	5.70E-06 J	3.49E-06 J	3.98E-05
2,2',3,6'-Tetrachlorobiphenyl (46)				9.78E-07 U	1.83E-06 J	4.71E-05 J	1.64E-05 J	1.49E-06 J	4.28E-06 J	1.15E-06 J	7.20E-06 J	3.12E-04	6.77E-06 J	1.29E-06 U	2.34E-06 J	1.46E-06 U	1.61E-05 J
2,2',4,5-Tetrachlorobiphenyl (48)				2.95E-06 J	4.10E-06 J	8.48E-05 J	6.30E-05	3.90E-06 J	1.82E-05 J	3.38E-06 J	2.08E-05 J	1.45E-03	2.69E-05	2.46E-06 J	3.58E-06 J	3.09E-06 J	5.15E-05
2,2',4,5'-Tetrachlorobiphenyl (49) (69)				6.92E-06 J	1.07E-05 J	4.62E-04	1.77E-04	9.51E-06 J	4.56E-05	9.43E-06 J	7.05E-05	3.29E-03	1.40E-04	5.40E-06 J	1.17E-05 J	6.42E-06 J	1.61E-04
2,2',4,6-Tetrachlorobiphenyl (50) (53)				1.40E-06 J	2.76E-06 J	1.00E-04 J	2.39E-05 J	2.09E-06 J	8.22E-06 J	2.08E-06 J	9.98E-06 J	4.92E-04	1.43E-05 J	2.05E-06 J	3.72E-06 J	2.10E-06 J	2.62E-05 J
2,2',5,5'-Tetrachlorobiphenyl (52)				1.33E-05 J	1.89E-05 J	1.80E-03	4.33E-04	1.90E-05 J	8.64E-05	1.72E-05 J	1.77E-04	5.29E-03	6.61E-04	1.01E-05 J	3.41E-05	2.21E-05	3.72E-04
2,2',6,6'-Tetrachlorobiphenyl (54)				7.10E-07 U	7.95E-07 U	8.44E-06 U	9.58E-07 U	6.50E-07 U	9.22E-07 U	5.73E-07 U	7.56E-07 U	9.62E-06 J	1.28E-06 J	9.95E-07 U	8.43E-07 J	1.01E-06 U	8.84E-07 J
2,3,3',4-Tetrachlorobiphenyl (55)				1.15E-06 U	1.45E-06 U	2.92E-05 J	9.67E-06 J	1.21E-06 U	3.76E-06 J	8.40E-07 U	4.45E-06 J	1.29E-04	2.24E-06 U	1.52E-06 U	1.19E-06 U	1.44E-06 U	5.31E-06 J
2,3,3',4'-Tetrachlorobiphenyl (56)				5.66E-06 J	8.53E-06 J	3.79E-04	2.02E-04	1.01E-05 J	6.62E-05	8.11E-06 J	9.61E-05	2.22E-03	1.51E-04	4.37E-06 J	8.29E-06 J	4.93E-06 J	9.20E-05
2,3,3',5-Tetrachlorobiphenyl (57)				1.02E-06 U	1.29E-06 U	1.80E-05 U	2.79E-06 U	1.05E-06 U	1.94E-06 U	7.25E-07 U	2.05E-06 J	2.91E-05	4.63E-06 J	1.35E-06 U	1.05E-06 U	1.26E-06 U	1.75E-06 J
2,3,3',5'-Tetrachlorobiphenyl (58)				1.05E-06 U	1.35E-06 U	1.92E-05 U	2.92E-06 U	1.11E-06 U	2.05E-06 U	7.63E-07 U	1.89E-06 U	2.28E-05	2.19E-06 U	1.48E-06 U	1.11E-06 U	1.34E-06 U	1.92E-06 J
2,3,3',6-Tetrachlorobiphenyl (59) (62) (75)				2.07E-06 J	2.49E-06 J	4.72E-05 J	3.79E-05 J	2.49E-06 J	9.33E-06 J	1.72E-06 J	1.51E-05 J	6.37E-04	1.11E-05 J	2.07E-06 J	3.48E-06 J	1.71E-06 J	2.54E-05 J
2,3,4,4'-Tetrachlorobiphenyl (60)				2.92E-06 J	4.71E-06 J	1.46E-04 J	9.20E-05	5.18E-06 J	3.41E-05	4.33E-06 J	4.21E-05	1.19E-03	4.35E-05	2.24E-06 J	4.11E-06 J	2.79E-06 J	4.44E-05
2,3,4,5-Tetrachlorobiphenyl (61) (70) (74) (76)				1.86E-05 J	2.83E-05 J	2.17E-03	6.76E-04	3.39E-05 J	2.03E-04	2.76E-05 J	2.85E-04	8.58E-03	9.99E-04	1.53E-05 J	3.82E-05 J	1.66E-05 J	4.49E-04
2,3,4',5-Tetrachlorobiphenyl (63)				9.59E-07 U	1.21E-06 U	1.81E-05 J	1.15E-05 J	9.95E-07 U	3.40E-06 J	6.87E-07 U	4.56E-06 J	1.97E-04	7.91E-06 J	1.31E-06 U	1.19E-06 J	1.16E-06 U	7.40E-06 J
2,3,4',6-Tetrachlorobiphenyl (64)				5.77E-06 J	9.72E-06 J	4.06E-04	1.96E-04	1.02E-05 J	5.24E-05	9.33E-06 J	7.72E-05	3.72E-03	1.69E-04	4.66E-06 J	1.01E-05 J	5.72E-06 J	1.60E-04
2,3',4,4'-Tetrachlorobiphenyl (66)				7.81E-06 J	1.20E-05 J	6.72E-04	2.89E-04	1.39E-05 J	8.92E-05	1.22E-05 J	1.39E-04	4.19E-03	2.84E-04	5.62E-06 J	1.14E-05 J	6.71E-06 J	1.72E-04
2,3',4,5-Tetrachlorobiphenyl (67)				9.21E-07 U	1.17E-06 U	1.75E-05 J	1.12E-05 J	9.76E-07 U	3.86E-06 J	6.68E-07 U	4.31E-06 J	1.97E-04	1.22E-05 J	1.21E-06 U	1.17E-06 J	1.14E-06 U	8.56E-06 J
2,3',4,5'-Tetrachlorobiphenyl (68)				1.02E-06 U	1.29E-06 U	1.80E-05 U	2.77E-06 U	1.03E-06 U	1.92E-06 U	7.25E-07 U	1.76E-06 U	1.42E-05 J	1.94E-06 U	1.31E-06 U	1.03E-06 U	1.24E-06 U	1.46E-06 J
2,3',5,5'-Tetrachlorobiphenyl (72)				9.59E-07 U	1.23E-06 U	1.70E-05 U	2.67E-06 U	9.95E-07 U	1.84E-06 U	6.87E-07 U	1.67E-06 U	2.74E-05	4.01E-06 J	1.25E-06 U	1.01E-06 U	1.20E-06 U	2.00E-06 J
2,3',5',6-Tetrachlorobiphenyl (73)				1.46E-06 U	1.09E-06 U	3.44E-05 J	9.14E-06 J	1.51E-06 U	3.23E-06 J	1.15E-06 U	3.56E-06 J	1.10E-04	1.06E-05 J	1.74E-06 U	1.34E-06 J	1.42E-06 U	5.83E-06 J
3,3',4,4'-Tetrachlorobiphenyl (77)				2.61E-06 J	2.45E-06 J	1.82E-04 J	1.05E-04	5.26E-06 J	5.27E-05	3.03E-06 J	4.20E-05	5.22E-04	2.07E-04	1.58E-06 J	3.87E-06 J	2.19E-06 J	2.75E-05
3,3',4,5-Tetrachlorobiphenyl (78)				1.02E-06 U	1.29E-06 U	1.95E-05 U	2.81E-06 U	1.07E-06 U	1.98E-06 U	7.44E-07 U	1.80E-06 U	2.50E-06 U	2.07E-06 U	1.40E-06 U	1.07E-06 U	1.30E-06 U	1.23E-06 U
3,3',4,5'-Tetrachlorobiphenyl (79)				8.82E-07 U	1.11E-06 U	6.41E-05 J	1.08E-05 J	9.18E-07 U	3.59E-06 J	6.30E-07 U	5.85E-06 J	5.54E-05	4.83E-05	1.23E-06 U	9.25E-07 U	1.11E-06 U	6.94E-06 J
3,3',5,5'-Tetrachlorobiphenyl (80)				8.82E-07 U	1.11E-06 U	1.63E-05 U	2.42E-06 U	9.37E-07 U	1.73E-06 U	6.49E-07 U	1.58E-06 U	2.13E-06 U	1.76E-06 U	1.19E-06 U	9.25E-07 U	1.11E-06 U	1.06E-06 U
3,4,4',5-Tetrachlorobiphenyl (81)				1.21E-06 U	1.53E-06 U	2.19E-05 U	5.27E-06 J	1.30E-06 U	2.36E-06 U	8.78E-07 U	2.16E-06 U	1.46E-05 J	6.91E-06 J	1.48E-06 U	1.11E-06 U	1.38E-06 U	1.29E-06 U
2,2',3,3',4-Pentachlorobiphenyl (82)				1.98E-06 U	3.12E-06 J	6.80E-04	1.30E-04	5.55E-06 U	4.10E-05	2.08E-06 J	6.33E-05	7.46E-04	5.51E-04	2.22E-06 U	9.27E-06 J	1.63E-06 U	8.51E-05

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016
2,2',3,3',5-Pentachlorobiphenyl (83)				1.92E-06 U	2.27E-06 U	3.44E-04	7.77E-05	2.43E-06 J	1.76E-05 J	2.56E-06 J	4.04E-05	2.43E-04	1.90E-04	2.22E-06 U	5.70E-06 J	1.61E-06 U	3.64E-05
2,2',3,3',6-Pentachlorobiphenyl (84)				3.18E-06 J	5.23E-06 J	1.40E-03	2.67E-04	9.22E-06 J	5.16E-05	8.55E-06 J	1.25E-04	1.29E-03	8.66E-04	4.90E-06 U	3.20E-05	3.57E-06 J	1.97E-04
2,2',3,4,4'-Pentachlorobiphenyl (85) (116) (117)				2.44E-06 J	3.30E-06 J	1.00E-03	1.72E-04	9.37E-06 J	6.10E-05	4.83E-06 J	9.67E-05	9.90E-04	7.65E-04	1.66E-06 U	1.18E-05 J	2.13E-06 J	1.10E-04
2,2',3,4,5-Pentachlorobiphenyl (86)(87)(97)(109)(119)(125)				1.08E-05 J	1.39E-05 J	4.02E-03	8.52E-04	2.93E-05 J	1.99E-04	1.58E-05 J	3.41E-04	3.93E-03	3.29E-03	1.10E-05 J	5.57E-05 J	1.01E-05 J	5.26E-04
2,2',3,4,6-Pentachlorobiphenyl (88) (91)				1.88E-06 U	3.92E-06 J	6.31E-04	1.25E-04	4.13E-06 U	2.36E-05 J	4.66E-06 J	5.83E-05	6.96E-04	4.02E-04	1.95E-06 U	1.47E-05 J	1.49E-06 U	9.28E-05
2,2',3,4,6'-Pentachlorobiphenyl (89)				1.86E-06 U	2.21E-06 U	4.33E-05 J	1.07E-05 J	1.40E-06 U	3.42E-06 U	1.24E-06 U	3.76E-06 J	7.31E-05	2.35E-05	2.01E-06 U	1.71E-06 J	1.51E-06 U	6.63E-06 J
2,2',3,4',5-Pentachlorobiphenyl (90) (101) (113)				1.22E-05 J	1.70E-05 J	5.06E-03	9.95E-04	3.16E-05 J	3.25E-04	2.13E-05 J	3.91E-04	4.24E-03	4.33E-03	1.07E-05 J	7.10E-05	1.14E-05 J	6.62E-04
2,2',3,5,5'-Pentachlorobiphenyl (92)				1.78E-06 U	3.08E-06 J	8.70E-04	1.70E-04	5.18E-06 J	4.02E-05	3.65E-06 J	7.71E-05	7.23E-04	6.89E-04	1.99E-06 U	1.49E-05 J	2.10E-06 J	1.21E-04
2,2',3,5,6-Pentachlorobiphenyl (93) (100)				1.84E-06 U	2.19E-06 U	2.30E-05 U	4.94E-06 J	1.32E-06 U	3.23E-06 U	1.18E-06 U	2.69E-06 U	4.38E-05	1.68E-06 U	1.97E-06 U	1.52E-06 J	1.47E-06 U	1.69E-06 J
2,2',3,5,6'-Pentachlorobiphenyl (94)				2.09E-06 U	2.49E-06 U	2.69E-05 U	3.44E-06 J	1.57E-06 U	3.84E-06 U	1.39E-06 U	3.20E-06 U	3.32E-05	1.04E-05 J	2.18E-06 U	1.23E-06 U	1.71E-06 U	3.25E-06 J
2,2',3,5',6-Pentachlorobiphenyl (95)				8.80E-06 J	1.46E-05 J	3.77E-03	6.54E-04	2.15E-05	1.67E-04	3.77E-05	3.11E-04	3.16E-03	2.34E-03	1.05E-05 J	9.62E-05	9.43E-06 J	5.53E-04
2,2',3,6,6'-Pentachlorobiphenyl (96)				4.60E-07 U	5.77E-07 U	2.27E-05 J	5.08E-06 J	4.59E-07 U	1.11E-06 J	3.24E-07 U	1.87E-06 J	4.45E-05	1.20E-05 J	8.58E-07 U	1.19E-06 J	8.34E-07 U	4.25E-06 J
2,2',3',4,6-Pentachlorobiphenyl (98) (102)				2.11E-06 U	2.51E-06 U	1.30E-04 J	2.80E-05 J	1.61E-06 U	6.41E-06 J	1.43E-06 U	1.19E-05 J	2.07E-04	7.43E-05	2.13E-06 U	3.60E-06 J	1.65E-06 U	1.83E-05 J
2,2',4,4',5-Pentachlorobiphenyl (99)				4.68E-06 J	6.38E-06 J	1.78E-03	3.60E-04	1.04E-05 J	8.03E-05	6.60E-06 J	1.52E-04	2.04E-03	1.70E-03	2.69E-06 J	2.57E-05	3.78E-06 J	2.57E-04
2,2',4,5',6-Pentachlorobiphenyl (103)				1.65E-06 U	1.97E-06 U	2.11E-05 U	3.27E-06 J	1.21E-06 U	2.94E-06 U	1.07E-06 U	2.45E-06 U	2.18E-05	1.15E-05 J	1.74E-06 U	1.21E-06 J	1.30E-06 U	3.10E-06 J
2,2',4,6,6'-Pentachlorobiphenyl (104)				5.18E-07 U	6.16E-07 U	7.47E-06 U	1.19E-06 U	5.17E-07 U	5.95E-07 U	3.82E-07 U	7.78E-07 U	1.28E-06 U	8.51E-07 U	9.17E-07 U	9.46E-07 J	8.73E-07 U	5.19E-07 U
2,3,3',4,4'-Pentachlorobiphenyl (105)				8.09E-06 J	1.02E-05 J	2.52E-03	5.83E-04	2.43E-05	1.88E-04	1.14E-05 J	2.25E-04	2.57E-03	2.14E-03	6.65E-06 J	2.62E-05	5.61E-06 J	2.77E-04
2,3,3',4,5-Pentachlorobiphenyl (106)				1.13E-06 U	1.13E-06 U	2.54E-05 U	3.65E-06 U	1.34E-06 U	2.69E-06 U	1.05E-06 U	2.11E-06 U	3.12E-06 U	2.65E-06 U	1.83E-06 U	1.03E-06 U	1.34E-06 U	1.50E-06 U
2,3,3',4',5-Pentachlorobiphenyl (107)				9.01E-07 U	1.01E-06 J	3.02E-04	7.02E-05	2.56E-06 J	2.10E-05	1.22E-06 J	2.85E-05	2.98E-04	2.93E-04	1.56E-06 U	3.19E-06 J	1.14E-06 U	3.51E-05
2,3,3',4,5'-Pentachlorobiphenyl (108)(124)				1.11E-06 U	1.19E-06 U	2.43E-04 J	5.08E-05	1.93E-06 U	1.45E-05 J	1.05E-06 U	1.95E-05 J	2.06E-04	2.11E-04	1.83E-06 U	3.50E-06 J	1.36E-06 U	2.72E-05 J
2,3,3',4',6-Pentachlorobiphenyl (110)(115)				1.90E-05 J	3.04E-05 J	8.19E-03	1.78E-03	5.74E-05	4.30E-04	3.50E-05 J	8.18E-04	7.06E-03	7.94E-03	1.90E-05 J	1.35E-04	1.64E-05 J	1.12E-03
2,3,3',5,5'-Pentachlorobiphenyl (111)				1.40E-06 U	1.67E-06 U	1.92E-05 U	1.81E-06 U	1.05E-06 U	2.57E-06 U	9.35E-07 U	2.16E-06 U	2.13E-06 U	2.21E-06 U	1.62E-06 U	8.43E-07 U	1.18E-06 U	1.02E-06 U
2,3,3',5,6-Pentachlorobiphenyl (112)				1.44E-06 U	1.71E-06 U	2.01E-05 U	1.85E-06 U	1.09E-06 U	2.67E-06 U	9.73E-07 U	2.22E-06 U	1.92E-06 U	1.24E-06 U	1.46E-06 U	8.23E-07 U	1.14E-06 U	9.80E-07 U
2,3,4,4',5-Pentachlorobiphenyl (114)				1.38E-06 U	1.39E-06 U	1.12E-04 J	2.41E-05	1.66E-06 U	7.87E-06 J	1.30E-06 U	9.21E-06 J	1.21E-04	6.85E-05	2.03E-06 U	1.71E-06 J	1.49E-06 U	1.16E-05 J
2,3',4,4',5-Pentachlorobiphenyl (118)				1.85E-05 J	1.83E-05 J	5.50E-03	1.24E-03	4.82E-05	3.84E-04	2.20E-05	4.50E-04	4.95E-03	5.13E-03	1.15E-05 J	5.81E-05	1.05E-05 J	6.17E-04
2,3',4,5,5'-Pentachlorobiphenyl (120)				1.25E-06 U	1.49E-06 U	1.73E-05 U	3.02E-06 J	9.57E-07 U	2.32E-06 U	8.40E-07 U	1.93E-06 U	6.75E-06 J	1.21E-05 J	1.42E-06 U	7.40E-07 U	1.03E-06 U	1.25E-06 J
2,3',4,5',6-Pentachlorobiphenyl (121)				1.46E-06 U	1.73E-06 U	1.94E-05 U	1.87E-06 U	1.07E-06 U	2.63E-06 U	9.54E-07 U	2.18E-06 U	2.09E-06 U	1.35E-06 U	1.58E-06 U	8.64E-07 U	1.18E-06 U	1.02E-06 U
2',3,3',4,5-Pentachlorobiphenyl (122)				1.11E-06 U	1.11E-06 U	5.50E-05 J	1.22E-05 J	1.36E-06 U	5.05E-06 J	1.09E-06 U	5.00E-06 J	6.28E-05	5.36E-05	1.87E-06 U	1.21E-06 J	1.36E-06 U	7.19E-06 J
2',3,4,4',5-Pentachlorobiphenyl (123)				1.29E-06 U	1.31E-06 U	6.25E-05 J	1.68E-05 J	1.59E-06 U	5.76E-06 J	1.24E-06 U	8.25E-06 J	7.96E-05	7.83E-05	1.99E-06 U	1.11E-06 U	1.47E-06 U	1.04E-05 J
3,3',4,4',5-Pentachlorobiphenyl (126)				1.67E-06 U	1.69E-06 U	5.71E-05 J	2.45E-05	2.03E-06 U	1.64E-05 J	1.51E-06 U	5.60E-06 J	4.41E-05	9.91E-05	2.38E-06 U	1.27E-06 U	1.73E-06 U	4.75E-06 J
3,3',4,5,5'-Pentachlorobiphenyl (127)				1.11E-06 U	1.11E-06 U	2.46E-05 U	3.58E-06 U	1.36E-06 U	2.75E-06 U	1.09E-06 U	2.18E-06 U	9.17E-06 J	1.46E-05 J	1.83E-06 U	1.01E-06 U	1.32E-06 U	1.48E-06 U
2,2',3,3',4,4'-Hexachlorobiphenyl (128)(166)				2.76E-06 J	5.47E-06 J	1.44E-03	3.29E-04	1.14E-05 J	1.23E-04	6.22E-06 J	1.48E-04	1.12E-03	1.83E-03	3.76E-06 J	2.04E-05 J	3.22E-06 J	1.79E-04
2,2',3,3',4,5-Hexachlorobiphenyl (129)(138)(163)				2.56E-05 J	3.09E-05 J	8.43E-03	2.13E-03	8.81E-05	1.58E-03	5.30E-05 J	9.02E-04	6.99E-03	1.35E-02	2.11E-05 J	1.36E-04	1.76E-05 J	1.09E-03
2,2',3,3',4,5'-Hexachlorobiphenyl (130)				1.92E-06 U	1.99E-06 J	5.00E-04	1.22E-04	4.88E-06 J	4.39E-05	3.17E-06 J	5.24E-05	3.75E-04	6.60E-04	2.09E-06 U	8.76E-06 J	1.63E-06 U	6.09E-05
2,2',3,3',4,6-Hexachlorobiphenyl (131)				2.17E-06 U	1.95E-06 U	1.25E-04 J	2.74E-05	2.60E-06 U	7.24E-06 J	1.66E-06 U	1.10E-05 J	8.63E-05	1.20E-04	2.36E-06 U	3.17E-06 J	1.94E-06 U	1.70E-05 J
2,2',3,3',4,6'-Hexachlorobiphenyl (132)				7.25E-06 U	9.98E-06 J	2.86E-03	6.93E-04	2.43E-05	3.44E-04	1.89E-05 J	2.75E-04	2.11E-03	3.58E-03	6.83E-06 J	5.53E-05	6.15E-06 J	3.54E-04
2,2',3,3',5,5'-Hexachlorobiphenyl (133)				1.76E-06 U	1.59E-06 U	8.28E-05 J	1.97E-05 J	2.05E-06 U	1.08E-05 J	1.30E-06 U	8.83E-06 J	5.69E-05	1.03E-04	1.91E-06 U	1.99E-06 J	1.53E-06 U	9.65E-06 J
2,2',3,3',5,6-Hexachlorobiphenyl (134)				2.30E-06 U	2.07E-06 U	3.91E-04	9.41E-05	2.62E-06 J	3.65E-05	2.65E-06 U	3.48E-05	3.07E-04	5.08E-04	2.46E-06 U	9.15E-06 J	1.96E-06 U	5.98E-05
2,2',3,3',5,6'-Hexachlorobiphenyl (135)(151)				7.63E-06 J	8.13E-06 J	1.74E-03	4.48E-04	1.64E-05 J	5.83E-04	2.38E-05 J	1.63E-04	1.28E-03	2.44E-03	6.81E-06 J	4.97E-05	4.72E-06 J	2.15E-04
2,2',3,3',6,6'-Hexachlorobiphenyl (136)				2.17E-06 J	3.20E-06 J	7.20E-04	1.53E-04	5.15E-06 J	1.25E-04	1.21E-05 J	5.65E-05	4.64E-04	7.70E-04	2.73E-06 J	1.93E-05 J	1.67E-06 J	8.49E-05
2,2',3,4,4',5-Hexachlorobiphenyl (137)				1.75E-06 U	2.03E-06 J	4.80E-04	1.04E-04	3.44E-06 J	2.48E-05	2.29E-06 J	4.88E-05	3.61E-04	4.52E-04	1.99E-06 U	6.17E-06 J	1.53E-06 U	5.48E-05
2,2',3,4,4',6-Hexachlorobiphenyl (139)(140)				1.67E-06 U	1.51E-06 U	1.23E-04 J	3.09E-05 J	1.93E-06 U	7.51E-06 J	1.24E-06 U	1.20E-05 J	9.00E-05	1.40E-04	1.83E-06 U	2.92E-06 J	1.46E-06 U	1.51E-05 J
2,2',3,4,5,5'-Hexachlorobiphenyl (141)				5.35E-06 J	4.79E-06 J	1.18E-03	3.58E-04	1.35E-05 J	3.58E-04	8.40E-06 J	1.21E-04	1.05E-03	2.17E-03	3.82E-06 J	2.38E-05	3.05E-06 J	1.58E-04
2,2',3,4,5,6-Hexachlorobiphenyl (142)				1.99E-06 U	1.79E-06 U	3.69E-05 U	8.54E-06 U	2.28E-06 U	4.26E-06 U	1.45E-06 U	3.36E-06 U	3.33E-06 U	2.73E-06 U	2.03E-06 U	1.01E-06 U	1.63E-06 U	1.50E-06 U
2,2',3,4,5,6'-Hexachlorobiphenyl (143)				1.86E-06 U	1.67E-06 U	3.52E-05 U	7.98E-06 U	2.12E-06 U	3.99E-06 U	1.36E-06 U	3.14E-06 U	1.42E-05 J	3.48E-05	1.87E-06 U	9.66E-07 U	1.55E-06 U	9.61E-06 J
2,2',3,4,5',6-Hexachlorobiphenyl (144)				1.09E-06 U	1.33E-06 J	2.72E-04	6.43E-05	2.31E-06 J	7.04E-05	2.98E-06 J	2.63E-05	2.04E-04	3.63E-04	1.21E-06 J	6.99E-06 J	1.09E-06 U	3.31E-05
2,2',3,4,6,6'-Hexachlorobiphenyl (145)				8.44E-07 U	8.55E-07 U	6.57E-06 U	1.21E-06 U	7.46E-07 U	8.45E-07 U	4.20E-07 U	7.56E-07 U	1.94E-06 J	2.13E-06 J	1.01E-06 U	5.96E-07 U	9.70E-07 U	5.77E-07 U
2,2',3,4',5,5'-Hexachlorobiphenyl (146)				2.59E-06 U	3.24E-06 J	7.28E-04	1.99E-04	7.67E-06 J	1.55E-04	4.91E-06 J	8.41E-05	5.28E-04	1.07E-03	1.83E-06 J	1.32E-05 J	1.61E-06 J	8.77E-05
2,2',3,4',5,6-Hexachlorobiphenyl (147)(149)				1.61E-05 J	1.88E-05 J	4.57E-03	1.28E-03	4.07E-05	1.23E-03	4.24E-05	4.51E-04	3.42E-03	6.23E-03	1.32E-05 J	1.12E-04	9.80E-06 J	5.83E-04
2,2',3,4',5,6'-Hexachlorobiphenyl (148)				9.78E-07 U	9.74E-07 U	7.51E-06 U	1.42E-06 J	8.61E-07 U	1.02E-06 U	4.96E-07 U	8.89E-07 U	3.68E-06 J	7.22E-06 J	1.15E-06 U	6.79E-07 U	1.09E-06 U	6.54E-07 U
2,2',3,4',6,6'-Hexachlorobiphenyl (150)				8.25E-07 U	8.35E-07 U	6.51E-06 U	3.15E-06 J	7.46E-07 U	1.44E-06 J	4.20E-07 U	7.56E-07 U	5.41E-06 J	1.29E-05 J	9.75E-07 U	5.76E-07 U	9.31E-07 U	8.46E-07 J
2,2',3,5,6,6'-Hexachlorobiphenyl (152)				7.48E-07 U	7.56E-07 U	5.73E-06 U	1.06E-06 U	6.50E-07 U	7.30E-07 U	3.63E-07 U	6.67E-07 U	3.72E-06 J	4.47E-06 J	8.78E-07 U	5.14E-07 U	8.54E-07 U	7.11E-07 J
2,2',4,4',5,5'-Hexachlorobiphenyl (153)(168)				2.75E-05 J	1.92E-05 J	4.76E-03	1.42E-03	5.39E-05	1.76E-03	3.43E-05 J	4.93E-04	4.01E-03	8.23E-03	1.28E-05 J	8.36E-05	1.08E-05 J	6.09E-04
2,2',4,4',5,6'-Hexachlorobiphenyl (154)				8.44E-07 U	8.55E-07 U	4.50E-05 J	1.31E-05 J	7.65E-07 U	6.16E-06 J	6.87E-07 J	3.98E-06 J	3.11E-05	7.18E-05	1.05E-06 U	1.27E-06 J	9.70E-07 U	5.17E-06 J
2,2',4,4',6,6'-Hexachlorobiphenyl (155)				8.06E-07 U	7.76E-07 U	5.48E-06 U	1.04E-06 U	6.70E-07 U	8.26E-07 U	4.01E-07 U	7.34E-07 U	7.85E-07 U	6.58E-07 U	8.19E-07 U	5.14E-07 U	7.76E-07 U	4.81E-07 U
2,3,3',4,4',5-Hexachlorobiphenyl (156)*157)				3.41E-06 J	4.79E-06 J	1.19E-03	2.88E-04	1.15E-05 J	1.25E-04	5.69E-06 J	1.13E-04	8.70E-04	1.40E-03	3.32E-06 J	1.28E-05 J	2.44E-06 J	1.22E-04
2,3,3',4,4',6-Hexachlorobiphenyl (158)				2.55E-06 J	3.00E-06 J	7.77E-04	2.04E-04	9.28E-06 J	1.24E-04	4.24E-06 J	8.50E-05	6.51E-04	1.21E-03	2.11E-06 J	1.30E-05 J	1.94E-06 U	9.94E-05
2,3,3',4,5,5'-Hexachlorobiphenyl (159)				8.82E-07 U	8.55E-07 U	3.78E-05 J	3.19E-06 U	1.22E-06 U	1.94E-06 U	8.40E-07 U	1.40E-06 U	2.64E-06 U	2.94E-06 U	1.27E-06 U	6.37E-07 U	9.31E-07 U	1.00E-06 U
2,3,3',4,5,6-Hexachlorobiphenyl (160)				1.65E-06 U	1.47E-06 U	3.15E-05 U	7.04E-06 U	1.97E-06 U	3.71E-06 U	1.26E-06 U	2.91E-06 U	2.83E-06 U	2.32E-06 U	1.74E-06 U	8.43E-07 U	1.36E-06 U	1.25E-06 U
2,3,3',4',5,6-Hexachlorobiphenyl (161)				1.38E-06 U	1.25E-06 U	2.65E-05 U	5.96E-06 U	1.59E-06 U	2.98E-06 U	1.01E-06 U	2.33E-06 U	2.29E-06 U	1.88E-06 U	1.40E-06 U	6.79E-07 U	1.11E-06 U	1.02E-06 U
2,3,3',4',5,5'-Hexachlorobiphenyl (162)				9.40E-07 U	9.15E-07 U	3.84E-05 J	3.42E-06 U	1.34E-06 U	2.11E-06 U	9.16E-07 U	4.11E-06 J	2.18E-05	4.62E-05	1.37E-06 U	6.79E-07 U	1.01E-06 U	4.15E-06 J
2,3,3',4',5',6-Hexachlorobiphenyl (164)				1.46E-06 J	2.49E-06 J	4.85E-04	1.29E-04	5.18E-06 J	9.08E-05	3.23E-06 J	5.04E-05	3.83E-04	8.43E-04	1.46E-06 U	1.01E-05 J	1.42E-06 J	6.37E-05
2,3,3',5,5',6-Hexachlorobiphenyl (165)				1.50E-06 U	1.35E-06 U	2.93E-05 U	6.44E-06 U	1.74E-06 U	3.28E-06 U	1.11E-06 U	2.56E-06 U	2.77E-06 U	2.26E-06 U	1.68E-06 U	8.02E-07 U	1.32E-06 U	1.21E-06 U
2,3',4,4',5,5'-Hexachlorobiphenyl (167)				1.25E-06 J	1.71E-06 J	3.72E-04	1.01E-04	4.57E-06 J	4.53E-05	1.89E-06 J	4.16E-05	2.64E-04	5.08E-04	1.27E-06 U	4.79E-06 J	1.03E-06 J	3.91E-05
3,3',4,4',5,5'-Hexachlorobiphenyl (169)				1.21E-06 U	1.23E-06 U	2.65E-05 U	9.08E-06 J	1.86E-06 U	1.49E-05 J	1.13E-06 U	2.98E-06 J	9.85E-06 J	2.67E-05	1.50E-06 U	7.20E-07 U	1.09E-06 U	1.15E-06 U
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)				1.59E-05 J	7.02E-06 J	1.23E-03	4.83E-04	2.04E-05	9.77E-04	1.44E-05 J	1.66E-04	1.12E-03	3.14E-03	4.72E-06 J	1.74E-05 J	3.43E-06 J	1.49E-04

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)(173)				4.37E-06 J	2.62E-06 J	3.73E-04 J	1.39E-04	5.74E-06 J	2.74E-04	4.37E-06 J	4.78E-05	3.38E-04	8.77E-04	1.76E-06 U	8.29E-06 J	1.44E-06 J	4.67E-05
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)				3.07E-06 J	1.81E-06 J	2.13E-04	9.45E-05	3.98E-06 J	1.92E-04	2.60E-06 J	2.94E-05	1.91E-04	5.16E-04	1.74E-06 U	3.80E-06 J	1.28E-06 U	2.56E-05
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)				2.25E-05	7.22E-06 J	1.15E-03	4.97E-04	1.87E-05 J	1.46E-03	1.60E-05 J	1.49E-04	1.04E-03	2.65E-03	5.11E-06 J	2.65E-05	4.31E-06 J	1.46E-04
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)				5.56E-07 U	9.54E-07 U	5.12E-05 J	2.16E-05	1.13E-06 U	4.77E-05	8.97E-07 U	5.96E-06 J	4.54E-05	1.11E-04	1.17E-06 U	1.60E-06 J	1.07E-06 U	6.88E-06 J
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)				1.94E-06 J	8.15E-07 J	1.27E-04 J	5.18E-05	1.61E-06 J	1.43E-04	1.87E-06 J	1.49E-05 J	1.11E-04	2.53E-04	8.97E-07 U	4.07E-06 J	8.34E-07 U	1.55E-05 J
2,2',3,3',4',5,6-Heptachlorobiphenyl (177)				9.86E-06 J	4.04E-06 J	6.30E-04	2.79E-04	1.02E-05 J	7.05E-04	8.44E-06 J	8.54E-05	5.92E-04	1.63E-03	2.40E-06 J	1.42E-05 J	2.35E-06 J	7.95E-05
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)				4.24E-06 J	1.73E-06 J	2.04E-04	9.66E-05	3.44E-06 J	2.87E-04	3.17E-06 J	2.89E-05	1.82E-04	4.56E-04	1.23E-06 U	5.16E-06 J	1.24E-06 J	2.51E-05
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)				6.14E-06 J	2.72E-06 J	3.83E-04	1.60E-04	5.03E-06 J	5.34E-04	7.67E-06 J	4.43E-05	3.37E-04	7.60E-04	2.09E-06 J	1.17E-05 J	1.98E-06 J	4.72E-05
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)(193)				7.34E-05	1.61E-05 J	2.56E-03	1.22E-03	4.92E-05	3.73E-03	3.31E-05 J	3.72E-04	2.49E-03	6.58E-03	1.04E-05 J	4.19E-05	8.42E-06 J	3.16E-04
2,2',3,4,4',5,6-Heptachlorobiphenyl (181)				1.67E-06 U	1.33E-06 U	2.54E-05 U	4.73E-06 U	1.38E-06 U	2.30E-06 U	1.18E-06 U	2.85E-06 U	1.31E-05 J	2.26E-05	1.81E-06 U	6.58E-07 U	1.34E-06 U	2.23E-06 J
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)				5.56E-07 U	9.54E-07 U	9.51E-06 U	3.25E-06 J	1.13E-06 U	2.80E-06 J	8.97E-07 U	1.13E-06 U	5.76E-06 J	1.98E-05	1.17E-06 U	5.35E-07 U	1.07E-06 U	1.23E-06 J
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)(185)				1.69E-05 J	5.23E-06 J	7.97E-04	3.73E-04	1.25E-05 J	1.09E-03	1.08E-05 J	1.09E-04	7.40E-04	1.78E-03	3.51E-06 J	1.92E-05 J	3.65E-06 J	9.47E-05
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)				4.41E-07 U	7.56E-07 U	7.51E-06 U	2.08E-06 J	8.80E-07 U	9.41E-07 U	7.06E-07 U	8.89E-07 U	1.90E-06 J	4.49E-06 J	8.97E-07 U	4.11E-07 U	8.54E-07 U	5.96E-07 U
2,2',3,4,5,6,6'-Heptachlorobiphenyl (186)				4.79E-07 U	8.15E-07 U	8.07E-06 U	2.04E-06 U	9.37E-07 U	9.99E-07 U	7.44E-07 U	9.34E-07 U	1.40E-06 U	8.32E-07 U	9.95E-07 U	4.52E-07 U	9.31E-07 U	6.54E-07 U
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)				3.46E-05	8.73E-06 J	1.28E-03	6.06E-04	2.17E-05	2.14E-03	2.18E-05	1.73E-04	1.29E-03	3.09E-03	5.97E-06 J	3.21E-05	5.47E-06 J	1.67E-04
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)				4.99E-07 U	8.55E-07 U	7.97E-06 U	2.69E-06 J	9.37E-07 U	2.38E-06 J	8.02E-07 U	1.02E-06 U	2.56E-06 J	7.80E-06 J	8.78E-07 U	4.11E-07 U	8.34E-07 U	5.77E-07 U
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)				9.97E-07 U	8.35E-07 U	6.55E-05 J	2.54E-05	1.21E-06 J	2.85E-05	1.07E-06 J	8.40E-06 J	5.19E-05	1.31E-04	1.46E-06 U	9.87E-07 U	1.14E-06 U	6.42E-06 J
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)				5.45E-06 J	1.41E-06 J	2.33E-04	1.00E-04	3.81E-06 J	2.56E-04	3.03E-06 J	3.51E-05	2.15E-04	6.25E-04	1.31E-06 U	3.52E-06 J	9.70E-07 J	2.77E-05
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)				1.29E-06 U	1.03E-06 U	4.15E-05 J	2.05E-05 J	1.07E-06 U	3.90E-05	9.35E-07 U	6.74E-06 J	4.29E-05	1.19E-04	1.27E-06 U	1.09E-06 J	9.31E-07 U	6.34E-06 J
2,3,3',4,5,5',6-Heptachlorobiphenyl (192)				1.50E-06 U	1.21E-06 U	2.40E-05 U	4.27E-06 U	1.26E-06 U	2.11E-06 U	1.11E-06 U	2.62E-06 U	2.23E-06 U	1.74E-06 U	1.50E-06 U	5.35E-07 U	1.11E-06 U	8.27E-07 U
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)				4.94E-05	4.71E-06 J	4.70E-04	2.75E-04	1.16E-05 J	1.21E-03	8.72E-06 J	8.19E-05	5.15E-04	1.07E-03	2.38E-06 U	5.80E-06 J	2.23E-06 J	5.59E-05
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)				1.33E-05 J	1.65E-06 J	1.75E-04 J	9.28E-05	3.60E-06 J	4.30E-04	3.80E-06 J	2.82E-05	1.73E-04	4.31E-04	1.38E-06 U	2.47E-06 J	1.14E-06 U	2.08E-05
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)				2.37E-05	2.09E-06 J	2.60E-04	1.38E-04	5.07E-06 J	6.19E-04	3.55E-06 J	3.81E-05	2.64E-04	5.28E-04	1.85E-06 U	3.78E-06 J	1.47E-06 J	3.00E-05
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)(200)				7.08E-06 J	1.13E-06 J	8.23E-05 J	4.43E-05	1.74E-06 J	2.15E-04	1.57E-06 J	1.22E-05 J	8.55E-05	1.51E-04	9.95E-07 U	2.57E-06 J	1.14E-06 J	1.05E-05 J
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)(199)				5.61E-05	4.79E-06 J	6.09E-04	3.33E-04	1.23E-05 J	1.55E-03	9.81E-06 J	9.10E-05	6.57E-04	1.07E-03	3.06E-06 J	9.15E-06 J	2.93E-06 J	7.03E-05
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)				4.97E-06 J	7.95E-07 J	6.72E-05 J	4.23E-05	1.13E-06 J	1.60E-04	9.54E-07 J	8.72E-06 J	6.88E-05	1.05E-04	9.75E-07 U	1.75E-06 J	8.15E-07 U	8.27E-06 J
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)				8.00E-06 J	1.67E-06 J	9.49E-05 J	6.37E-05	1.76E-06 J	2.73E-04	2.35E-06 J	1.59E-05 J	1.12E-04	1.46E-04	1.52E-06 J	2.20E-06 J	1.38E-06 J	1.23E-05 J
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)				4.21E-05	3.52E-06 J	3.97E-04	2.12E-04	8.13E-06 J	9.81E-04	5.34E-06 J	5.95E-05	4.26E-04	6.94E-04	2.36E-06 J	5.33E-06 J	1.63E-06 J	4.49E-05
2,2',3,4,4',5,6,6'-Octachlorobiphenyl (204)				1.34E-06 U	7.76E-07 U	1.40E-05 U	2.85E-06 U	8.42E-07 U	6.91E-07 U	6.11E-07 U	1.13E-06 U	8.88E-07 U	7.55E-07 U	9.75E-07 U	3.91E-07 U	8.15E-07 U	5.00E-07 U
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)				3.01E-06 J	8.35E-07 U	3.20E-05 J	1.65E-05 J	1.49E-06 U	6.15E-05	1.05E-06 U	4.54E-06 J	2.47E-05	5.67E-05	1.19E-06 U	6.58E-07 J	9.70E-07 U	2.79E-06 J
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)				4.62E-05	3.50E-06 J	2.85E-04	1.87E-04	5.28E-06 J	5.20E-04	4.31E-06 J	4.49E-05	3.69E-04	2.51E-04	1.52E-06 J	3.15E-06 J	1.79E-06 U	3.30E-05
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)				4.72E-06 J	9.54E-07 U	4.02E-05 J	2.22E-05	1.17E-06 U	6.13E-05	7.44E-07 U	5.38E-06 J	4.17E-05	3.37E-05	9.95E-07 U	9.46E-07 J	8.54E-07 U	4.09E-06 J
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)				8.17E-06 J	1.49E-06 J	7.46E-05 J	4.44E-05	1.42E-06 U	1.05E-04	1.13E-06 J	1.30E-05 J	9.56E-05	4.92E-05	1.09E-06 U	1.21E-06 J	1.03E-06 J	8.82E-06 J
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (209)				4.83E-06 J	2.31E-06 J	8.73E-05 J	4.49E-05	3.19E-06 J	2.36E-05	2.40E-06 J	1.68E-05 J	9.35E-05	4.31E-05	1.68E-06 U	2.20E-06 J	1.96E-06 J	8.27E-06 J
PCB Homologs (ug/l)																	
Monochlorobiphenyl				8.80E-06 J	8.67E-06 J	5.66E-05 J	2.46E-05	7.19E-06 J	6.53E-06 J	5.06E-06 J	1.12E-05 J	1.66E-04	1.62E-05 J	0.00E+00 U	5.33E-06 J	3.32E-06 J	2.60E-06 J
Dichlorobiphenyl				7.36E-05	9.60E-05	7.23E-04	4.68E-04	9.63E-05	1.48E-04	8.54E-05	1.40E-04	4.95E-03	2.44E-04	8.70E-05	1.13E-04	1.03E-04	2.39E-04
Trichlorobiphenyl				8.05E-05	1.33E-04	1.95E-03	1.07E-03	9.69E-05	4.00E-04	1.01E-04	3.63E-04	2.77E-02	4.28E-04	8.66E-05	9.70E-05	9.99E-05	9.38E-04
Tetrachlorobiphenyl				9.75E-05	1.51E-04	8.38E-03	3.18E-03	1.63E-04	9.13E-04	1.39E-04	1.32E-03	4.71E-02	3.28E-03	7.97E-05	1.90E-04	1.03E-04	2.29E-03
Pentachlorobiphenyl				8.76E-05	1.30E-04	3.68E-02	7.66E-03	2.52E-04	2.09E-03	1.77E-04	3.24E-03	3.39E-02	3.13E-02	7.20E-05	5.76E-04	7.52E-05	4.79E-03
Hexachlorobiphenyl				9.58E-05	1.21E-04	3.13E-02	8.23E-03	3.05E-04	6.87E-03	2.28E-04	3.19E-03	2.47E-02	4.63E-02	7.95E-05	5.95E-04	6.35E-05	3.96E-03
Heptachlorobiphenyl				1.98E-04	5.95E-05	9.35E-03	4.17E-03	1.57E-04	1.19E-02	1.28E-04	1.28E-03	8.80E-03	2.28E-02	3.42E-05	1.90E-04	3.33E-05	1.16E-03
Octachlorobiphenyl				2.08E-04	2.04E-05	2.19E-03	1.22E-03	4.53E-05	5.49E-03	3.61E-05	3.40E-04	2.33E-03	4.25E-03	6.94E-06 J	3.37E-05	1.08E-05 J	2.56E-04
Nonachlorobiphenyl				5.91E-05	4.99E-06 J	4.00E-04	2.54E-04	5.28E-06 J	6.87E-04	5.44E-06 J	6.33E-05	5.07E-04	3.34E-04	1.52E-06 J	5.31E-06 J	1.03E-06 J	4.59E-05
Decachlorobiphenyl				4.83E-06 J	2.31E-06 J	8.73E-05 J	4.49E-05	3.19E-06 J	2.36E-05	2.40E-06 J	1.68E-05 J	9.35E-05	4.31E-05	1.95E-05 U	2.20E-06 J	1.96E-06 J	8.27E-06 J
Total Detected PCBs (Method 1668)	6.40E-05	6.40E-06	3.00E-01	9.14E-04	7.27E-04	9.13E-02	2.63E-02	1.13E-03	2.85E-02	9.08E-04	9.96E-03	1.50E-01	1.09E-01	4.47E-04	1.81E-03	4.95E-04	1.37E-02
Phthalates (ug/l)																	
Bis(2-ethylhexyl) phthalate	2.2	0.2	5	1.5	0.22 U	15	0.67	0.37 J	0.46	3.3	0.47	2.3	0.45	0.19 U	0.19 U	0.19 U	0.24 J
Butylbenzyl phthalate	3			0.19 U	0.22 U	1.9 U	0.22 U	0.19 U	0.21 U	0.21 U	0.19 U	0.95 J	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Dibutyl phthalate	3			0.19 U	0.22 U	1.9 U	0.22 U	0.19 U	0.21 U	0.21 U	0.19 U	0.78 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Diethyl phthalate	3			0.19 U	0.22 U	1.9 U	0.22 U	0.19 U	0.21 U	0.21 U	0.19 U	0.78 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Dimethyl phthalate	3			0.19 U	0.22 U	1.9 U	0.22 U	0.19 U	0.21 U	0.21 U	0.19 U	0.78 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Di-n-octyl phthalate	3			1.1	0.22 U	1.9 U	0.22 U	0.19 U	0.21 U	0.21 U	0.19 U	0.78 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Pesticides (ug/l)																	
2,4'-DDD	3.10E-04	3.10E-05															
2,4'-DDE	2.20E-04	1.80E-05															
2,4'-DDT	2.00E-01	2.20E-05															
4,4'-DDD	3.10E-04	3.10E-05															
4,4'-DDE	2.20E-04	1.80E-05															
4,4'-DDT	2.20E-04	2.20E-05															
Total DDx		1.00E-02															
Aldrin	5.00E-05	7.70E-07															
alpha-BHC	4.90E-03																

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016
beta-BHC	1.70E-02																
cis-Chlordane	8.10E-04	8.10E-05															
cis-Nonachlor	1.90E-01																
Chlordane Technical		8.10E-05															
delta-BHC	5.20E-02																
Dieldrin	5.40E-05																
Endosulfan I	5.10E-02																
Endosulfan II	5.10E-02																
Endosulfan sulfate	8.90E+01																
Endrin	3.60E-02																
Endrin aldehyde																	
Endrin ketone																	
gamma-BHC	3.70E-02																
Heptachlor	7.90E-05																
Heptachlor epoxide	3.90E-05																
Hexachlorobenzene	2.90E-04	2.90E-05															
Hexachlorobutadiene	8.60E-01																
Hexachloroethane	3.30E+00																
Methoxychlor	3.00E-02																
Mirex	NC																
Oxychlordane	1.90E-01	8.10E-05															
Toxaphene	2.00E-04																
trans-Chlordane	8.10E-04	8.10E-05															
trans-Nonachlor	1.90E-01																
Dioxins (ug/l)																	
1,2,3,4,6,7,8-HeptaCDD				6.13E-06 J	8.16E-06 J	9.30E-04	1.46E-05 J	6.77E-06 J	1.81E-05 J	1.78E-05 J	7.54E-05	8.32E-05	1.87E-05 J	5.98E-06 J	2.33E-05 J	1.23E-05 J	3.18E-05 J
1,2,3,4,6,7,8-HeptaCDF				1.36E-06 J	1.76E-06 J	1.81E-04	4.61E-06 J	1.23E-06 J	9.80E-06 J	1.08E-05 J	6.08E-06 J	1.27E-05 J	9.52E-06 J	1.01E-06 J	2.84E-06 J	1.44E-06 J	6.09E-06 J
1,2,3,4,7,8,9-HeptaCDF				5.67E-07 U	7.70E-07 U	1.33E-05 J	7.70E-07 U	5.40E-07 U	4.79E-07 J	5.19E-07 U	6.66E-07 U	1.07E-06 U	1.35E-06 U	7.26E-07 U	8.52E-07 U	7.55E-07 U	9.10E-07 U
1,2,3,4,7,8-HexaCDD				8.11E-07 U	9.44E-07 U	1.50E-05 J	1.04E-06 U	7.09E-07 U	7.36E-07 U	7.43E-07 U	1.72E-06 J	1.34E-06 J	9.23E-07 J	8.37E-07 U	9.27E-07 J	9.03E-07 U	8.43E-07 J
1,2,3,4,7,8-HexaCDF				5.15E-07 U	4.99E-07 U	1.30E-05 J	5.60E-07 J	5.05E-07 U	4.60E-07 J	5.38E-07 U	6.18E-07 J	1.34E-06 J	1.33E-06 J	3.86E-07 U	5.17E-07 U	5.32E-07 U	7.51E-07 U
1,2,3,6,7,8-HexaCDD				7.55E-07 U	8.78E-07 U	5.59E-05	9.65E-07 U	7.50E-07 J	1.25E-06 J	8.04E-07 J	2.47E-06 J	4.93E-06 J	1.23E-06 J	7.80E-07 U	1.42E-06 J	8.40E-07 U	1.49E-06 J
1,2,3,6,7,8-HexaCDF				4.86E-07 U	4.71E-07 U	1.17E-05 J	5.60E-07 J	4.77E-07 U	6.13E-07 J	9.19E-07 J	6.98E-07 J	1.58E-06 J	1.15E-06 J	3.63E-07 U	4.87E-07 U	5.01E-07 U	7.09E-07 U
1,2,3,7,8,9-HexaCDD				7.99E-07 U	9.28E-07 U	3.03E-05 J	1.02E-06 U	7.00E-07 U	1.13E-06 J	8.42E-07 J	2.19E-06 J	3.43E-06 J	1.44E-06 J	8.25E-07 U	1.64E-06 J	8.89E-07 U	1.23E-06 J
1,2,3,7,8,9-HexaCDF				6.05E-07 U	5.86E-07 U	5.39E-06 J	6.12E-07 U	5.94E-07 U	5.20E-07 U	6.32E-07 U	5.55E-07 U	7.70E-07 U	4.67E-07 U	4.52E-07 U	6.07E-07 U	6.25E-07 U	8.81E-07 U
1,2,3,7,8-PentaCDD				6.07E-07 U	5.51E-07 U	9.26E-06 J	7.47E-07 J	5.80E-07 U	5.18E-07 U	4.40E-07 J	9.97E-07 J	1.67E-06 J	1.71E-06 J	4.72E-07 U	6.43E-07 U	5.64E-07 U	7.47E-07 J
1,2,3,7,8-PentaCDF				5.19E-07 J	5.19E-07 J	3.31E-06 J	6.85E-07 J	5.57E-07 J	6.71E-07 J	3.02E-07 U	6.38E-07 J	8.67E-07 J	1.19E-06 J	3.24E-07 U	4.89E-07 U	6.49E-07 J	5.21E-07 U
2,3,4,6,7,8-HexaCDF				5.13E-07 U	4.97E-07 U	1.72E-05 J	5.39E-07 J	5.04E-07 U	8.44E-07 J	6.12E-07 J	9.58E-07 J	1.46E-06 J	1.88E-06 J	3.84E-07 U	5.15E-07 U	5.30E-07 U	7.49E-07 U
2,3,4,7,8-PentaCDF				3.30E-07 U	3.61E-07 U	7.43E-06 J	3.86E-07 U	4.61E-07 J	3.49E-07 U	2.76E-07 U	5.19E-07 J	1.52E-06 J	2.33E-06 J	2.97E-07 U	4.48E-07 U	5.86E-07 U	4.75E-07 U
2,3,7,8-TetraCDD	5.1E-09	5E-10		4.80E-07 U	6.34E-07 U	1.54E-06 J	5.35E-07 U	5.13E-07 U	4.16E-07 U	4.23E-07 U	5.17E-07 U	5.56E-07 U	5.21E-07 U	6.04E-07 U	6.63E-07 U	6.05E-07 U	6.03E-07 U
2,3,7,8-TetraCDF				5.19E-07 U	6.50E-07 U	2.58E-06 J	6.08E-07 U	6.03E-07 U	5.56E-07 U	4.82E-07 U	6.96E-07 U	1.10E-06 U	2.56E-06 J	5.49E-07 U	6.07E-07 U	6.66E-07 U	6.51E-07 U
OCDD				2.48E-05 J	3.12E-05 J	6.07E-03	8.17E-05 J	3.09E-05 J	9.14E-05 J	1.05E-04	7.62E-04	5.53E-04	8.88E-05 J	1.95E-05 J	7.58E-05 J	4.22E-05 J	3.12E-04
OCDF				1.98E-06 J	3.57E-06 J	3.72E-04	1.37E-05 J	2.48E-06 J	9.97E-06 J	1.32E-05 J	2.11E-05 J	3.40E-05 J	1.04E-05 J	1.71E-06 U	4.81E-06 J	3.31E-06 J	3.42E-05 J
HeptaCDD homologs				1.23E-05 J	1.64E-05 J	1.60E-03	3.26E-05 J	1.57E-05 J	3.80E-05 J	3.40E-05 J	3.29E-04	1.72E-04	3.95E-05 J	1.41E-05 J	5.42E-05	2.67E-05 J	5.97E-05
HeptaCDF homologs				4.46E-07 U	6.06E-07 U	5.04E-04	1.04E-05 J	4.25E-07 U	1.50E-05 J	1.61E-05 J	2.08E-05 J	3.36E-05 J	1.72E-05 J	5.71E-07 U	5.07E-06 J	1.46E-06 J	2.08E-05 J
HexaCDD homologs				7.55E-07 U	3.45E-06 J	3.15E-04	6.76E-06 J	4.50E-06 J	1.15E-05 J	8.04E-07 J	4.45E-05 J	3.22E-05 J	1.02E-05 J	1.59E-06 J	2.20E-05 J	8.28E-06 J	2.34E-06 J
HexaCDF homologs				5.76E-07 J	1.84E-06 J	3.63E-04	1.58E-06 J	7.88E-07 J	1.06E-05 J	9.15E-06 J	1.12E-05 J	1.74E-05 J	2.40E-05 J	5.43E-07 J	1.83E-06 J	1.01E-06 J	4.58E-06 J
PentaCDD homologs				6.07E-07 U	5.51E-07 U	5.37E-05	7.47E-07 J	5.80E-07 U	2.13E-06 J	4.40E-07 J	1.48E-06 J	1.67E-06 J	1.04E-06 J	4.72E-07 U	1.70E-06 J	8.32E-07 J	7.47E-07 J
PentaCDF homologs				5.19E-07 J	9.18E-07 J	1.50E-04	2.30E-06 J	5.57E-07 J	5.20E-06 J	1.51E-06 J	3.35E-06 J	1.66E-05 J	3.28E-05 J	2.39E-07 U	6.31E-07 J	1.18E-06 J	3.47E-07 U
TetraCDD homologs				4.80E-07 U	6.34E-07 U	8.18E-06 J	5.35E-07 U	5.13E-07 U	4.16E-07 U	4.23E-07 U	5.17E-07 U	7.49E-07 J	8.84E-07 J	6.04E-07 U	1.12E-06 J	6.05E-07 U	6.03E-07 U
TetraCDF homologs				5.19E-07 U	6.50E-07 U	1.76E-05	6.08E-07 U	6.03E-07 U	8.63E-07 J	4.82E-07 U	6.96E-07 U	5.32E-06 J	1.63E-05	5.49E-07 U	6.07E-07 U	6.66E-07 U	6.51E-07 U
Total Dioxin TEQ (ND=DL/2)	5.1E-09	5E-10		9.44E-07	1.05E-06	4.14E-05	1.70E-06	1.07E-06	1.37E-06	1.46E-06	3.41E-06	5.07E-06	4.10E-06	8.96E-07	1.55E-06	1.12E-06	2.16E-06
Total Dioxin TEQ (ND=0)	5.1E-09	5E-10		9.85E-08	1.25E-07	4.14E-05	1.15E-06	3.20E-07	7.64E-07	1.08E-06	3.09E-06	4.70E-06	3.81E-06	7.58E-08	6.84E-07	1.71E-07	1.59E-06
Butyltins (ug/l)																	
Butyltin ion				0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U
Dibutyltin ion				0.0047 J	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U
Tributyltin ion	0.072	0.063		0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U
Total Metals (ug/l)																	
Aluminum				32 J	28 J	2100	452	39 J	39 J	110	197	958	230	25 U	26 J	35 J	472

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016
Antimony	6			3.1	0.5 U	6.7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.4	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Arsenic	0.045	0.02	2	0.50 U	0.50 U	1.8	0.50 U	0.50 U	4.4	0.50 U	0.50 U	0.96 J	0.50 U	0.50 U	0.50 U	0.50 U	0.58 J
Cadmium	0.094		0.7	0.13 J	0.044 J	0.61	0.089 J	0.10 J	0.078 J	0.040 U	0.040 U	0.48	0.10 J	0.040 U	0.067 J	0.040 U	0.044 J
Chromium	100	100	10	0.50 U	0.50 U	10	4.5	0.60 J	2.6	0.54 J	5.2	18	1.6	0.50 U	0.50 U	0.50 U	2.6
Copper	2.7	3	60	1.4	0.92 J	59	5.1	2.9	18	3.1	4.9	25	8.5	1.0 J	2.2	1.0 J	4.5
Lead	0.54		50	0.31	0.32	75	2.5	0.84	2.0	0.38	2.3	33	14	0.13 J	0.42	0.62	2.3
Manganese	50	50		5.8	4.0	215	31	15	50	78	46	373	12	2.0	7.2	13	145
Mercury	0.77		0.2	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.28	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Nickel	16		8	0.54 J	0.50 U	5.9	2.4	0.50 J	2.7	1.7	0.77 J	3.8	0.93 J	0.50 U	0.50 U	0.50 U	1.1
Silver	0.12		0.1	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 J	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Zinc	36	36.5	700	28	43	578	29	29	45	36	10	186	26	20	20	27	52
Dissolved Metals (ug/l)																	
Aluminum																	
Antimony	6																
Arsenic	0.045	0.02	2														
Cadmium	0.094		0.7														
Chromium	100	100	10														
Copper	2.7	3	60														
Lead	0.54		50														
Manganese	50																
Mercury	0.77		0.2														
Nickel	16		8														
Silver	0.12		0.1														
Zinc	36	36.5	700														
Petroleum Hydrocarbons (ug/l)																	
Gasoline				50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Diesel				95 U	112 U	98 U	106 U	95 U	94 U	95 U	98 U	106 U	95 U	95 U	96 U	97 U	95 U
Oil				190 U	225 U	564	431	209 J	545	190 U	196 U	653	190 U	190 U	192 U	194 U	190 U
TSS (ug/l)			70000	5000 U	5000 U	104000	17000	5000 U	5000	5000	5000	66000	10000	5000 U	5000 U	5000 U	5000 U
TOC (ug/l)				1000 U	1300	5770	2830	2140	4150	10700	4250	3340	2290	1670	1860	2320	1890

U - Not detected at noted detection limit
J- Estimated value

1 - Table 3-1 PH JSCS Guidance, 7/16/2007 revision
2 - Table 17 January 2017 PH ROD. Surface Water Cleanup Level.
3 - October 2010, DEQ Guidance for Evaluating Stormwater Pathway at Upland Sites, Appendix E, Tool For Evaluating Stormwater Data (12/2015 update)

Detected concentration > 10 x SLV (CL or JSCS if no CL)
Detected concentration > 100 x SLV (CL or JSCS if no CL)
Detected concentration > 1000 x SLV (CL or JSCS if no CL)

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
PAHs (ug/l)								
Acenaphthene	2.00E-01			8.25E-02 U	1.98E-01 U	2.34E-01 U	9.35E-02 U	9.35E-02 U
Acenaphthylene	2.00E-01			8.25E-02 U	1.98E-01 U	2.34E-01 U	9.35E-02 U	9.35E-02 U
Anthracene				8.25E-02 U	1.98E-01 U	2.34E-01 U	9.35E-02 U	9.35E-02 U
Benzo(a)anthracene	1.80E-02	1.20E-03		1.38E-01 J	1.98E-01 U	3.15E-01 J	1.75E-01 J	1.38E-01 J
Benzo(a)pyrene	1.80E-02	1.20E-04		1.24E-01 U	3.05E-01 J	6.19E-01 J	2.43E-01 J	2.00E-01 J
Benzo(b)fluoranthene	1.80E-02	1.20E-03						
Benzo(k)fluoranthene	1.80E-02	1.30E-03						
Benzo(b+k)fluoranthene	1.80E-02	1.20E-03		2.14E-01 J	2.37E-01 J	1.15E+00	3.39E-01	2.59E-01 J
Benzo(g,h,i)perylene	2.00E-01			1.51E-01 J	2.35E-01 J	4.01E-01 J	2.77E-01	2.12E-01
Chrysene	1.80E-02	1.30E-03		1.98E-01	2.86E-01 J	5.98E-01	3.20E-01	2.71E-01
Dibenzo(a,h)anthracene	1.80E-02	1.20E-04		8.25E-02 U	1.98E-01 U	2.34E-01 U	9.35E-02 U	9.35E-02 U
Fluoranthene	2.00E-01			3.23E-01	3.03E-01 J	6.60E-01	3.01E-01	2.15E-01
Fluorene	2.00E-01			8.25E-02 U	1.98E-01 U	2.34E-01 U	9.35E-02 U	9.35E-02 U
Indeno(1,2,3-cd)pyrene	1.80E-02	1.20E-03		1.17E-01 J	1.98E-01 U	3.63E-01 J	2.26E-01	1.65E-01 J
Naphthalene	2.00E-01	1.20E+01		1.65E-01 U	3.96E-01 U	5.80E-01 J	1.87E-01 U	1.87E-01 U
Phenanthrene	2.00E-01			1.51E-01 J	1.98E-01 U	3.02E-01 J	1.29E-01 J	1.10E-01 J
Pyrene	2.00E-01			3.36E-01	4.24E-01	8.14E-01	3.95E-01	2.99E-01
Total Detected CPAHs (BaP TEF)		1.20E-04		4.86E-02	3.31E-01	8.06E-01	3.20E-01	2.59E-01
Total Detected PAHs			1.50E+00	1.63E+00	1.79E+00	6.04E+00	2.41E+00	1.87E+00
PCBs (ug/l)								
Aroclor 1016	9.60E-01			1.92E-02 U	1.94E-02 U	1.87E-02 U	1.87E-02 U	3.74E-02 U
Aroclor 1221	3.40E-02			1.92E-02 U	1.94E-02 U	1.87E-02 U	1.87E-02 U	3.74E-02 U
Aroclor 1232	3.40E-02			1.92E-02 U	1.94E-02 U	1.87E-02 U	1.87E-02 U	3.74E-02 U
Aroclor 1242	3.40E-02			2.43E-01	3.03E-02 J	9.34E-02	4.60E-02	3.74E-02 U
Aroclor 1248	3.40E-02			1.92E-02 U	1.94E-02 U	1.87E-02 U	1.87E-02 U	3.74E-02 U
Aroclor 1254	3.40E-02			2.35E-01	3.95E-02	9.94E-02	5.12E-02	3.74E-02 U
Aroclor 1260	3.40E-02			1.09E-01	2.04E-02 J	4.53E-02	2.31E-02 J	3.74E-02 U
Total Detected PCB aroclors	6.40E-05	6.40E-06	0.3	5.87E-01	9.02E-02	2.38E-01	1.20E-01	0.00E+00
PCB Congeners (ug/l)								
2-MonoCB-(1)				1.02E-04	2.00E-05 J	6.52E-05 J	1.85E-05 J	6.20E-06 J
3-MonoCB-(2)				2.16E-05 J	1.40E-05 U	1.26E-05 J	6.00E-06 J	3.90E-06 J
4-MonoCB-(3)				9.18E-05 J	1.70E-05 J	4.90E-05 U	1.97E-05 J	7.50E-06 J
22'-DiCB-(4)				2.35E-03	1.60E-04	1.07E-03	2.55E-04	6.21E-05 J
2,3-DiCB-(5)				2.00E-05 U	2.00E-05 U	3.00E-05 J	8.10E-06 U	5.10E-06 U
2,3'-DiCB-(6)				8.26E-04	7.70E-05 J	4.22E-04	1.18E-04	2.30E-05 U
2,4-DiCB-(7)				1.28E-04	1.70E-05 U	6.70E-05 J	2.20E-05 J	5.30E-06 U
2,4'-DiCB-(8)				4.13E-03	3.40E-04	2.34E-03	6.23E-04	1.33E-04
2,5-DiCB-(9)				2.18E-04	2.00E-05 U	1.12E-04	2.90E-05 U	6.80E-06 J
2,6-DiCB-(10)				7.23E-05 J	1.50E-05 U	4.80E-05 J	1.83E-05 J	5.80E-06 J
3,3'-DiCB-(11)				3.93E-04	2.50E-04	4.85E-04	1.34E-04	8.11E-05 J
DiCB-(12)+(13)				5.80E-04	4.40E-05 U	2.70E-04	1.01E-04 J	1.80E-05 U
3,5-DiCB-(14)				1.90E-05 U	1.70E-05 U	1.20E-05 U	8.30E-06 U	5.10E-06 U
4,4'-DiCB-(15)				7.90E-03	3.90E-04	3.46E-03	1.45E-03	2.87E-04
22'3-TriCB-(16)				1.08E-02	4.10E-04	9.90E-05	1.33E-03	2.07E-04
22'4-TriCB-(17)				8.27E-03	3.80E-04	3.09E-03	1.04E-03	1.68E-04
TriCB-(18)+(30)				1.61E-02	7.40E-04	6.21E-03	2.19E-03	3.60E-04
22'6-TriCB-(19)				1.75E-03	8.70E-05 J	7.73E-04	2.95E-04	7.51E-05 J
TriCB-(20) + (28)				3.52E-02	1.79E-03	1.21E-02	4.61E-03	7.70E-04
TriCB-(21)+(33)				1.78E-02	1.04E-03	6.14E-03	1.93E-03	2.80E-04
234'-TriCB-(22)				1.31E-02	7.20E-04	4.29E-03	1.63E-03	2.42E-04
235-TriCB-(23)				2.17E-05 J	1.90E-05 U	1.07E-05 J	4.90E-06 U	4.80E-06 U
236-TriCB-(24)				6.40E-06 U	2.00E-05 J	3.39E-03	3.74E-05 J	6.60E-06 J
23'4-TriCB-(25)				2.46E-03	1.30E-04	8.12E-04	3.01E-04	4.50E-05 U
TriCB-(26)+(29)				5.25E-03	2.60E-04	1.87E-03	6.30E-04	9.35E-05 J
23'6-TriCB-(27)				1.48E-03	6.30E-05 J	4.78E-04	2.33E-04	5.21E-05 J
24'5-TriCB-(31)				2.70E-02	1.41E-03	9.56E-03	2.99E-03	4.53E-04
24'6-TriCB-(32)				6.49E-03	2.80E-04	2.30E-03	1.02E-03	1.98E-04
23'5'-TriCB-(34)				7.10E-05 U	1.90E-05 U	2.50E-05 U	7.40E-06 U	4.50E-06 U
33'4-TriCB-(35)				5.50E-04	2.90E-05 J	1.70E-04	7.45E-05 J	1.10E-05 U
33'5-TriCB-(36)				5.00E-06 U	1.50E-05 U	2.20E-06 U	4.10E-06 U	4.00E-06 U
344'-TriCB-(37)				1.31E-02	6.40E-04	4.17E-03	1.80E-03	2.58E-04
345-TriCB-(38)				5.60E-06 U	1.80E-05 U	2.50E-06 U	4.80E-06 U	4.70E-06 U
34'5-TriCB-(39)				1.33E-04	1.60E-05 U	4.15E-05 J	2.27E-05 J	4.30E-06 U

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
TetraCB-(40)+(41)+(71)				2.10E-02	9.60E-04	7.46E-03	3.79E-03	6.20E-04
22'34'-TetraCB-(42)				1.22E-02	4.80E-04	4.29E-03	1.90E-03	3.10E-04
22'35-TetraCB-(43)				1.61E-03	8.00E-05 J	6.52E-04	2.31E-04	3.78E-05 J
TetraCB-(44)+(47)+(65)				3.48E-02	1.56E-03	1.32E-02	6.20E-03	1.04E-03
TetraCB-(45)+(51)				6.37E-03	2.50E-04	2.44E-03	1.18E-03	2.50E-04
22'36'-TetraCB-(46)				2.30E-03	9.10E-05 J	8.96E-04	4.47E-04	9.90E-05
22'45-TetraCB-(48)				6.93E-03	2.80E-04	2.81E-03	1.23E-03	1.73E-04
TetraCB-(49)+TetraCB-(69)				1.94E-02	7.90E-04	7.55E-03	3.46E-03	5.60E-04
TetraCB-(50)+(53)				4.35E-03	1.65E-04 J	1.69E-03	8.70E-04	2.00E-04
22'55'-TetraCB-(52)				3.38E-02	1.40E-03	1.37E-02	5.96E-03	1.09E-03
22'66'-TetraCB-(54)				6.70E-05 J	1.70E-05 U	2.60E-05 J	1.06E-05 J	3.60E-06 U
233'4-TetraCB-(55)				4.60E-06 U	2.00E-05 U	8.10E-05 U	5.35E-05 J	9.50E-06 J
233'4'-Tetra CB(56)				1.43E-02	5.30E-04	3.55E-03	1.67E-03	2.56E-04
233'5-TetraCB-(57)				1.03E-04	2.00E-05 U	7.30E-06 U	1.63E-05 J	5.80E-06 U
233'5'-TetraCB-(58)				4.40E-06 U	2.00E-05 U	2.00E-04 U	6.40E-06 U	5.90E-06 U
TetraCB-(59)+(62)+(75)				3.12E-03	1.43E-04 J	1.15E-03	6.10E-04	1.14E-04 J
2344'-TetraCB -(60)				7.47E-03	2.50E-04	1.84E-03	8.24E-04	1.24E-04
TetraCB-(61)+(70)+(74)+(76)				4.58E-02	2.01E-03	1.49E-02	6.27E-03	9.00E-04
234'5-TetraCB-(63)				9.58E-04	3.40E-05 J	2.58E-04	1.17E-04	1.63E-05 J
234'6-TetraCB-(64)				1.78E-02	8.10E-04	6.33E-03	3.18E-03	5.74E-04
23'44'-TetraCB-(66)				2.51E-02	9.60E-04	7.01E-03	3.00E-03	4.70E-04
23'45-TetraCB-(67)				9.13E-04	3.70E-05 J	2.78E-04	1.26E-04	1.73E-05 J
23'45'-TetraCB-(68)				5.97E-05 J	1.80E-05 U	2.39E-05 J	9.60E-06 J	5.20E-06 U
23'55'-TetraCB-(72)				1.25E-04	1.90E-05 U	4.86E-05 J	1.96E-05 J	5.50E-06 U
23'5'6-TetraCB-(73)				3.10E-06 U	1.50E-05 U	4.30E-06 U	5.20E-06 U	5.30E-06 U
33'44'-TetraCB-(77)				2.97E-03	1.40E-04	7.88E-04	3.82E-04	7.06E-05 J
33'45-TetraCB-(78)				4.70E-06 U	2.00E-05 U	7.20E-06 U	6.30E-06 U	5.80E-06 U
33'45'-TetraCB(79)				1.95E-04	1.80E-05 U	8.50E-05 U	4.92E-05 J	7.40E-06 U
33'55'-TetraCB-(80)				4.20E-06 U	1.80E-05 U	6.70E-06 U	5.80E-06 U	5.30E-06 U
344'5-TetraCB-(81)				1.24E-04	2.40E-05 U	1.90E-05 U	1.20E-05 U	7.10E-06 U
22'33'4-PentaCB-(82)				4.64E-03	2.60E-04	1.40E-03	7.84E-04	1.38E-04
PentaCB-(83)+(99)				1.43E-02	8.20E-04	5.22E-03	2.93E-03	4.90E-04
22'33'6-PentaCB-(84)				8.51E-03	4.90E-04	3.12E-03	1.94E-03	3.56E-04
PentaCB-(85)+(116)+(117)				4.91E-03	2.54E-04 J	1.55E-03	9.70E-04	1.54E-04 J
PentaCB-(86)(87)(97)(109)(119)(125)				2.15E-02	1.30E-03	7.67E-03	4.32E-03	6.90E-04
PentaCB-(88)+(91)				4.09E-03	2.20E-04	1.48E-03	8.90E-04	1.74E-04 J
22'346'-PentaCB-(89)				4.73E-04	2.60E-05 U	1.48E-04	8.07E-05 J	1.77E-05 J
PentaCB-(90)+(101)+(113)				2.56E-02	1.71E-03	1.05E-02	5.67E-03	9.70E-04
22'355'-PentaCB-(92)				4.42E-03	2.70E-04	1.78E-03	1.01E-03	1.84E-04
PentaCB-(93)+(98)+(100)+(102)				1.35E-03	7.10E-05 J	4.60E-04	2.78E-04 J	5.68E-05 J
22'356'-PentaCB-(94)				1.57E-04	2.60E-05 U	5.41E-05 J	3.37E-05 J	8.10E-06 U
22'35'6-PentaCB-(95)				2.02E-02	1.32E-03	8.57E-03	5.27E-03	1.05E-03
22'366'-PentaCB-(96)				2.61E-04	1.90E-05 U	9.80E-05	6.23E-05 J	1.24E-05 J
22'45'6-PentaCB-(103)				1.29E-04	2.10E-05 U	4.87E-05 J	2.93E-05 J	5.30E-06 U
22'466'-PentaCB-(104)				3.70E-06 U	1.70E-05 U	8.60E-06 U	2.60E-06 U	5.40E-06 U
233'44'-PentaCB-(105)				1.44E-02	8.40E-04	5.28E-03	2.55E-03	4.16E-04
233'45-PentaCB-(106)				3.70E-06 U	1.80E-05 U	2.40E-06 U	5.90E-06 U	5.10E-06 U
233'4'5-PentaCB-(107)				1.88E-03	1.20E-04	6.46E-04	2.97E-04	5.27E-05 J
PentaCB-(108)+(124)				1.06E-03	6.90E-05 J	3.60E-04	1.76E-04 J	2.99E-05 J
PentaCB-(110)+(115)				3.84E-02	2.79E-03	1.49E-02	8.17E-03	1.66E-03
233'55'-PentaCB-(111)				5.50E-06 U	1.70E-05 U	2.40E-06 U	4.70E-06 U	4.30E-06 U
233'56-PentaCB-(112)				6.20E-06 U	1.80E-05 U	2.50E-06 U	4.90E-06 U	4.50E-06 U
2344'5-PentaCB-(114)				7.70E-04	4.40E-05 J	2.63E-04	1.12E-04	1.67E-05 J
23'44'5-PentaCB-(118)				2.89E-02	1.92E-03	1.16E-02	5.64E-03	8.71E-04
23'455'-PentaCB-(120)				2.99E-05 J	1.70E-05 U	2.30E-06 U	5.50E-06 U	4.10E-06 U
23'45'6-PentaCB-(121)				5.50E-06 U	1.70E-05 U	2.30E-06 U	4.70E-06 U	4.30E-06 U
233'4'5'-PentaCB-(122)				4.09E-04	2.30E-05 U	1.37E-04	6.53E-05 J	8.10E-06 U
23'44'5'-PentaCB-(123)				4.07E-04	2.60E-05 J	1.60E-04 U	7.27E-05 J	1.48E-05 J
33'44'5-PentaCB-(126)				1.08E-04	2.00E-05 U	4.95E-05 J	2.40E-05 J	5.70E-06 U
33'455'-PentaCB-(127)				3.00E-05 U	1.80E-05 U	2.50E-06 U	5.90E-06 U	5.10E-06 U
HexaCB-(128)+(166)				5.96E-03	4.50E-04	2.58E-03	1.17E-03	2.60E-04
HexaCB-(129)+(138)+(163)				4.10E-02	3.30E-03	1.79E-02	8.18E-03	1.81E-03
22'33'45'-HexaCB-(130)				2.18E-03	1.70E-04	9.24E-04	4.21E-04	1.02E-04
22'33'46-HexaCB-(131)				5.06E-04	4.10E-05 J	2.51E-04	1.12E-04	2.40E-05 U
22'33'46'-HexaCB-(132)				1.24E-02	9.30E-04	5.18E-03	2.53E-03	5.68E-04
22'33'55'-HexaCB-(133)				3.28E-04	3.10E-05 J	1.57E-04	6.87E-05 J	1.89E-05 J

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
HexaCB-(134)+(143)				1.74E-03	1.35E-04 J	7.90E-04	3.60E-04	8.88E-05 J
HexaCB-(135)+(151)				8.48E-03	6.60E-04	3.56E-03	1.94E-03	4.60E-04
22'33'66'-HexaCB-(136)				3.33E-03	2.70E-04	1.54E-03	8.36E-04	1.93E-04
22'344'5-HexaCB-(137)				1.40E-03	1.40E-04	7.84E-04	3.81E-04	7.06E-05 J
HexaCB-(139)+(140)				5.05E-04	4.10E-05 J	2.50E-04	1.13E-04 J	2.63E-05 J
22'3455'-HexaCB-(141)				7.15E-03	5.30E-04	2.82E-03	1.22E-03	2.67E-04
22'3456-HexaCB-(142)				7.20E-06 U	2.10E-05 U	1.00E-05 U	8.30E-06 U	8.00E-06 U
22'345'6-HexaCB-(144)				1.35E-03	1.10E-04	5.44E-04	2.71E-04	6.61E-05 J
22'3466'-HexaCB-(145)				1.01E-05 J	2.30E-05 U	3.60E-06 U	4.50E-06 U	4.70E-06 U
22'34'55'-HexaCB-(146)				4.04E-03	3.30E-04	1.70E-03	7.73E-04	1.94E-04
HexaCB-(147)+(149)				2.30E-02	1.79E-03	1.01E-02	4.86E-03	1.18E-03
22'34'56'-HexaCB-(148)				1.75E-05 J	3.00E-05 U	4.60E-06 U	5.90E-06 U	6.20E-06 U
22'34'66'-HexaCB-(150)				2.39E-05 J	2.10E-05 U	1.57E-05 J	4.10E-06 U	4.30E-06 U
22'3566'-HexaCB-(152)				2.10E-05 U	2.30E-05 U	1.20E-05 U	4.40E-06 U	4.60E-06 U
HexaCB-(153)+(168)				2.48E-02	1.96E-03	1.09E-02	4.66E-03	1.05E-03
22'44'56'-HexaCB-(154)				1.87E-04	2.60E-05 U	6.50E-05 U	4.12E-05 J	1.19E-05 J
22'44'66'-HexaCB-(155)				2.40E-06 U	2.30E-05 U	2.70E-06 U	5.20E-06 U	5.50E-06 U
HexaCB-(156)+(157)				4.34E-03	3.50E-04	1.93E-03	8.70E-04	1.70E-04 J
233'44'6-HexaCB-(158)				3.95E-03	3.00E-04	1.68E-03	7.52E-04	1.63E-04
233'455'-HexaCB-(159)				2.45E-04	2.20E-05 J	8.43E-05 J	4.46E-05 J	1.35E-05 J
233'456-HexaCB-(160)				5.60E-06 U	1.40E-05 U	7.30E-06 U	5.80E-06 U	5.60E-06 U
233'45'6-HexaCB-(161)				4.80E-06 U	1.40E-05 U	6.90E-06 U	5.80E-06 U	5.60E-06 U
233'4'55'-HexaCB-(162)				1.07E-04	1.50E-05 U	5.92E-05 J	2.15E-05 J	6.40E-06 U
233'4'5'6-HexaCB-(164)				2.81E-03	1.80E-04	1.03E-03	4.69E-04	1.26E-04
233'55'6-HexaCB-(165)				5.30E-06 U	1.50E-05 U	7.40E-06 U	6.10E-06 U	5.90E-06 U
23'44'55'-HexaCB-(167)				1.33E-03	1.10E-04	6.32E-04	2.86E-04	6.02E-05 J
33'44'55'-HexaCB-(169)				1.30E-05 U	1.70E-05 U	1.40E-05 U	6.60E-06 U	7.10E-06 U
22'33'44'5-HeptaCB-(170)				6.25E-03	5.60E-04	3.54E-03	1.42E-03	3.57E-04
HeptaCB-(171)+(173)				1.97E-03	1.60E-04 J	7.50E-04	3.70E-04	9.50E-05 J
22'33'455'-HeptaCB-(172)				1.03E-03	9.30E-05 J	4.45E-04	1.83E-04	5.67E-05 J
22'33'456'-HeptaCB-(174)				6.49E-03	5.20E-04	2.58E-03	1.20E-03	3.22E-04
22'33'45'6-HeptaCB-(175)				2.42E-04	1.90E-05 J	1.19E-04	5.95E-05 J	1.40E-05 J
22'33'466'-HeptaCB-(176)				6.78E-04	5.90E-05 J	3.11E-04	1.35E-04	4.01E-05 J
22'33'45'6'-HeptaCB-(177)				3.72E-03	3.00E-04	1.36E-03	6.41E-04	1.70E-04
22'33'55'6-HeptaCB-(178)				1.01E-03	8.90E-05 J	4.18E-04	2.12E-04	5.42E-05 J
22'33'566'-HeptaCB-(179)				2.06E-03	1.90E-04	8.61E-04	4.43E-04	1.24E-04
HeptaCB-(180)+(193)				1.51E-02	1.27E-03	5.92E-03	2.85E-03	7.20E-04
22'344'56-HeptaCB-(181)				6.75E-05 J	2.50E-05 U	4.30E-06 U	1.93E-05 J	6.60E-06 U
22'344'56'-HeptaCB-(182)				2.40E-05 U	1.40E-05 U	7.00E-06 U	5.30E-06 U	5.40E-06 U
22'344'5'6-HeptaCB-(183)				3.63E-03	2.60E-04	1.35E-03	7.06E-04	1.79E-04
22'344'66'-HeptaCB-(184)				4.20E-06 U	9.40E-06 U	5.00E-06 U	3.80E-06 U	3.90E-06 U
22'3455'6-HeptaCB-(185)				3.40E-06 U	4.60E-05 J	1.94E-04	8.59E-05 J	2.07E-05 J
22'34566'-HeptaCB-(186)				2.10E-06 U	1.00E-05 U	5.40E-06 U	4.00E-06 U	4.10E-06 U
22'34'55'6-HeptaCB-(187)				6.60E-03	5.60E-04	2.73E-03	1.32E-03	3.75E-04
22'34'566'-HeptaCB-(188)				7.40E-06 U	1.20E-05 U	6.10E-06 U	5.50E-06 U	5.70E-06 U
233'44'55'-HeptaCB-(189)				2.84E-04	2.60E-05 J	1.12E-04	4.98E-05 J	1.10E-05 U
233'44'56-HeptaCB-(190)				1.23E-03	1.00E-04	4.10E-04 U	2.21E-04	5.29E-05 J
233'44'5'6-HeptaCB-(191)				2.35E-04	2.00E-05 U	9.30E-05 U	4.54E-05 J	1.24E-05 J
233'455'6-HeptaCB-(192)				2.60E-06 U	2.10E-05 U	3.80E-06 U	2.30E-05 U	5.60E-06 U
22'33'44'55'-OctaCB-(194)				3.07E-03	2.80E-04	1.34E-03	6.12E-04	1.77E-04
22'33'44'56-OctaCB-(195)				1.08E-03	9.60E-05 J	4.47E-04	1.94E-04	6.36E-05 J
22'33'44'56'-OctaCB-(196)				1.66E-03	1.50E-04	6.70E-04 U	3.08E-04	1.00E-04
22'33'44'66'OctaCB-(197)				7.47E-05 J	1.70E-05 U	2.50E-05 U	2.04E-05 J	5.90E-06 J
OctaCB-(198)+(199)				3.77E-03	3.40E-04	1.46E-03	8.70E-04	2.50E-04
22'33'4566'-OctaCB-(200)				4.44E-04	3.30E-05 J	1.75E-04	9.01E-05 J	2.89E-05 J
22'33'45'66'-OctaCB-(201)				3.83E-04	4.00E-05 J	1.89E-04	8.98E-05 J	3.17E-05 J
22'33'55'66'-OctaCB-(202)				6.66E-04	5.90E-05 U	3.99E-04	1.74E-04	5.42E-05 J
22'344'55'6-OctaCB-(203)				2.34E-03	2.10E-04	9.84E-04	5.25E-04	1.51E-04
22'344'566'-OctaCB-(204)				4.50E-06 U	1.70E-05 U	4.70E-06 U	5.50E-06 U	4.70E-06 U
233'44'55'6-OctaCB-(205)				1.53E-04	1.70E-05 U	6.30E-05 U	2.74E-05 J	9.80E-06 J
22'33'44'55'6-NonaCB-(206)				2.10E-03	2.10E-04	1.00E-03	5.60E-04	1.61E-04
22'33'44'566'-NonaCB-(207)				2.28E-04	2.00E-05 U	1.20E-04 U	6.04E-05 J	1.82E-05 J
22'33'455'66'-NonaCB-(208)				5.14E-04	7.10E-05 J	2.83E-04	1.58E-04	4.53E-05 J
DecaCB-(209)				9.64E-04	8.70E-05 J	2.75E-04	1.45E-04	5.59E-05 J
PCB Congeners (ug/l)								

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
2-Chlorobiphenyl (1)								
3-Chlorobiphenyl (2)								
4-Chlorobiphenyl (3)								
2,2'-Dichlorobiphenyl (4)								
2,3-Dichlorobiphenyl (5)								
2,3'-Dichlorobiphenyl (6)								
2,4-Dichlorobiphenyl (7)								
2,4'-Dichlorobiphenyl (8)								
2,5-Dichlorobiphenyl (9)								
2,6-Dichlorobiphenyl (10)								
3,3'-Dichlorobiphenyl (11)								
3,4-Dichlorobiphenyl (12) (13)								
3,5-Dichlorobiphenyl (14)								
4,4'-Dichlorobiphenyl (15)								
2,2',3-Trichlorobiphenyl (16)								
2,2',4-Trichlorobiphenyl (17)								
2,2',5-Trichlorobiphenyl (18) (30)								
2,2',6-Trichlorobiphenyl (19)								
2,3,3'-Trichlorobiphenyl (20) (28)								
2,3,4-Trichlorobiphenyl (21) (33)								
2,3,4'-Trichlorobiphenyl (22)								
2,3,5-Trichlorobiphenyl (23)								
2,3,6-Trichlorobiphenyl (24)								
2,3',4-Trichlorobiphenyl (25)								
2,3',5-Trichlorobiphenyl (26) (29)								
2,3',6-Trichlorobiphenyl (27)								
2,4',5-Trichlorobiphenyl (31)								
2,4',6-Trichlorobiphenyl (32)								
2',3,5-Trichlorobiphenyl (34)								
3,3',4-Trichlorobiphenyl (35)								
3,3',5-Trichlorobiphenyl (36)								
3,4,4'-Trichlorobiphenyl (37)								
3,4,5-Trichlorobiphenyl (38)								
3,4',5-Trichlorobiphenyl (39)								
2,2',3,3'-Tetrachlorobiphenyl (40) (71)								
2,2',3,4-Tetrachlorobiphenyl (41)								
2,2',3,4'-Tetrachlorobiphenyl (42)								
2,2',3,5-Tetrachlorobiphenyl (43)								
2,2',3,5'-Tetrachlorobiphenyl (44) (47) (65)								
2,2',3,6-Tetrachlorobiphenyl (45) (51)								
2,2',3,6'-Tetrachlorobiphenyl (46)								
2,2',4,5-Tetrachlorobiphenyl (48)								
2,2',4,5'-Tetrachlorobiphenyl (49) (69)								
2,2',4,6-Tetrachlorobiphenyl (50) (53)								
2,2',5,5'-Tetrachlorobiphenyl (52)								
2,2',6,6'-Tetrachlorobiphenyl (54)								
2,3,3',4-Tetrachlorobiphenyl (55)								
2,3,3',4'-Tetrachlorobiphenyl (56)								
2,3,3',5-Tetrachlorobiphenyl (57)								
2,3,3',5'-Tetrachlorobiphenyl (58)								
2,3,3',6-Tetrachlorobiphenyl (59) (62) (75)								
2,3,4,4'-Tetrachlorobiphenyl (60)								
2,3,4,5-Tetrachlorobiphenyl (61) (70) (74) (76)								
2,3,4',5-Tetrachlorobiphenyl (63)								
2,3,4',6-Tetrachlorobiphenyl (64)								
2,3',4,4'-Tetrachlorobiphenyl (66)								
2,3',4,5-Tetrachlorobiphenyl (67)								
2,3',4,5'-Tetrachlorobiphenyl (68)								
2,3',5,5'-Tetrachlorobiphenyl (72)								
2,3',5',6-Tetrachlorobiphenyl (73)								
3,3',4,4'-Tetrachlorobiphenyl (77)								
3,3',4,5-Tetrachlorobiphenyl (78)								
3,3',4,5'-Tetrachlorobiphenyl (79)								
3,3',5,5'-Tetrachlorobiphenyl (80)								
3,4,4',5-Tetrachlorobiphenyl (81)								
2,2',3,3',4-Pentachlorobiphenyl (82)								

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
2,2',3,3',5-Pentachlorobiphenyl (83)								
2,2',3,3',6-Pentachlorobiphenyl (84)								
2,2',3,4,4'-Pentachlorobiphenyl (85) (116) (117)								
2,2',3,4,5-Pentachlorobiphenyl (86)(87)(97)(109)(119)(125)								
2,2',3,4,6-Pentachlorobiphenyl (88) (91)								
2,2',3,4,6'-Pentachlorobiphenyl (89)								
2,2',3,4',5-Pentachlorobiphenyl (90) (101) (113)								
2,2',3,5,5'-Pentachlorobiphenyl (92)								
2,2',3,5,6-Pentachlorobiphenyl (93) (100)								
2,2',3,5,6'-Pentachlorobiphenyl (94)								
2,2',3,5',6-Pentachlorobiphenyl (95)								
2,2',3,6,6'-Pentachlorobiphenyl (96)								
2,2',3',4,6-Pentachlorobiphenyl (98) (102)								
2,2',4,4',5-Pentachlorobiphenyl (99)								
2,2',4,5',6-Pentachlorobiphenyl (103)								
2,2',4,6,6'-Pentachlorobiphenyl (104)								
2,3,3',4,4'-Pentachlorobiphenyl (105)								
2,3,3',4,5-Pentachlorobiphenyl (106)								
2,3,3',4',5-Pentachlorobiphenyl (107)								
2,3,3',4,5'-Pentachlorobiphenyl (108)(124)								
2,3,3',4',6-Pentachlorobiphenyl (110)(115)								
2,3,3',5,5'-Pentachlorobiphenyl (111)								
2,3,3',5,6-Pentachlorobiphenyl (112)								
2,3,4,4',5-Pentachlorobiphenyl (114)								
2,3',4,4',5-Pentachlorobiphenyl (118)								
2,3',4,5,5'-Pentachlorobiphenyl (120)								
2,3',4,5',6-Pentachlorobiphenyl (121)								
2',3,3',4,5-Pentachlorobiphenyl (122)								
2',3,4,4',5-Pentachlorobiphenyl (123)								
3,3',4,4',5-Pentachlorobiphenyl (126)								
3,3',4,5,5'-Pentachlorobiphenyl (127)								
2,2',3,3',4,4'-Hexachlorobiphenyl (128)(166)								
2,2',3,3',4,5-Hexachlorobiphenyl (129)(138)(163)								
2,2',3,3',4,5'-Hexachlorobiphenyl (130)								
2,2',3,3',4,6-Hexachlorobiphenyl (131)								
2,2',3,3',4,6'-Hexachlorobiphenyl (132)								
2,2',3,3',5,5'-Hexachlorobiphenyl (133)								
2,2',3,3',5,6-Hexachlorobiphenyl (134)								
2,2',3,3',5,6'-Hexachlorobiphenyl (135)(151)								
2,2',3,3',6,6'-Hexachlorobiphenyl (136)								
2,2',3,4,4',5-Hexachlorobiphenyl (137)								
2,2',3,4,4',6-Hexachlorobiphenyl (139)(140)								
2,2',3,4,5,5'-Hexachlorobiphenyl (141)								
2,2',3,4,5,6-Hexachlorobiphenyl (142)								
2,2',3,4,5,6'-Hexachlorobiphenyl (143)								
2,2',3,4,5',6-Hexachlorobiphenyl (144)								
2,2',3,4,6,6'-Hexachlorobiphenyl (145)								
2,2',3,4',5,5'-Hexachlorobiphenyl (146)								
2,2',3,4',5,6-Hexachlorobiphenyl (147)(149)								
2,2',3,4',5,6'-Hexachlorobiphenyl (148)								
2,2',3,4',6,6'-Hexachlorobiphenyl (150)								
2,2',3,5,6,6'-Hexachlorobiphenyl (152)								
2,2',4,4',5,5'-Hexachlorobiphenyl (153)(168)								
2,2',4,4',5,6'-Hexachlorobiphenyl (154)								
2,2',4,4',6,6'-Hexachlorobiphenyl (155)								
2,3,3',4,4',5-Hexachlorobiphenyl (156)*157)								
2,3,3',4,4',6-Hexachlorobiphenyl (158)								
2,3,3',4,5,5'-Hexachlorobiphenyl (159)								
2,3,3',4,5,6-Hexachlorobiphenyl (160)								
2,3,3',4,5',6-Hexachlorobiphenyl (161)								
2,3,3',4',5,5'-Hexachlorobiphenyl (162)								
2,3,3',4',5',6-Hexachlorobiphenyl (164)								
2,3,3',5,5',6-Hexachlorobiphenyl (165)								
2,3',4,4',5,5'-Hexachlorobiphenyl (167)								
3,3',4,4',5,5'-Hexachlorobiphenyl (169)								
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)								

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)(173)								
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)								
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)								
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)								
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)								
2,2',3,3',4',5,6-Heptachlorobiphenyl (177)								
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)								
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)								
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)(193)								
2,2',3,4,4',5,6-Heptachlorobiphenyl (181)								
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)								
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)(185)								
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)								
2,2',3,4,5,6,6'-Heptachlorobiphenyl (186)								
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)								
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)								
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)								
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)								
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)								
2,3,3',4,5,5',6-Heptachlorobiphenyl (192)								
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)								
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)								
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)								
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)(200)								
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)(199)								
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)								
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)								
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)								
2,2',3,4,4',5,6,6'-Octachlorobiphenyl (204)								
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)								
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)								
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)								
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)								
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (209)								
PCB Homologs (ug/l)								
Monochlorobiphenyl				2.15E-04	3.70E-05	7.78E-05	4.42E-05	1.76E-05
Dichlorobiphenyl				1.66E-02	1.22E-03	8.30E-03	2.72E-03	5.75E-04
Trichlorobiphenyl				1.60E-01	8.00E-03	5.55E-02	2.01E-02	3.16E-03
Tetrachlorobiphenyl				2.62E-01	1.10E-02	9.08E-02	4.16E-02	6.93E-03
Pentachlorobiphenyl				1.97E-01	1.25E-02	7.54E-02	4.14E-02	7.36E-03
Hexachlorobiphenyl				1.51E-01	1.18E-02	6.54E-02	3.04E-02	6.90E-03
Heptachlorobiphenyl				5.06E-02	4.24E-03	2.07E-02	9.96E-03	2.60E-03
Octachlorobiphenyl				1.36E-02	1.16E-03	4.99E-03	2.91E-03	8.71E-04
Nonachlorobiphenyl				2.84E-03	2.77E-04	1.28E-03	7.78E-04	2.25E-04
Decachlorobiphenyl				9.64E-04	8.70E-05	2.75E-04	1.45E-04	5.59E-05
Total Detected PCBs (Method 1668)	6.40E-05	6.40E-06	3.00E-01	8.54E-01	5.04E-02	3.23E-01	1.50E-01	2.87E-02
Phthalates (ug/l)								
Bis(2-ethylhexyl) phthalate	2.2	0.2	5	9.1 U	22 U	26 U	10 U	10 U
Butylbenzyl phthalate	3			12 U	30 U	35 U	14 U	14 U
Dibutyl phthalate	3			12 U	30 U	35 U	14 U	14 U
Diethyl phthalate	3			12 U	30 U	35 U	14 U	14 U
Dimethyl phthalate	3			12 U	30 U	35 U	14 U	14 U
Di-n-octyl phthalate	3			12 U	30 U	35 U	14 U	14 U
Pesticides (ug/l)								
2,4'-DDD	3.10E-04	3.10E-05		9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
2,4'-DDE	2.20E-04	1.80E-05		9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
2,4'-DDT	2.00E-01	2.20E-05		9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
4,4'-DDD	3.10E-04	3.10E-05		9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
4,4'-DDE	2.20E-04	1.80E-05		9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
4,4'-DDT	2.20E-04	2.20E-05		2.91E-02 U	9.71E-03 U	5.61E-02 U	9.35E-02 U	9.35E-02 U
Total DDx		1.00E-02						
Aldrin	5.00E-05	7.70E-07		9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
alpha-BHC	4.90E-03			9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
beta-BHC	1.70E-02			9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
cis-Chlordane	8.10E-04	8.10E-05		9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
cis-Nonachlor	1.90E-01			9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Chlordane Technical		8.10E-05		3.65E-01 U	3.65E-01 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
delta-BHC	5.20E-02			9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Dieldrin	5.40E-05			9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Endosulfan I	5.10E-02			4.85E-02 U	7.77E-02 U	5.61E-02 U	9.35E-02 U	9.35E-02 U
Endosulfan II	5.10E-02			9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Endosulfan sulfate	8.90E+01			9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Endrin	3.60E-02			9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Endrin aldehyde				9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Endrin ketone				9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
gamma-BHC	3.70E-02			9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Heptachlor	7.90E-05			9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Heptachlor epoxide	3.90E-05			9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Hexachlorobenzene	2.90E-04	2.90E-05		2.91E-02 U	2.91E-02 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Hexachlorobutadiene	8.60E-01			9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Hexachloroethane	3.30E+00							
Methoxychlor	3.00E-02			2.91E-02 U	2.91E-02 U	7.48E-02 U	3.74E-01 U	3.74E-01 U
Mirex	NC			9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Oxychlordane	1.90E-01	8.10E-05		9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Toxaphene	2.00E-04			3.65E-01 U	3.65E-01 U	1.87E+00 U	9.35E-01 U	9.35E-01 U
trans-Chlordane	8.10E-04	8.10E-05		9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
trans-Nonachlor	1.90E-01			9.71E-03 U	9.71E-03 U	1.87E-02 U	9.35E-02 U	9.35E-02 U
Dioxins (ug/l)								
1,2,3,4,6,7,8-HeptaCDD				4.94E-04	1.65E-04	2.64E-04	2.24E-04	1.55E-04
1,2,3,4,6,7,8-HeptaCDF				8.30E-05 U	4.80E-05 U	5.30E-05	2.60E-05 U	1.40E-05 U
1,2,3,4,7,8,9-HeptaCDF				6.80E-06 J	3.80E-06 J	5.80E-06 J	1.60E-06 U	1.10E-06 U
1,2,3,4,7,8-HexaCDD				6.10E-06 J	3.20E-06 J	4.50E-06 J	2.10E-06 J	1.00E-06 U
1,2,3,4,7,8-HexaCDF				1.08E-05 J	3.30E-06 J	5.16E-06 J	2.86E-06 J	1.66E-06 J
1,2,3,6,7,8-HexaCDD				2.05E-05 J	6.90E-06 J	1.15E-05 J	7.83E-06 J	4.84E-06 J
1,2,3,6,7,8-HexaCDF				5.40E-06 J	1.98E-06 J	3.08E-06 J	1.69E-06 J	9.30E-07 U
1,2,3,7,8,9-HexaCDD				1.45E-05 J	7.30E-06 J	1.03E-05 J	5.30E-06 J	3.41E-06 J
1,2,3,7,8,9-HexaCDF				1.30E-06 U	1.50E-06 U	1.20E-06 U	1.10E-06 U	1.10E-06 U
1,2,3,7,8-PentaCDD				3.82E-06 J	1.30E-06 U	1.80E-06 J	1.10E-06 U	1.10E-06 U
1,2,3,7,8-PentaCDF				2.80E-06 J	1.60E-06 U	1.59E-06 J	1.00E-06 U	9.80E-07 U
2,3,4,6,7,8-HexaCDF				4.40E-06 J	1.50E-06 J	2.90E-06 J	1.74E-06 J	1.00E-06 U
2,3,4,7,8-PentaCDF				4.80E-06 J	1.70E-06 U	2.20E-06 J	1.40E-06 J	9.90E-07 U
2,3,7,8-TetraCDD	5.1E-09	5E-10		1.10E-06 U	1.00E-06 U	9.80E-07 U	1.10E-06 U	1.00E-06 U
2,3,7,8-TetraCDF				6.80E-06 J	1.30E-06 U	2.90E-06 J	2.50E-06 J	1.50E-06 J
OCDD				4.29E-03	1.29E-03	2.11E-03	2.09E-03	1.53E-03
OCDF				2.05E-04	1.28E-04	1.80E-04	6.27E-05 J	3.79E-05 J
HeptaCDD homologs				1.07E-03	3.47E-04	5.43E-04	6.10E-04	4.59E-04
HeptaCDF homologs				1.51E-04	9.10E-05	1.55E-04	4.50E-05 J	2.74E-05 J
HexaCDD homologs				1.50E-04	4.40E-05	8.30E-05	7.60E-05	5.00E-05
HexaCDF homologs				1.41E-04	5.70E-05	7.80E-05	4.65E-05 J	2.50E-05 J
PentaCDD homologs				1.29E-05 J	1.70E-06 J	1.80E-06 J	2.50E-06 U	1.20E-06 U
PentaCDF homologs				7.49E-05	6.70E-06 J	3.54E-05 J	3.05E-05 J	1.40E-05 J
TetraCDD homologs				5.40E-06 J	1.00E-06 U	9.80E-07 U	1.10E-06 U	1.00E-06 U
TetraCDF homologs				5.56E-05	1.60E-06 U	1.39E-05 J	1.23E-05 J	1.50E-06 J
Total Dioxin TEQ (ND=DL/2)	5.1E-09	5E-10		1.96E-05	6.34E-06	1.10E-05	7.02E-06	4.65E-06
Total Dioxin TEQ (ND=0)	5.1E-09	5E-10		1.86E-05	4.53E-06	1.05E-05	5.71E-06	3.16E-06
Butyltins (ug/l)								
Butyltin ion				0.20 U	0.20 U	0.20 U	0.20 U	0.20 U
Dibutyltin ion				0.29 U	0.29 U	0.29 U	0.29 U	0.29 U
Tributyltin ion	0.072	0.063		0.19 U	0.19 U	0.19 U	0.19 U	0.19 U
Total Metals (ug/l)								
Aluminum				5140	7340	6670	14300	13800

Table 3
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
Antimony	6			2.3	0.87 J	1.0 J	1.5	0.98 J
Arsenic	0.045	0.02	2	5.1	1.2	3.1	5.7	5.4
Cadmium	0.094		0.7	1.5	0.51 J	0.83 J	0.79 J	0.50 U
Chromium	100	100	10	50	41	34	47	41
Copper	2.7	3	60	86	43	52	52	42
Lead	0.54		50	122	32	48	50	32
Manganese	50	50		2230	581	805	1730	1700
Mercury	0.77		0.2	0.15	0.040 U	0.074 J	0.072 J	0.040 U
Nickel	16		8	15	13	14	15	14
Silver	0.12		0.1	0.22	0.10 U	0.50 U	0.50 U	0.50 U
Zinc	36	36.5	700	609	346	319	277	203
Dissolved Metals (ug/l)								
Aluminum				25 U	71	25 U	25 U	25 U
Antimony	6			0.58 J	0.50 U	0.50 U	0.58 J	0.61 J
Arsenic	0.045	0.02	2	2.3	0.50 U	0.80 J	1.7 J	1.8 J
Cadmium	0.094		0.7	0.24	0.044 J	0.50 U	0.50 U	0.50 U
Chromium	100	100	10	0.50 U	0.52 J	0.50 U	1.8 J	2.9
Copper	2.7	3	60	6.4	6.7	2.3	3.4	3.3
Lead	0.54		50	0.26	0.29	0.50 U	0.50 U	0.50 U
Manganese	50			1120	42	512	425	261
Mercury	0.77		0.2	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Nickel	16		8	2.6	1.3	1.7 J	0.90 J	0.97 J
Silver	0.12		0.1	0.10 U	0.10 U	0.50 U	0.50 U	0.50 U
Zinc	36	36.5	700	148	37	43	17	6.8
Petroleum Hydrocarbons (ug/l)								
Gasoline				50 U	50 U	105	50 U	50 U
Diesel				485 U	485 U	467 U	94 U	94 U
Oil				2900	2970	3880	2590	2280
TSS (ug/l)			70000	200000	300000	301000	300000	137000
TOC (ug/l)				6110	5500	3280	4640	4150

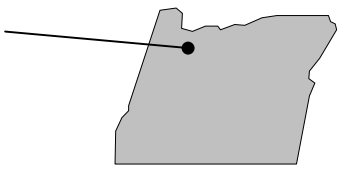
U - Not detected at noted detection limit
J- Estimated value

1 - Table 3-1 PH JSCS Guidance, 7/16/2007 revision
2 - Table 17 January 2017 PH ROD. Surface Water Cleanup Level.
3 - October 2010, DEQ Guidance for Evaluating Stormwater Pathway at Upland Sites, Appendix E, Tool For Evaluating Stormwater Data (12/2015 update)

Detected concentration > 10 x SLV (CL or JSCS if no CL)
Detected concentration > 100 x SLV (CL or JSCS if no CL)
Detected concentration > 1000 x SLV (CL or JSCS if no CL)

Figures

Portland, Oregon



N

Approximate Scale

5000 feet

Base photograph July 2016

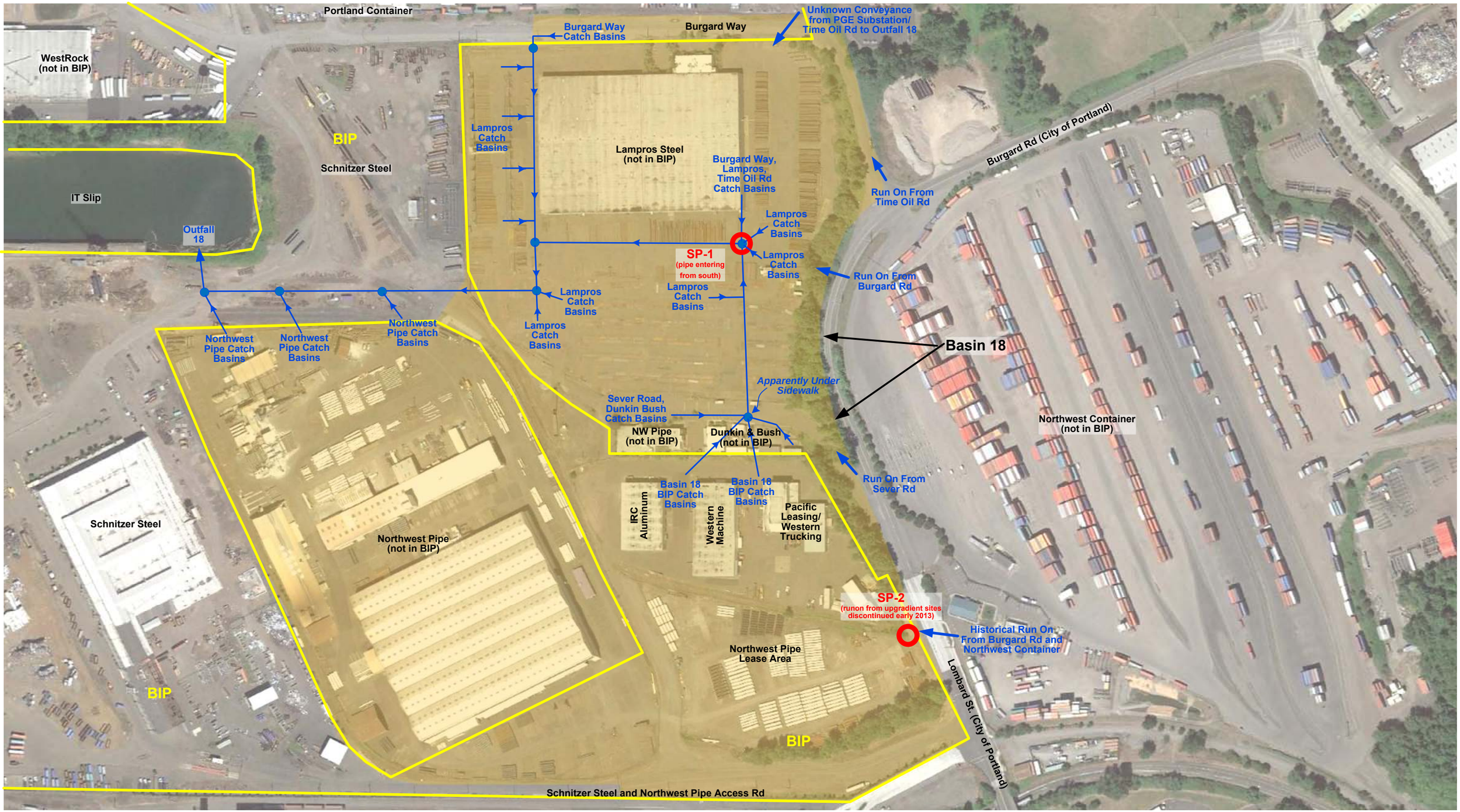
Figure 1
Site Location Map
Burgard Industrial Park

RIEKE CONSULTING SERVICES, LLC

Base photograph July 2016

Figure 2
Site Plan
Burgard Industrial Park
Portland, Oregon

RIEKE CONSULTING SERVICES, LLC



Base photograph July 2016

Approximate Scale

260 Feet

N

Previous Storm Water Sample Location

Manhole

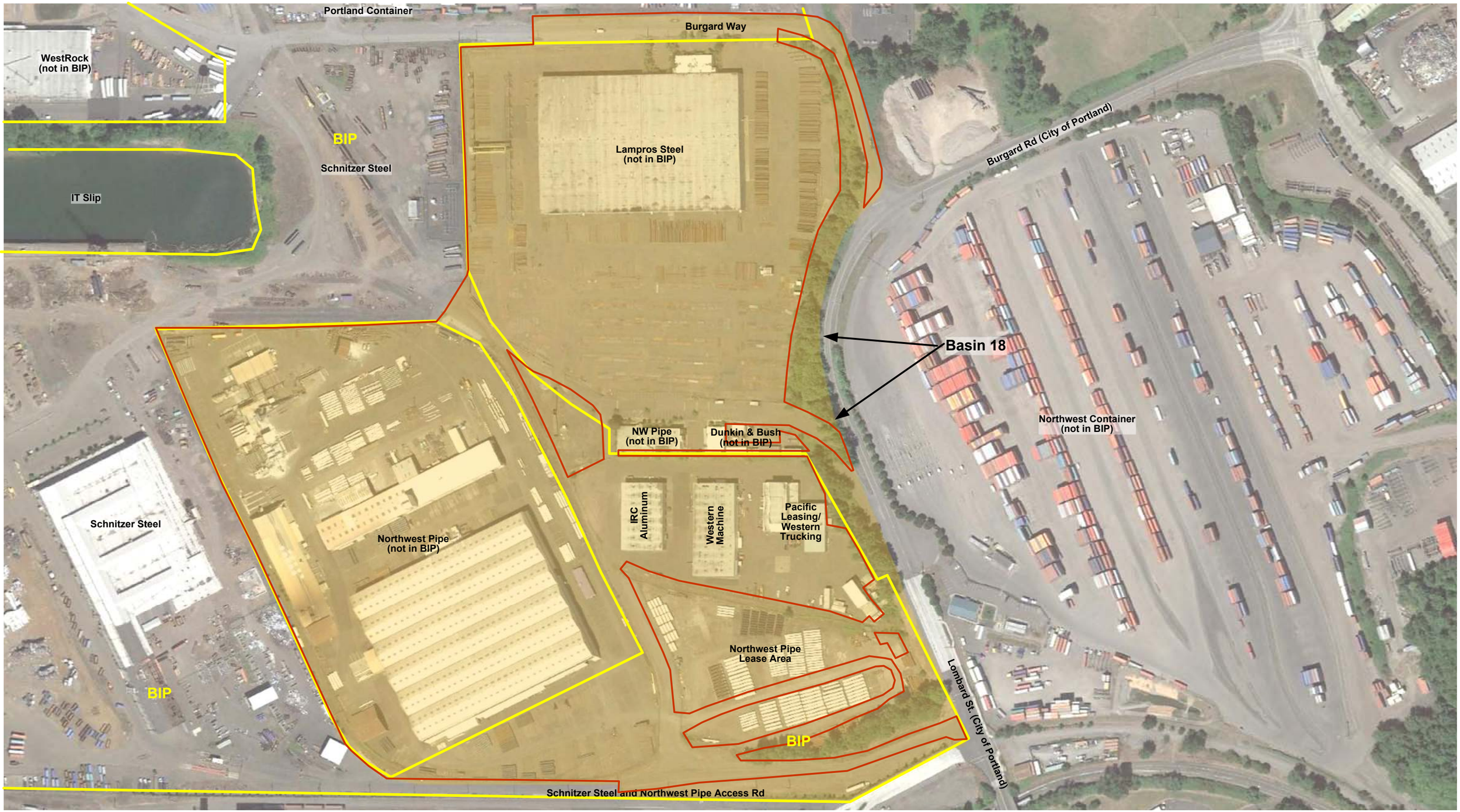
Storm Water Line

BIP Boundary

Basin 18 Area

Figure 3
Basin 18 Site Plan
Burgard Industrial Park
Portland, OR

RIEKE CONSULTING SERVICES, LLC



Base photograph July 2016

Approximate Scale

260 Feet

N

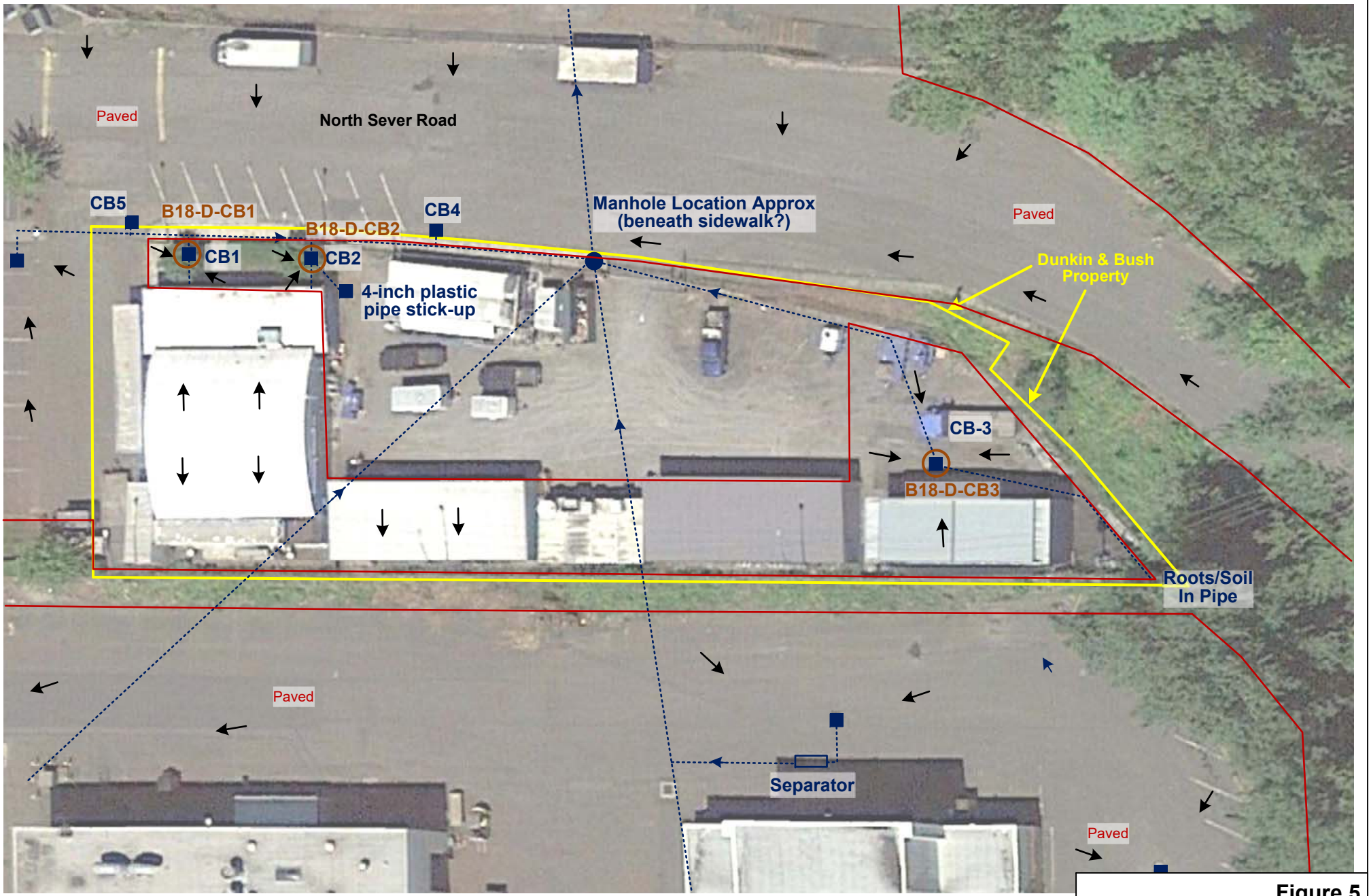
BIP Boundary

Impervious Surface

Basin 18 Area

Figure 4
Basin 18 Impervious Surfaces
Burgard Industrial Park
Portland, OR

RIEKE CONSULTING SERVICES, LLC



Base photograph July 2016

N

Approximate Scale

40 feet

Catch Basin

Manhole

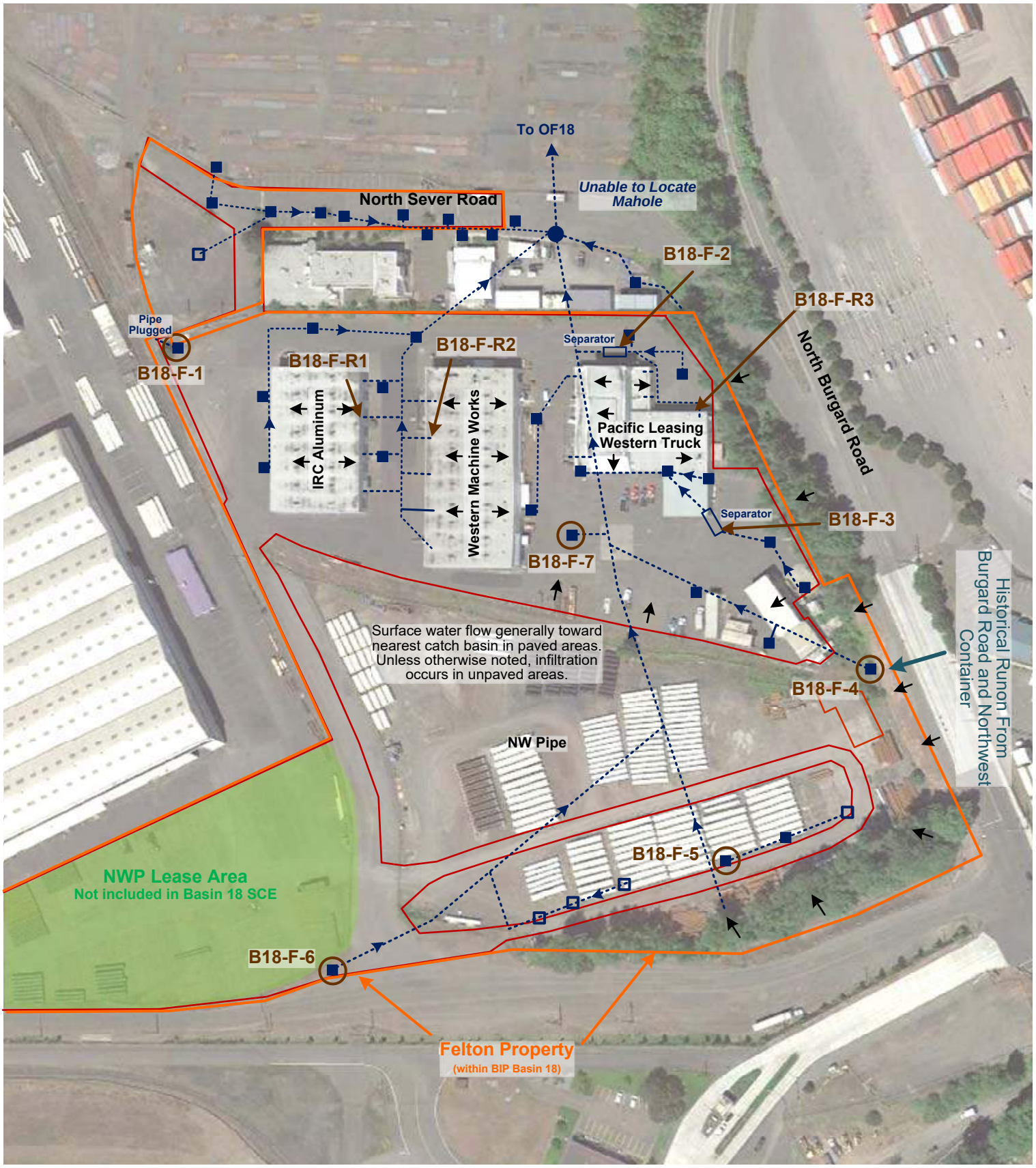
Impervious Surface

Storm Water Flow Direction

Property Boundary

Figure 5
Sample Locations
Dunkin & Bush Property
Burgard Industrial Park
Portland, OR

RIEKE CONSULTING SERVICES, LLC



Base photograph July 2016

N

Approximate Scale

180 feet

Impervious Surface

Manhole

Catch Basin (current)

Catch Basin (not found, historical)

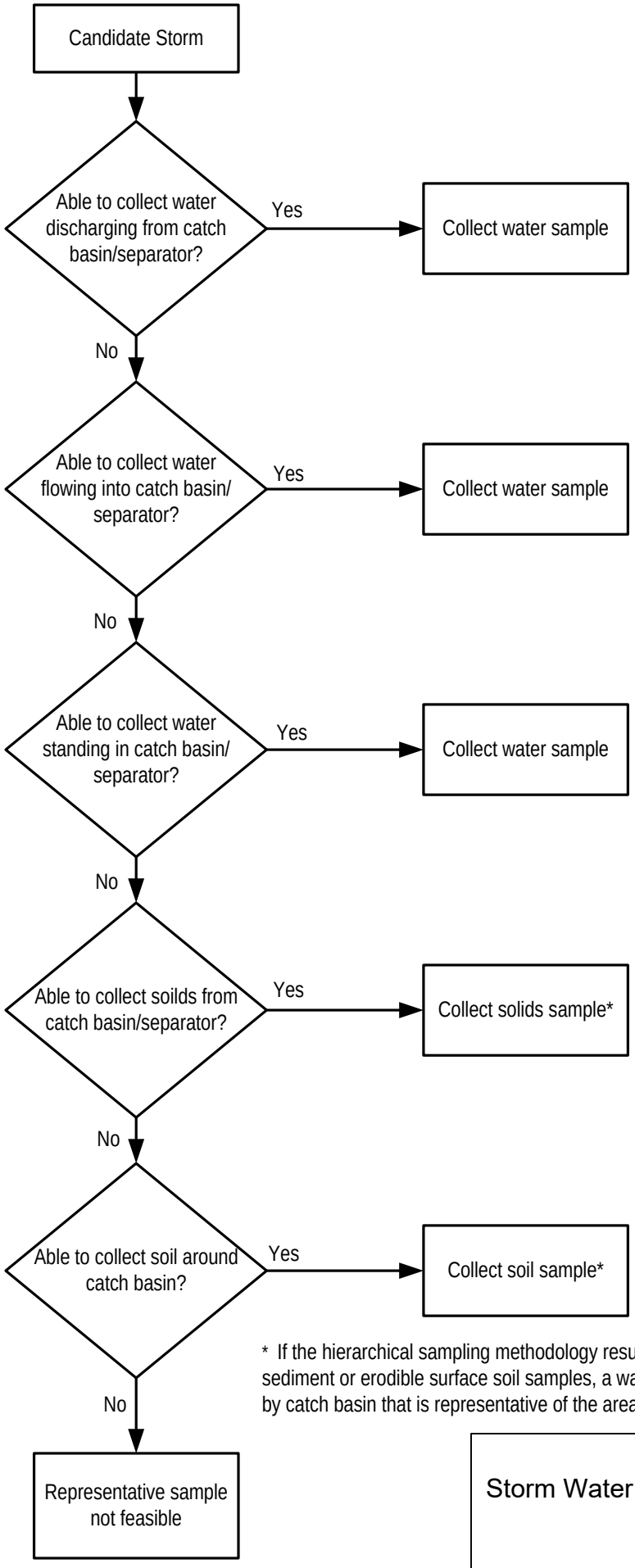
Buried Storm Water Line

Inferred Storm Water Flow Direction

Property Boundary

Figure 6
Sample Locations
Felton Property
Burgard Industrial Park
Portland, OR

RIEKE CONSULTING SERVICES, LLC



* If the hierarchical sampling methodology results in the collection of catch basin sediment or erodible surface soil samples, a water sample will be collected from a near-by catch basin that is representative of the area where the sediment/soil was collected.

Figure 7
Storm Water Sampling Hierarchy Flow Chart
Burgard Industrial Park
Portland, OR

RIEKE CONSULTING SERVICES, LLC

Appendix A – Analytical Laboratory Reports

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Tuesday, November 15, 2016

Ross Rieke
Bridgewater Group
7100 SW Hampton St. Suite 235
Tigard, OR 97223

RE: Schnitzer-Burgard / 8001-20

Enclosed are the results of analyses for work order A6J0588, which was received by the laboratory on 10/13/2016 at 11:00:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B18-D-CB1	A6J0588-01	Water	10/13/16 05:40	10/13/16 11:00
B18-D-CB2	A6J0588-02	Water	10/13/16 05:45	10/13/16 11:00
B18-D-CB3	A6J0588-03	Water	10/13/16 07:25	10/13/16 11:00
B18-F-1	A6J0588-04	Water	10/13/16 05:55	10/13/16 11:00
B18-F-2	A6J0588-05	Water	10/13/16 07:20	10/13/16 11:00
B18-F-3	A6J0588-06	Water	10/13/16 06:30	10/13/16 11:00
B18-F-4	A6J0588-07	Water	10/13/16 06:20	10/13/16 11:00
B18-F-5	A6J0588-08	Water	10/13/16 07:25	10/13/16 11:00
B18-F-6	A6J0588-09	Water	10/13/16 06:25	10/13/16 11:00
B18-F-7	A6J0588-10	Water	10/13/16 05:58	10/13/16 11:00
B18-F-R1	A6J0588-11	Water	10/13/16 05:42	10/13/16 11:00
B18-F-R2	A6J0588-12	Water	10/13/16 05:40	10/13/16 11:00
B18-F-R3	A6J0588-13	Water	10/13/16 06:40	10/13/16 11:00
B18-OF	A6J0588-14	Water	10/13/16 08:15	10/13/16 11:00

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB1 (A6J0588-01)			**Matrix: Water**		**Batch: 6100732**			
Diesel	ND	0.0952	0.190	mg/L	1	10/19/16 20:07	NWTPH-Dx	
Oil	ND	0.190	0.381	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 84 %*	*Limits: 50-150 %*	"	"	"	
B18-D-CB2 (A6J0588-02)			**Matrix: Water**		**Batch: 6100732**			
Diesel	ND	0.112	0.225	mg/L	1	10/19/16 20:29	NWTPH-Dx	
Oil	ND	0.225	0.449	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 84 %*	*Limits: 50-150 %*	"	"	"	
B18-D-CB3 (A6J0588-03)			**Matrix: Water**		**Batch: 6100732**			
Diesel	ND	0.0980	0.196	mg/L	1	10/19/16 20:52	NWTPH-Dx	
Oil	**0.564**	0.196	0.392	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 81 %*	*Limits: 50-150 %*	"	"	"	
B18-F-1 (A6J0588-04)			**Matrix: Water**		**Batch: 6100732**			
Diesel	ND	0.106	0.213	mg/L	1	10/19/16 21:14	NWTPH-Dx	
Oil	**0.431**	0.213	0.426	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 83 %*	*Limits: 50-150 %*	"	"	"	
B18-F-2 (A6J0588-05)			**Matrix: Water**		**Batch: 6100732**			
Diesel	ND	0.0952	0.190	mg/L	1	10/19/16 21:35	NWTPH-Dx	
Oil	**0.209**	0.190	0.381	"	"	"	"	J
Surrogate: o-Terphenyl (Surr)			*Recovery: 82 %*	*Limits: 50-150 %*	"	"	"	
B18-F-3 (A6J0588-06)			**Matrix: Water**		**Batch: 6100732**			
Diesel	ND	0.0943	0.189	mg/L	1	10/19/16 21:57	NWTPH-Dx	
Oil	**0.545**	0.189	0.377	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 96 %*	*Limits: 50-150 %*	"	"	"	
B18-F-4 (A6J0588-07)			**Matrix: Water**		**Batch: 6100732**			
Diesel	ND	0.0952	0.190	mg/L	1	10/19/16 22:19	NWTPH-Dx	
Oil	ND	0.190	0.381	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 86 %*	*Limits: 50-150 %*	"	"	"	
B18-F-5 (A6J0588-08)			**Matrix: Water**		**Batch: 6100732**			
Diesel	ND	0.0980	0.196	mg/L	1	10/19/16 22:41	NWTPH-Dx	
Oil	ND	0.196	0.392	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 88 %*	*Limits: 50-150 %*	"	"	"	

Apex Laboratories

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-6 (A6J0588-09)			**Matrix: Water**		**Batch: 6100732**			
Diesel	ND	0.106	0.213	mg/L	1	10/19/16 23:04	NWTPH-Dx	
Oil	**0.653**	0.213	0.426	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 99 %*	*Limits: 50-150 %*	"	"	"	
B18-F-7 (A6J0588-10)			**Matrix: Water**		**Batch: 6100732**			
Diesel	ND	0.0952	0.190	mg/L	1	10/19/16 23:26	NWTPH-Dx	
Oil	ND	0.190	0.381	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 104 %*	*Limits: 50-150 %*	"	"	"	
B18-F-R1 (A6J0588-11)			**Matrix: Water**		**Batch: 6100732**			
Diesel	ND	0.0952	0.190	mg/L	1	10/19/16 23:48	NWTPH-Dx	
Oil	ND	0.190	0.381	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 90 %*	*Limits: 50-150 %*	"	"	"	
B18-F-R2 (A6J0588-12)			**Matrix: Water**		**Batch: 6100732**			
Diesel	ND	0.0962	0.192	mg/L	1	10/20/16 00:10	NWTPH-Dx	
Oil	ND	0.192	0.385	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 90 %*	*Limits: 50-150 %*	"	"	"	
B18-F-R3 (A6J0588-13)			**Matrix: Water**		**Batch: 6100732**			
Diesel	ND	0.0971	0.194	mg/L	1	10/20/16 02:00	NWTPH-Dx	
Oil	ND	0.194	0.388	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 87 %*	*Limits: 50-150 %*	"	"	"	
B18-OF (A6J0588-14)			**Matrix: Water**		**Batch: 6100732**			
Diesel	ND	0.0952	0.190	mg/L	1	10/20/16 02:22	NWTPH-Dx	
Oil	ND	0.190	0.381	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 89 %*	*Limits: 50-150 %*	"	"	"	

Apex Laboratories

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB1 (A6J0588-01)			**Matrix: Water**		**Batch: 6100733**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	10/19/16 14:23	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 97 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*97 %*	*Limits: 50-150 %*	"	"	"	
B18-D-CB2 (A6J0588-02)			**Matrix: Water**		**Batch: 6100733**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	10/19/16 14:47	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 98 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*98 %*	*Limits: 50-150 %*	"	"	"	
B18-D-CB3 (A6J0588-03)			**Matrix: Water**		**Batch: 6100733**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	10/19/16 15:12	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 100 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*100 %*	*Limits: 50-150 %*	"	"	"	
B18-F-1 (A6J0588-04)			**Matrix: Water**		**Batch: 6100733**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	10/19/16 15:36	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 102 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*101 %*	*Limits: 50-150 %*	"	"	"	
B18-F-2 (A6J0588-05)			**Matrix: Water**		**Batch: 6100733**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	10/19/16 16:01	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 98 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*101 %*	*Limits: 50-150 %*	"	"	"	
B18-F-3 (A6J0588-06)			**Matrix: Water**		**Batch: 6100736**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	10/19/16 13:34	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 97 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*91 %*	*Limits: 50-150 %*	"	"	"	
B18-F-4 (A6J0588-07)			**Matrix: Water**		**Batch: 6100736**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	10/19/16 14:02	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 97 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*90 %*	*Limits: 50-150 %*	"	"	"	
B18-F-5 (A6J0588-08)			**Matrix: Water**		**Batch: 6100736**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	10/19/16 14:30	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 95 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*91 %*	*Limits: 50-150 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-6 (A6J0588-09)			**Matrix: Water**		**Batch: 6100736**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	10/19/16 15:25	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 97 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*90 %*	*Limits: 50-150 %*	"	"	"	
B18-F-7 (A6J0588-10)			**Matrix: Water**		**Batch: 6100736**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	10/19/16 15:53	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 97 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*90 %*	*Limits: 50-150 %*	"	"	"	
B18-F-R1 (A6J0588-11)			**Matrix: Water**		**Batch: 6100736**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	10/19/16 16:20	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 101 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*92 %*	*Limits: 50-150 %*	"	"	"	
B18-F-R2 (A6J0588-12)			**Matrix: Water**		**Batch: 6100736**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	10/19/16 16:48	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 96 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*91 %*	*Limits: 50-150 %*	"	"	"	
B18-F-R3 (A6J0588-13)			**Matrix: Water**		**Batch: 6100736**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	10/19/16 17:16	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 97 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*92 %*	*Limits: 50-150 %*	"	"	"	
B18-OF (A6J0588-14)			**Matrix: Water**		**Batch: 6100736**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	10/19/16 17:43	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 99 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*91 %*	*Limits: 50-150 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB1 (A6J0588-01)			**Matrix: Water**		**Batch: 6100959**			**C-07**
Aroclor 1016	ND	0.0103	0.0206	ug/L	1	10/26/16 20:59	EPA 8082A	
Aroclor 1221	ND	0.0206	0.0206	"	"	"	"	
Aroclor 1232	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1242	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1248	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1254	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1260	ND	0.0103	0.0206	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 90 %*	*Limits: 39-120 %*	"	"	"	
B18-D-CB2 (A6J0588-02)			**Matrix: Water**		**Batch: 6100959**			**C-07**
Aroclor 1016	ND	0.00962	0.0192	ug/L	1	10/26/16 21:17	EPA 8082A	
Aroclor 1221	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1232	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1242	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1248	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1254	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1260	ND	0.00962	0.0192	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 78 %*	*Limits: 39-120 %*	"	"	"	
B18-D-CB3 (A6J0588-03)			**Matrix: Water**		**Batch: 6100959**			**C-07**
Aroclor 1016	ND	0.0103	0.0206	ug/L	1	10/26/16 21:35	EPA 8082A	
Aroclor 1221	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1232	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1242	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1248	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1254	**0.0520**	0.0103	0.0206	"	"	"	"	P-10
Aroclor 1260	**0.0421**	0.0103	0.0206	"	"	"	"	P-10
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 61 %*	*Limits: 39-120 %*	"	"	"	
B18-F-1 (A6J0588-04)			**Matrix: Water**		**Batch: 6100959**			**C-07**
Aroclor 1016	ND	0.0114	0.0227	ug/L	1	10/26/16 20:59	EPA 8082A	
Aroclor 1221	ND	0.0114	0.0227	"	"	"	"	
Aroclor 1232	ND	0.0114	0.0227	"	"	"	"	
Aroclor 1242	ND	0.0114	0.0227	"	"	"	"	
Aroclor 1248	ND	0.0114	0.0227	"	"	"	"	
Aroclor 1254	ND	0.0114	0.0227	"	"	"	"	
Aroclor 1260	ND	0.0114	0.0227	"	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-1 (A6J0588-04)			**Matrix: Water**		**Batch: 6100959**			**C-07**
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 70 %*	*Limits: 39-120 %*	1	"	EPA 8082A	
B18-F-2 (A6J0588-05)			**Matrix: Water**		**Batch: 6100959**			**C-07**
Aroclor 1016	ND	0.0104	0.0208	ug/L	1	10/26/16 21:17	EPA 8082A	
Aroclor 1221	ND	0.0104	0.0208	"	"	"	"	
Aroclor 1232	ND	0.0104	0.0208	"	"	"	"	
Aroclor 1242	ND	0.0104	0.0208	"	"	"	"	
Aroclor 1248	ND	0.0104	0.0208	"	"	"	"	
Aroclor 1254	ND	0.0104	0.0208	"	"	"	"	
Aroclor 1260	ND	0.0104	0.0208	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 70 %*	*Limits: 39-120 %*	"	"	"	
B18-F-3 (A6J0588-06)			**Matrix: Water**		**Batch: 6100959**			**C-07**
Aroclor 1016	ND	0.00943	0.0189	ug/L	1	10/26/16 21:35	EPA 8082A	
Aroclor 1221	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1232	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1242	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1248	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1254	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1260	**0.0378**	0.00943	0.0189	"	"	"	"	P-09
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 75 %*	*Limits: 39-120 %*	"	"	"	
B18-F-4 (A6J0588-07)			**Matrix: Water**		**Batch: 6100888**			**C-07**
Aroclor 1016	ND	0.00962	0.0192	ug/L	1	10/25/16 12:17	EPA 8082A	
Aroclor 1221	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1232	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1242	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1248	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1254	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1260	ND	0.00962	0.0192	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 60 %*	*Limits: 39-120 %*	"	"	"	
B18-F-5 (A6J0588-08)			**Matrix: Water**		**Batch: 6100888**			**C-07**
Aroclor 1016	ND	0.0108	0.0215	ug/L	1	10/25/16 12:35	EPA 8082A	
Aroclor 1221	ND	0.0108	0.0215	"	"	"	"	
Aroclor 1232	ND	0.0108	0.0215	"	"	"	"	
Aroclor 1242	ND	0.0108	0.0215	"	"	"	"	

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-5 (A6J0588-08)			**Matrix: Water**		**Batch: 6100888**			**C-07**
Aroclor 1248	ND	0.0108	0.0215	ug/L	1	"	EPA 8082A	
Aroclor 1254	ND	0.0108	0.0215	"	"	"	"	
Aroclor 1260	ND	0.0108	0.0215	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 72 %*	*Limits: 39-120 %*	"	"	"	
B18-F-6 (A6J0588-09)			**Matrix: Water**		**Batch: 6100888**			**C-07**
Aroclor 1016	ND	0.0106	0.0213	ug/L	1	10/25/16 12:53	EPA 8082A	
Aroclor 1221	ND	0.0106	0.0213	"	"	"	"	
Aroclor 1232	ND	0.0106	0.0213	"	"	"	"	
Aroclor 1242	**0.117**	0.0106	0.0213	"	"	"	"	P-10
Aroclor 1248	ND	0.0106	0.0213	"	"	"	"	
Aroclor 1254	**0.110**	0.0106	0.0213	"	"	"	"	P-10
Aroclor 1260	**0.0523**	0.0106	0.0213	"	"	"	"	P-10
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 69 %*	*Limits: 39-120 %*	"	"	"	
B18-F-7 (A6J0588-10)			**Matrix: Water**		**Batch: 6100888**			**C-07**
Aroclor 1016	ND	0.0101	0.0202	ug/L	1	10/25/16 13:11	EPA 8082A	
Aroclor 1221	ND	0.0101	0.0202	"	"	"	"	
Aroclor 1232	ND	0.0101	0.0202	"	"	"	"	
Aroclor 1242	ND	0.0101	0.0202	"	"	"	"	
Aroclor 1248	ND	0.0101	0.0202	"	"	"	"	
Aroclor 1254	**0.0528**	0.0101	0.0202	"	"	"	"	P-10
Aroclor 1260	**0.0618**	0.0101	0.0202	"	"	"	"	P-10
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 74 %*	*Limits: 39-120 %*	"	"	"	
B18-F-R1 (A6J0588-11)			**Matrix: Water**		**Batch: 6100888**			**C-07**
Aroclor 1016	ND	0.0103	0.0206	ug/L	1	10/25/16 13:28	EPA 8082A	
Aroclor 1221	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1232	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1242	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1248	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1254	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1260	ND	0.0103	0.0206	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 74 %*	*Limits: 39-120 %*	"	"	"	
B18-F-R2 (A6J0588-12)			**Matrix: Water**		**Batch: 6100888**			**C-07**
Aroclor 1016	ND	0.0104	0.0208	ug/L	1	10/25/16 14:24	EPA 8082A	

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-R2 (A6J0588-12)			**Matrix: Water**		**Batch: 6100888**			**C-07**
Aroclor 1221	ND	0.0104	0.0208	ug/L	1	"	EPA 8082A	
Aroclor 1232	ND	0.0104	0.0208	"	"	"	"	
Aroclor 1242	ND	0.0104	0.0208	"	"	"	"	
Aroclor 1248	ND	0.0104	0.0208	"	"	"	"	
Aroclor 1254	ND	0.0104	0.0208	"	"	"	"	
Aroclor 1260	ND	0.0104	0.0208	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 65 %*	*Limits: 39-120 %*	"	"	"	
B18-F-R3 (A6J0588-13)			**Matrix: Water**		**Batch: 6100888**			**C-07**
Aroclor 1016	ND	0.0103	0.0206	ug/L	1	10/25/16 14:42	EPA 8082A	
Aroclor 1221	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1232	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1242	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1248	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1254	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1260	ND	0.0103	0.0206	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 71 %*	*Limits: 39-120 %*	"	"	"	
B18-OF (A6J0588-14)			**Matrix: Water**		**Batch: 6100888**			**C-07**
Aroclor 1016	ND	0.0102	0.0204	ug/L	1	10/25/16 14:59	EPA 8082A	
Aroclor 1221	ND	0.0102	0.0204	"	"	"	"	
Aroclor 1232	ND	0.0204	0.0204	"	"	"	"	
Aroclor 1242	ND	0.0102	0.0204	"	"	"	"	
Aroclor 1248	ND	0.0102	0.0204	"	"	"	"	
Aroclor 1254	ND	0.0102	0.0204	"	"	"	"	
Aroclor 1260	ND	0.0102	0.0204	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 76 %*	*Limits: 39-120 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB1 (A6J0588-01RE1)			**Matrix: Water**		**Batch: 6100792**			
Acenaphthene	ND	0.00952	0.0190	ug/L	1	10/21/16 19:13	EPA 8270D	
Acenaphthylene	ND	0.00952	0.0190	"	"	"	"	
Anthracene	ND	0.00952	0.0190	"	"	"	"	
Benz(a)anthracene	ND	0.00952	0.0190	"	"	"	"	
Benzo(a)pyrene	ND	0.0143	0.0286	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.00952	0.0190	"	"	"	"	
Chrysene	ND	0.00952	0.0190	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00952	0.0190	"	"	"	"	
Fluoranthene	ND	0.00952	0.0190	"	"	"	"	
Fluorene	ND	0.00952	0.0190	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00952	0.0190	"	"	"	"	
1-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
2-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
Naphthalene	ND	0.0190	0.0381	"	"	"	"	
Phenanthrene	**0.0169**	0.00952	0.0190	"	"	"	"	J
Pyrene	ND	0.00952	0.0190	"	"	"	"	
Carbazole	ND	0.0143	0.0286	"	"	"	"	
Dibenzofuran	ND	0.00952	0.0190	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**1.52**	0.190	0.381	"	"	"	"	
Butyl benzyl phthalate	ND	0.190	0.381	"	"	"	"	
Diethylphthalate	ND	0.190	0.381	"	"	"	"	
Dimethylphthalate	ND	0.190	0.381	"	"	"	"	
Di-n-butylphthalate	ND	0.190	0.381	"	"	"	"	
Di-n-octyl phthalate	**1.12**	0.190	0.381	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 64 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*59 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*33 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*91 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*49 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*107 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB2 (A6J0588-02RE1)			**Matrix: Water**		**Batch: 6100792**			
Acenaphthene	ND	0.0111	0.0222	ug/L	1	10/21/16 19:49	EPA 8270D	
Acenaphthylene	ND	0.0111	0.0222	"	"	"	"	
Anthracene	ND	0.0111	0.0222	"	"	"	"	
Benz(a)anthracene	ND	0.0111	0.0222	"	"	"	"	
Benzo(a)pyrene	ND	0.0167	0.0333	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0167	0.0333	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0167	0.0333	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0111	0.0222	"	"	"	"	
Chrysene	ND	0.0111	0.0222	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0111	0.0222	"	"	"	"	
Fluoranthene	ND	0.0111	0.0222	"	"	"	"	
Fluorene	ND	0.0111	0.0222	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0111	0.0222	"	"	"	"	
1-Methylnaphthalene	ND	0.0222	0.0444	"	"	"	"	
2-Methylnaphthalene	ND	0.0222	0.0444	"	"	"	"	
Naphthalene	ND	0.0222	0.0444	"	"	"	"	
Phenanthrene	**0.0235**	0.0111	0.0222	"	"	"	"	
Pyrene	ND	0.0111	0.0222	"	"	"	"	
Carbazole	ND	0.0167	0.0333	"	"	"	"	
Dibenzofuran	ND	0.0111	0.0222	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	0.222	0.444	"	"	"	"	
Butyl benzyl phthalate	ND	0.222	0.444	"	"	"	"	
Diethylphthalate	ND	0.222	0.444	"	"	"	"	
Dimethylphthalate	ND	0.222	0.444	"	"	"	"	
Di-n-butylphthalate	ND	0.222	0.444	"	"	"	"	
Di-n-octyl phthalate	ND	0.222	0.444	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 67 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*58 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*31 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*89 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*42 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*95 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB3 (A6J0588-03RE1)			**Matrix: Water**		**Batch: 6100792**			
Acenaphthene	ND	0.0962	0.192	ug/L	10	10/21/16 14:41	EPA 8270D	
Acenaphthylene	ND	0.0962	0.192	"	"	"	"	
Anthracene	ND	0.0962	0.192	"	"	"	"	
Benz(a)anthracene	**0.135**	0.0962	0.192	"	"	"	"	J
Benzo(a)pyrene	**0.331**	0.144	0.288	"	"	"	"	
Benzo(b)fluoranthene	**0.364**	0.144	0.288	"	"	"	"	M-02
Benzo(k)fluoranthene	ND	0.144	0.288	"	"	"	"	
Benzo(g,h,i)perylene	**0.317**	0.0962	0.192	"	"	"	"	
Chrysene	**0.330**	0.0962	0.192	"	"	"	"	M-02
Dibenz(a,h)anthracene	ND	0.0962	0.192	"	"	"	"	
Fluoranthene	**0.303**	0.0962	0.192	"	"	"	"	
Fluorene	ND	0.0962	0.192	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**0.259**	0.0962	0.192	"	"	"	"	
1-Methylnaphthalene	ND	0.192	0.385	"	"	"	"	
2-Methylnaphthalene	ND	0.192	0.385	"	"	"	"	
Naphthalene	ND	0.192	0.385	"	"	"	"	
Phenanthrene	**0.115**	0.0962	0.192	"	"	"	"	J
Pyrene	**0.415**	0.0962	0.192	"	"	"	"	
Carbazole	ND	0.144	0.288	"	"	"	"	
Dibenzofuran	ND	0.0962	0.192	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**14.9**	1.92	3.85	"	"	"	"	
Butyl benzyl phthalate	ND	1.92	3.85	"	"	"	"	
Diethylphthalate	ND	1.92	3.85	"	"	"	"	
Dimethylphthalate	ND	1.92	3.85	"	"	"	"	
Di-n-butylphthalate	ND	1.92	3.85	"	"	"	"	
Di-n-octyl phthalate	ND	1.92	3.85	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 42 %*	*Limits: 44-120 %*	"	"	"	*S-06*
2-Fluorobiphenyl (Surr)			*58 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*16 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*61 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*27 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*133 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-1 (A6J0588-04RE1)			**Matrix: Water**		**Batch: 6100792**			
Acenaphthene	ND	0.0108	0.0215	ug/L	1	10/21/16 17:02	EPA 8270D	
Acenaphthylene	ND	0.0108	0.0215	"	"	"	"	
Anthracene	ND	0.0108	0.0215	"	"	"	"	
Benz(a)anthracene	**0.0170**	0.0108	0.0215	"	"	"	"	J
Benzo(a)pyrene	**0.0288**	0.0161	0.0323	"	"	"	"	J
Benzo(b)fluoranthene	**0.0535**	0.0161	0.0323	"	"	"	"	M-02
Benzo(k)fluoranthene	**0.0193**	0.0161	0.0323	"	"	"	"	J
Benzo(g,h,i)perylene	**0.0297**	0.0108	0.0215	"	"	"	"	
Chrysene	**0.0527**	0.0108	0.0215	"	"	"	"	M-02
Dibenz(a,h)anthracene	ND	0.0108	0.0215	"	"	"	"	
Fluoranthene	**0.0579**	0.0108	0.0215	"	"	"	"	
Fluorene	**0.0141**	0.0108	0.0215	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	**0.0229**	0.0108	0.0215	"	"	"	"	
1-Methylnaphthalene	ND	0.0215	0.0430	"	"	"	"	
2-Methylnaphthalene	ND	0.0215	0.0430	"	"	"	"	
Naphthalene	ND	0.0215	0.0430	"	"	"	"	
Phenanthrene	**0.0417**	0.0108	0.0215	"	"	"	"	
Pyrene	**0.0537**	0.0108	0.0215	"	"	"	"	
Carbazole	ND	0.0161	0.0323	"	"	"	"	
Dibenzofuran	ND	0.0108	0.0215	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**0.667**	0.215	0.430	"	"	"	"	
Butyl benzyl phthalate	ND	0.215	0.430	"	"	"	"	
Diethylphthalate	ND	0.215	0.430	"	"	"	"	
Dimethylphthalate	ND	0.215	0.430	"	"	"	"	
Di-n-butylphthalate	ND	0.215	0.430	"	"	"	"	
Di-n-octyl phthalate	ND	0.215	0.430	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 53 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*63 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*22 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*81 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*35 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*113 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-2 (A6J0588-05RE1)			**Matrix: Water**		**Batch: 6100792**			
Acenaphthene	ND	0.00952	0.0190	ug/L	1	10/21/16 20:26	EPA 8270D	
Acenaphthylene	ND	0.00952	0.0190	"	"	"	"	
Anthracene	ND	0.00952	0.0190	"	"	"	"	
Benz(a)anthracene	ND	0.00952	0.0190	"	"	"	"	
Benzo(a)pyrene	ND	0.0143	0.0286	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.00952	0.0190	"	"	"	"	
Chrysene	ND	0.00952	0.0190	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00952	0.0190	"	"	"	"	
Fluoranthene	ND	0.00952	0.0190	"	"	"	"	
Fluorene	ND	0.00952	0.0190	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00952	0.0190	"	"	"	"	
1-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
2-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
Naphthalene	ND	0.0190	0.0381	"	"	"	"	
Phenanthrene	**0.0227**	0.00952	0.0190	"	"	"	"	
Pyrene	ND	0.00952	0.0190	"	"	"	"	
Carbazole	ND	0.0143	0.0286	"	"	"	"	
Dibenzofuran	ND	0.00952	0.0190	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**0.368**	0.190	0.381	"	"	"	"	J
Butyl benzyl phthalate	ND	0.190	0.381	"	"	"	"	
Diethylphthalate	ND	0.190	0.381	"	"	"	"	
Dimethylphthalate	ND	0.190	0.381	"	"	"	"	
Di-n-butylphthalate	ND	0.190	0.381	"	"	"	"	
Di-n-octyl phthalate	ND	0.190	0.381	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 78 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*59 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*27 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*73 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*41 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*103 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-3 (A6J0588-06RE1)			**Matrix: Water**		**Batch: 6100792**			
Acenaphthene	ND	0.0106	0.0213	ug/L	1	10/21/16 17:38	EPA 8270D	
Acenaphthylene	ND	0.0106	0.0213	"	"	"	"	
Anthracene	ND	0.0106	0.0213	"	"	"	"	
Benz(a)anthracene	ND	0.0106	0.0213	"	"	"	"	
Benzo(a)pyrene	ND	0.0160	0.0319	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0160	0.0319	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0160	0.0319	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0106	0.0213	"	"	"	"	
Chrysene	ND	0.0106	0.0213	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0106	0.0213	"	"	"	"	
Fluoranthene	**0.0117**	0.0106	0.0213	"	"	"	"	J
Fluorene	ND	0.0106	0.0213	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0106	0.0213	"	"	"	"	
1-Methylnaphthalene	ND	0.0213	0.0426	"	"	"	"	
2-Methylnaphthalene	ND	0.0213	0.0426	"	"	"	"	
Naphthalene	ND	0.0213	0.0426	"	"	"	"	
Phenanthrene	ND	0.0106	0.0213	"	"	"	"	
Pyrene	**0.0158**	0.0106	0.0213	"	"	"	"	J
Carbazole	ND	0.0160	0.0319	"	"	"	"	
Dibenzofuran	ND	0.0106	0.0213	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**0.457**	0.213	0.426	"	"	"	"	
Butyl benzyl phthalate	ND	0.213	0.426	"	"	"	"	
Diethylphthalate	ND	0.213	0.426	"	"	"	"	
Dimethylphthalate	ND	0.213	0.426	"	"	"	"	
Di-n-butylphthalate	ND	0.213	0.426	"	"	"	"	
Di-n-octyl phthalate	ND	0.213	0.426	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 25 %*	*Limits: 44-120 %*	"	"	"	*S-06*
2-Fluorobiphenyl (Surr)			*36 %*	*Limits: 44-120 %*	"	"	"	*S-06*
Phenol-d6 (Surr)			*12 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*80 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*17 %*	*Limits: 19-120 %*	"	"	"	*S-06*
2,4,6-Tribromophenol (Surr)			*109 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-4 (A6J0588-07RE1)			**Matrix: Water**		**Batch: 6100792**			
Acenaphthene	ND	0.0105	0.0211	ug/L	1	10/21/16 18:13	EPA 8270D	
Acenaphthylene	ND	0.0105	0.0211	"	"	"	"	
Anthracene	ND	0.0105	0.0211	"	"	"	"	
Benz(a)anthracene	ND	0.0105	0.0211	"	"	"	"	
Benzo(a)pyrene	ND	0.0158	0.0316	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0158	0.0316	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0158	0.0316	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0105	0.0211	"	"	"	"	
Chrysene	ND	0.0105	0.0211	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0105	0.0211	"	"	"	"	
Fluoranthene	ND	0.0105	0.0211	"	"	"	"	
Fluorene	ND	0.0105	0.0211	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0105	0.0211	"	"	"	"	
1-Methylnaphthalene	ND	0.0211	0.0421	"	"	"	"	
2-Methylnaphthalene	ND	0.0211	0.0421	"	"	"	"	
Naphthalene	ND	0.0211	0.0421	"	"	"	"	
Phenanthrene	ND	0.0105	0.0211	"	"	"	"	
Pyrene	ND	0.0105	0.0211	"	"	"	"	
Carbazole	ND	0.0158	0.0316	"	"	"	"	
Dibenzofuran	ND	0.0105	0.0211	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**3.32**	0.211	0.421	"	"	"	"	
Butyl benzyl phthalate	ND	0.211	0.421	"	"	"	"	
Diethylphthalate	ND	0.211	0.421	"	"	"	"	
Dimethylphthalate	ND	0.211	0.421	"	"	"	"	
Di-n-butylphthalate	ND	0.211	0.421	"	"	"	"	
Di-n-octyl phthalate	ND	0.211	0.421	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 61 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*66 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*25 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*66 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*40 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*110 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-5 (A6J0588-08RE1)			**Matrix: Water**		**Batch: 6100792**			
Acenaphthene	ND	0.00962	0.0192	ug/L	1	10/21/16 18:49	EPA 8270D	
Acenaphthylene	**0.0102**	0.00962	0.0192	"	"	"	"	J
Anthracene	**0.0290**	0.00962	0.0192	"	"	"	"	
Benz(a)anthracene	**0.0797**	0.00962	0.0192	"	"	"	"	
Benzo(a)pyrene	**0.0830**	0.0144	0.0288	"	"	"	"	
Benzo(b)fluoranthene	**0.158**	0.0144	0.0288	"	"	"	"	M-02
Benzo(k)fluoranthene	**0.0496**	0.0144	0.0288	"	"	"	"	M-02
Benzo(g,h,i)perylene	**0.0593**	0.00962	0.0192	"	"	"	"	
Chrysene	**0.159**	0.00962	0.0192	"	"	"	"	
Dibenz(a,h)anthracene	**0.0118**	0.00962	0.0192	"	"	"	"	J
Fluoranthene	**0.151**	0.00962	0.0192	"	"	"	"	
Fluorene	ND	0.00962	0.0192	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**0.0614**	0.00962	0.0192	"	"	"	"	
1-Methylnaphthalene	ND	0.0192	0.0385	"	"	"	"	
2-Methylnaphthalene	ND	0.0192	0.0385	"	"	"	"	
Naphthalene	ND	0.0192	0.0385	"	"	"	"	
Phenanthrene	**0.0254**	0.00962	0.0192	"	"	"	"	
Pyrene	**0.155**	0.00962	0.0192	"	"	"	"	
Carbazole	**0.0155**	0.0144	0.0288	"	"	"	"	J
Dibenzofuran	ND	0.00962	0.0192	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**0.470**	0.192	0.385	"	"	"	"	
Butyl benzyl phthalate	ND	0.192	0.385	"	"	"	"	
Diethylphthalate	ND	0.192	0.385	"	"	"	"	
Dimethylphthalate	ND	0.192	0.385	"	"	"	"	
Di-n-butylphthalate	ND	0.192	0.385	"	"	"	"	
Di-n-octyl phthalate	ND	0.192	0.385	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 63 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*71 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*21 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*64 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*38 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*105 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-6 (A6J0588-09RE1)			**Matrix: Water**		**Batch: 6100792**			
Acenaphthene	**0.186**	0.0388	0.0777	ug/L	4	10/21/16 14:06	EPA 8270D	
Acenaphthylene	ND	0.0388	0.0777	"	"	"	"	
Anthracene	**0.175**	0.0388	0.0777	"	"	"	"	
Benz(a)anthracene	**0.287**	0.0388	0.0777	"	"	"	"	
Benzo(a)pyrene	**0.286**	0.0583	0.117	"	"	"	"	
Benzo(b)fluoranthene	**0.470**	0.0583	0.117	"	"	"	"	M-02
Benzo(k)fluoranthene	**0.154**	0.0583	0.117	"	"	"	"	M-02
Benzo(g,h,i)perylene	**0.225**	0.0388	0.0777	"	"	"	"	
Chrysene	**0.480**	0.0388	0.0777	"	"	"	"	
Dibenz(a,h)anthracene	**0.0492**	0.0388	0.0777	"	"	"	"	J
Fluoranthene	**1.45**	0.0388	0.0777	"	"	"	"	
Fluorene	**0.297**	0.0388	0.0777	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**0.196**	0.0388	0.0777	"	"	"	"	
1-Methylnaphthalene	ND	0.0777	0.155	"	"	"	"	
2-Methylnaphthalene	ND	0.0777	0.155	"	"	"	"	
Naphthalene	ND	0.0777	0.155	"	"	"	"	
Phenanthrene	**0.586**	0.0388	0.0777	"	"	"	"	
Pyrene	**1.13**	0.0388	0.0777	"	"	"	"	
Carbazole	**0.374**	0.0583	0.117	"	"	"	"	
Dibenzofuran	**0.110**	0.0388	0.0777	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**2.31**	0.777	1.55	"	"	"	"	
Butyl benzyl phthalate	**0.953**	0.777	1.55	"	"	"	"	J
Diethylphthalate	ND	0.777	1.55	"	"	"	"	
Dimethylphthalate	ND	0.777	1.55	"	"	"	"	
Di-n-butylphthalate	ND	0.777	1.55	"	"	"	"	
Di-n-octyl phthalate	ND	0.777	1.55	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery: 44 %*	*Limits: 44-120 %*		"	"	"	
2-Fluorobiphenyl (Surr)		*61 %*	*Limits: 44-120 %*		"	"	"	
Phenol-d6 (Surr)		*16 %*	*Limits: 10-120 %*		"	"	"	
p-Terphenyl-d14 (Surr)		*65 %*	*Limits: 50-133 %*		"	"	"	
2-Fluorophenol (Surr)		*23 %*	*Limits: 19-120 %*		"	"	"	
2,4,6-Tribromophenol (Surr)		*118 %*	*Limits: 43-140 %*		"	"	"	

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-7 (A6J0588-10RE1)			**Matrix: Water**		**Batch: 6100792**			
Acenaphthene	ND	0.00962	0.0192	ug/L	1	10/21/16 19:24	EPA 8270D	
Acenaphthylene	ND	0.00962	0.0192	"	"	"	"	
Anthracene	ND	0.00962	0.0192	"	"	"	"	
Benz(a)anthracene	ND	0.00962	0.0192	"	"	"	"	
Benzo(a)pyrene	**0.0169**	0.0144	0.0288	"	"	"	"	J
Benzo(b)fluoranthene	**0.0166**	0.0144	0.0288	"	"	"	"	J
Benzo(k)fluoranthene	ND	0.0144	0.0288	"	"	"	"	
Benzo(g,h,i)perylene	**0.0187**	0.00962	0.0192	"	"	"	"	J
Chrysene	**0.0161**	0.00962	0.0192	"	"	"	"	J
Dibenz(a,h)anthracene	ND	0.00962	0.0192	"	"	"	"	
Fluoranthene	**0.0250**	0.00962	0.0192	"	"	"	"	
Fluorene	**0.0109**	0.00962	0.0192	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	**0.0124**	0.00962	0.0192	"	"	"	"	J
1-Methylnaphthalene	ND	0.0192	0.0385	"	"	"	"	
2-Methylnaphthalene	ND	0.0192	0.0385	"	"	"	"	
Naphthalene	**0.0212**	0.0192	0.0385	"	"	"	"	J
Phenanthrene	**0.0306**	0.00962	0.0192	"	"	"	"	
Pyrene	**0.0280**	0.00962	0.0192	"	"	"	"	
Carbazole	ND	0.0144	0.0288	"	"	"	"	
Dibenzofuran	ND	0.0192	0.0192	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**0.450**	0.192	0.385	"	"	"	"	
Butyl benzyl phthalate	ND	0.192	0.385	"	"	"	"	
Diethylphthalate	ND	0.192	0.385	"	"	"	"	
Dimethylphthalate	ND	0.192	0.385	"	"	"	"	
Di-n-butylphthalate	ND	0.192	0.385	"	"	"	"	
Di-n-octyl phthalate	ND	0.192	0.385	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 61 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*68 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*22 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*66 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*37 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*107 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-R1 (A6J0588-11RE1)			**Matrix: Water**		**Batch: 6100792**			
Acenaphthene	ND	0.00952	0.0190	ug/L	1	10/21/16 20:00	EPA 8270D	
Acenaphthylene	ND	0.00952	0.0190	"	"	"	"	
Anthracene	ND	0.00952	0.0190	"	"	"	"	
Benz(a)anthracene	ND	0.00952	0.0190	"	"	"	"	
Benzo(a)pyrene	ND	0.0143	0.0286	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.00952	0.0190	"	"	"	"	
Chrysene	ND	0.00952	0.0190	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00952	0.0190	"	"	"	"	
Fluoranthene	ND	0.00952	0.0190	"	"	"	"	
Fluorene	**0.00959**	0.00952	0.0190	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	ND	0.00952	0.0190	"	"	"	"	
1-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
2-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
Naphthalene	**0.0246**	0.0190	0.0381	"	"	"	"	J
Phenanthrene	**0.0222**	0.00952	0.0190	"	"	"	"	
Pyrene	ND	0.00952	0.0190	"	"	"	"	
Carbazole	ND	0.0143	0.0286	"	"	"	"	
Dibenzofuran	ND	0.00952	0.0190	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	0.190	0.381	"	"	"	"	
Butyl benzyl phthalate	ND	0.190	0.381	"	"	"	"	
Diethylphthalate	ND	0.190	0.381	"	"	"	"	
Dimethylphthalate	ND	0.190	0.381	"	"	"	"	
Di-n-butylphthalate	ND	0.190	0.381	"	"	"	"	
Di-n-octyl phthalate	ND	0.190	0.381	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 68 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*74 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*23 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*76 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*40 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*111 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-R2 (A6J0588-12RE1)			**Matrix: Water**		**Batch: 6100792**			
Acenaphthene	ND	0.00962	0.0192	ug/L	1	10/21/16 20:35	EPA 8270D	
Acenaphthylene	ND	0.00962	0.0192	"	"	"	"	
Anthracene	ND	0.00962	0.0192	"	"	"	"	
Benz(a)anthracene	ND	0.00962	0.0192	"	"	"	"	
Benzo(a)pyrene	ND	0.0144	0.0288	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0144	0.0288	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0144	0.0288	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.00962	0.0192	"	"	"	"	
Chrysene	ND	0.00962	0.0192	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00962	0.0192	"	"	"	"	
Fluoranthene	**0.0105**	0.00962	0.0192	"	"	"	"	J
Fluorene	**0.00990**	0.00962	0.0192	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	ND	0.00962	0.0192	"	"	"	"	
1-Methylnaphthalene	ND	0.0192	0.0385	"	"	"	"	
2-Methylnaphthalene	ND	0.0192	0.0385	"	"	"	"	
Naphthalene	ND	0.0192	0.0385	"	"	"	"	
Phenanthrene	**0.0178**	0.00962	0.0192	"	"	"	"	J
Pyrene	ND	0.00962	0.0192	"	"	"	"	
Carbazole	ND	0.0144	0.0288	"	"	"	"	
Dibenzofuran	ND	0.00962	0.0192	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	0.192	0.385	"	"	"	"	
Butyl benzyl phthalate	ND	0.192	0.385	"	"	"	"	
Diethylphthalate	ND	0.192	0.385	"	"	"	"	
Dimethylphthalate	ND	0.192	0.385	"	"	"	"	
Di-n-butylphthalate	ND	0.192	0.385	"	"	"	"	
Di-n-octyl phthalate	ND	0.192	0.385	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 64 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*71 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*23 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*64 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*39 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*116 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-R3 (A6J0588-13RE1)			**Matrix: Water**		**Batch: 6100792**			
Acenaphthene	ND	0.00952	0.0190	ug/L	1	10/24/16 13:36	EPA 8270D	
Acenaphthylene	ND	0.00952	0.0190	"	"	"	"	
Anthracene	ND	0.00952	0.0190	"	"	"	"	
Benz(a)anthracene	ND	0.00952	0.0190	"	"	"	"	
Benzo(a)pyrene	ND	0.0143	0.0286	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.00952	0.0190	"	"	"	"	
Chrysene	ND	0.00952	0.0190	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00952	0.0190	"	"	"	"	
Fluoranthene	ND	0.00952	0.0190	"	"	"	"	
Fluorene	**0.0104**	0.00952	0.0190	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	ND	0.00952	0.0190	"	"	"	"	
1-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
2-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
Naphthalene	**0.0290**	0.0190	0.0381	"	"	"	"	J
Phenanthrene	**0.0275**	0.00952	0.0190	"	"	"	"	
Pyrene	ND	0.00952	0.0190	"	"	"	"	
Carbazole	ND	0.0143	0.0286	"	"	"	"	
Dibenzofuran	ND	0.00952	0.0190	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	0.190	0.381	"	"	"	"	
Butyl benzyl phthalate	ND	0.190	0.381	"	"	"	"	
Diethylphthalate	ND	0.190	0.381	"	"	"	"	
Dimethylphthalate	ND	0.190	0.381	"	"	"	"	
Di-n-butylphthalate	ND	0.190	0.381	"	"	"	"	
Di-n-octyl phthalate	ND	0.190	0.381	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 63 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*72 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*21 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*77 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*38 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*105 %*	*Limits: 43-140 %*	"	"	"	*Q-41*

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-OF (A6J0588-14RE2)			**Matrix: Water**		**Batch: 6100792**			
Acenaphthene	ND	0.00943	0.0189	ug/L	1	10/24/16 14:12	EPA 8270D	
Acenaphthylene	ND	0.00943	0.0189	"	"	"	"	
Anthracene	ND	0.00943	0.0189	"	"	"	"	
Benz(a)anthracene	**0.0181**	0.00943	0.0189	"	"	"	"	J
Benzo(a)pyrene	**0.0297**	0.0142	0.0283	"	"	"	"	
Benzo(b)fluoranthene	**0.0397**	0.0142	0.0283	"	"	"	"	M-02
Benzo(k)fluoranthene	**0.0169**	0.0142	0.0283	"	"	"	"	J
Benzo(g,h,i)perylene	**0.0326**	0.00943	0.0189	"	"	"	"	
Chrysene	**0.0441**	0.00943	0.0189	"	"	"	"	M-02
Dibenz(a,h)anthracene	ND	0.00943	0.0189	"	"	"	"	
Fluoranthene	**0.0520**	0.00943	0.0189	"	"	"	"	
Fluorene	ND	0.00943	0.0189	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**0.0238**	0.00943	0.0189	"	"	"	"	
1-Methylnaphthalene	ND	0.0189	0.0377	"	"	"	"	
2-Methylnaphthalene	ND	0.0189	0.0377	"	"	"	"	
Naphthalene	**0.0328**	0.0189	0.0377	"	"	"	"	J
Phenanthrene	**0.0253**	0.00943	0.0189	"	"	"	"	
Pyrene	**0.0700**	0.00943	0.0189	"	"	"	"	
Carbazole	ND	0.0142	0.0283	"	"	"	"	
Dibenzofuran	ND	0.00943	0.0189	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**0.244**	0.189	0.377	"	"	"	"	J
Butyl benzyl phthalate	ND	0.189	0.377	"	"	"	"	
Diethylphthalate	ND	0.189	0.377	"	"	"	"	
Dimethylphthalate	ND	0.189	0.377	"	"	"	"	
Di-n-butylphthalate	ND	0.189	0.377	"	"	"	"	
Di-n-octyl phthalate	ND	0.189	0.377	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 65 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*69 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*22 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*78 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*41 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*114 %*	*Limits: 43-140 %*	"	"	"	*Q-41*

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB1 (A6J0588-01)			**Matrix: Water**					
Batch: 6100941								
Aluminum	**31.9**	25.0	50.0	ug/L	1	10/26/16 18:35	EPA 6020A	J
Antimony	**3.07**	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.133**	0.0400	0.200	"	"	"	"	J
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**1.43**	0.500	1.00	"	"	"	"	
Lead	**0.311**	0.100	0.200	"	"	"	"	
Manganese	**5.76**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**0.544**	0.500	1.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**28.0**	2.00	4.00	"	"	"	"	
B18-D-CB2 (A6J0588-02)			**Matrix: Water**					
Batch: 6100941								
Aluminum	**27.8**	25.0	50.0	ug/L	1	10/26/16 18:38	EPA 6020A	J
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.0444**	0.0400	0.200	"	"	"	"	J
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**0.922**	0.500	1.00	"	"	"	"	J
Lead	**0.322**	0.100	0.200	"	"	"	"	
Manganese	**4.04**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	ND	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**42.6**	2.00	4.00	"	"	"	"	
B18-D-CB3 (A6J0588-03)			**Matrix: Water**					
Batch: 6100941								
Aluminum	**2100**	25.0	50.0	ug/L	1	10/26/16 18:41	EPA 6020A	
Antimony	**6.74**	0.500	1.00	"	"	"	"	
Arsenic	**1.76**	0.500	1.00	"	"	"	"	
Cadmium	**0.611**	0.0400	0.200	"	"	"	"	
Chromium	**9.98**	0.500	1.00	"	"	"	"	
Copper	**59.3**	0.500	1.00	"	"	"	"	

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB3 (A6J0588-03)			**Matrix: Water**					
Lead	**74.8**	0.100	0.200	ug/L	1	"	EPA 6020A	
Manganese	**215**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**5.92**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**578**	2.00	4.00	"	"	"	"	
B18-F-1 (A6J0588-04)			**Matrix: Water**					
Batch: 6100941								
Aluminum	**452**	25.0	50.0	ug/L	1	10/26/16 18:44	EPA 6020A	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.0889**	0.0400	0.200	"	"	"	"	J
Chromium	**4.49**	0.500	1.00	"	"	"	"	
Copper	**5.13**	0.500	1.00	"	"	"	"	
Lead	**2.54**	0.100	0.200	"	"	"	"	
Manganese	**31.1**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**2.42**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**28.7**	2.00	4.00	"	"	"	"	
B18-F-2 (A6J0588-05)			**Matrix: Water**					
Batch: 6100941								
Aluminum	**39.3**	25.0	50.0	ug/L	1	10/26/16 18:47	EPA 6020A	J
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.100**	0.0400	0.200	"	"	"	"	J
Chromium	**0.600**	0.500	1.00	"	"	"	"	J
Copper	**2.86**	0.500	1.00	"	"	"	"	
Lead	**0.844**	0.100	0.200	"	"	"	"	
Manganese	**14.9**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**0.500**	0.500	1.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**29.0**	2.00	4.00	"	"	"	"	
B18-F-3 (A6J0588-06)			**Matrix: Water**					

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-3 (A6J0588-06)			**Matrix: Water**					
Batch: 6100941								
Aluminum	**38.6**	25.0	50.0	ug/L	1	10/26/16 19:00	EPA 6020A	J
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	**4.38**	0.500	1.00	"	"	"	"	
Cadmium	**0.0778**	0.0400	0.200	"	"	"	"	J
Chromium	**2.62**	0.500	1.00	"	"	"	"	
Copper	**18.4**	0.500	1.00	"	"	"	"	
Lead	**2.00**	0.100	0.200	"	"	"	"	
Manganese	**50.4**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**2.70**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**44.5**	2.00	4.00	"	"	"	"	
B18-F-4 (A6J0588-07)			**Matrix: Water**					
Batch: 6100941								
Aluminum	**110**	25.0	50.0	ug/L	1	10/26/16 19:10	EPA 6020A	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	ND	0.0400	0.200	"	"	"	"	
Chromium	**0.544**	0.500	1.00	"	"	"	"	J
Copper	**3.08**	0.500	1.00	"	"	"	"	
Lead	**0.378**	0.100	0.200	"	"	"	"	
Manganese	**78.2**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**1.67**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**35.8**	2.00	4.00	"	"	"	"	
B18-F-5 (A6J0588-08)			**Matrix: Water**					
Batch: 6100941								
Aluminum	**197**	25.0	50.0	ug/L	1	10/26/16 19:13	EPA 6020A	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	ND	0.0400	0.200	"	"	"	"	
Chromium	**5.20**	0.500	1.00	"	"	"	"	
Copper	**4.86**	0.500	1.00	"	"	"	"	

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-5 (A6J0588-08)			**Matrix: Water**					
Lead	**2.28**	0.100	0.200	ug/L	1	"	EPA 6020A	
Manganese	**45.5**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**0.767**	0.500	1.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**10.2**	2.00	4.00	"	"	"	"	
B18-F-6 (A6J0588-09)			**Matrix: Water**					
Batch: 6100941								
Aluminum	**958**	25.0	50.0	ug/L	1	10/26/16 19:16	EPA 6020A	
Antimony	**1.36**	0.500	1.00	"	"	"	"	
Arsenic	**0.956**	0.500	1.00	"	"	"	"	J
Cadmium	**0.478**	0.0400	0.200	"	"	"	"	
Chromium	**18.1**	0.500	1.00	"	"	"	"	
Copper	**25.1**	0.500	1.00	"	"	"	"	
Lead	**33.2**	0.100	0.200	"	"	"	"	
Manganese	**373**	0.500	1.00	"	"	"	"	
Mercury	**0.277**	0.0400	0.0800	"	"	"	"	
Nickel	**3.84**	0.500	1.00	"	"	"	"	
Silver	**0.100**	0.100	0.200	"	"	"	"	J
Zinc	**186**	2.00	4.00	"	"	"	"	
B18-F-7 (A6J0588-10)			**Matrix: Water**					
Batch: 6100941								
Aluminum	**230**	25.0	50.0	ug/L	1	10/26/16 13:14	EPA 6020A	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.100**	0.0400	0.200	"	"	"	"	J
Chromium	**1.61**	0.500	1.00	"	"	"	"	
Copper	**8.54**	0.500	1.00	"	"	"	"	
Lead	**14.4**	0.100	0.200	"	"	"	"	
Manganese	**11.9**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**0.933**	0.500	1.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**25.8**	2.00	4.00	"	"	"	"	
B18-F-R1 (A6J0588-11)			**Matrix: Water**					

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-R1 (A6J0588-11)			**Matrix: Water**					
Batch: 6100956								
Aluminum	ND	25.0	50.0	ug/L	1	10/26/16 17:35	EPA 6020A	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	ND	0.0400	0.200	"	"	"	"	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**0.956**	0.500	1.00	"	"	"	"	J
Lead	**0.133**	0.100	0.200	"	"	"	"	J
Manganese	**1.98**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	ND	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**20.3**	2.00	4.00	"	"	"	"	
B18-F-R2 (A6J0588-12)			**Matrix: Water**					
Batch: 6100956								
Aluminum	**26.2**	25.0	50.0	ug/L	1	10/26/16 17:38	EPA 6020A	J
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.0667**	0.0400	0.200	"	"	"	"	J
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**2.20**	0.500	1.00	"	"	"	"	
Lead	**0.422**	0.100	0.200	"	"	"	"	
Manganese	**7.21**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	ND	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**20.3**	2.00	4.00	"	"	"	"	
B18-F-R3 (A6J0588-13)			**Matrix: Water**					
Batch: 6100956								
Aluminum	**35.4**	25.0	50.0	ug/L	1	10/26/16 17:44	EPA 6020A	J
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	ND	0.0400	0.200	"	"	"	"	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**0.978**	0.500	1.00	"	"	"	"	J

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-R3 (A6J0588-13)			**Matrix: Water**					
Lead	**0.622**	0.100	0.200	ug/L	1	"	EPA 6020A	
Manganese	**12.9**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	ND	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**27.2**	2.00	4.00	"	"	"	"	
B18-OF (A6J0588-14)			**Matrix: Water**					
Batch: 6100956								
Aluminum	**472**	25.0	50.0	ug/L	1	10/26/16 17:48	EPA 6020A	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	**0.578**	0.500	1.00	"	"	"	"	J
Cadmium	**0.0444**	0.0400	0.200	"	"	"	"	J
Chromium	**2.58**	0.500	1.00	"	"	"	"	
Copper	**4.49**	0.500	1.00	"	"	"	"	
Lead	**2.34**	0.100	0.200	"	"	"	"	
Manganese	**145**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**1.07**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**51.6**	2.00	4.00	"	"	"	"	

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB1 (A6J0588-01)			**Matrix: Water**					
Batch: 6100760								
Total Organic Carbon	ND	1.00	1.00	mg/L	1	10/20/16 15:30	SM 5310 B	
Batch: 6100762								
Total Suspended Solids	ND	5.00	5.00	"	"	10/20/16 07:58	SM 2540 D	
B18-D-CB2 (A6J0588-02)			**Matrix: Water**					
Batch: 6100760								
Total Organic Carbon	**1.30**	1.00	1.00	mg/L	1	10/20/16 15:30	SM 5310 B	
Batch: 6100762								
Total Suspended Solids	ND	5.00	5.00	"	"	10/20/16 07:58	SM 2540 D	
B18-D-CB3 (A6J0588-03)			**Matrix: Water**					
Batch: 6100760								
Total Organic Carbon	**5.77**	1.00	1.00	mg/L	1	10/20/16 15:30	SM 5310 B	
Batch: 6100762								
Total Suspended Solids	**104**	5.00	5.00	"	"	10/20/16 07:58	SM 2540 D	
B18-F-1 (A6J0588-04)			**Matrix: Water**					
Batch: 6100760								
Total Organic Carbon	**2.83**	1.00	1.00	mg/L	1	10/20/16 15:30	SM 5310 B	
Batch: 6100762								
Total Suspended Solids	**17.0**	5.00	5.00	"	"	10/20/16 07:58	SM 2540 D	
B18-F-2 (A6J0588-05)			**Matrix: Water**					
Batch: 6100760								
Total Organic Carbon	**2.14**	1.00	1.00	mg/L	1	10/20/16 15:30	SM 5310 B	
Batch: 6100762								
Total Suspended Solids	ND	5.00	5.00	"	"	10/20/16 07:58	SM 2540 D	
B18-F-3 (A6J0588-06)			**Matrix: Water**					
Batch: 6100760								
Total Organic Carbon	**4.15**	1.00	1.00	mg/L	1	10/20/16 15:30	SM 5310 B	
Batch: 6100762								
Total Suspended Solids	**5.00**	5.00	5.00	"	"	10/20/16 07:58	SM 2540 D	
B18-F-4 (A6J0588-07)			**Matrix: Water**					
Batch: 6100760								
Total Organic Carbon	**10.7**	1.00	1.00	mg/L	1	10/20/16 15:30	SM 5310 B	
Batch: 6100762								
Total Suspended Solids	**6.00**	5.00	5.00	"	"	10/20/16 07:58	SM 2540 D	
B18-F-5 (A6J0588-08)			**Matrix: Water**					

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-5 (A6J0588-08)			**Matrix: Water**					
Batch: 6100760								
Total Organic Carbon	**4.25**	1.00	1.00	mg/L	1	10/20/16 15:30	SM 5310 B	
Batch: 6100762								
Total Suspended Solids	**5.00**	5.00	5.00	"	"	10/20/16 07:58	SM 2540 D	
B18-F-6 (A6J0588-09)			**Matrix: Water**					
Batch: 6100760								
Total Organic Carbon	**3.34**	1.00	1.00	mg/L	1	10/20/16 15:30	SM 5310 B	
Batch: 6100762								
Total Suspended Solids	**66.0**	5.00	5.00	"	"	10/20/16 07:58	SM 2540 D	
B18-F-7 (A6J0588-10)			**Matrix: Water**					
Batch: 6100760								
Total Organic Carbon	**2.29**	1.00	1.00	mg/L	1	10/20/16 15:30	SM 5310 B	
Batch: 6100762								
Total Suspended Solids	**10.0**	5.00	5.00	"	"	10/20/16 07:58	SM 2540 D	
B18-F-R1 (A6J0588-11)			**Matrix: Water**					
Batch: 6100760								
Total Organic Carbon	**1.67**	1.00	1.00	mg/L	1	10/20/16 15:30	SM 5310 B	
Batch: 6100762								
Total Suspended Solids	ND	5.00	5.00	"	"	10/20/16 07:58	SM 2540 D	
B18-F-R2 (A6J0588-12)			**Matrix: Water**					
Batch: 6100760								
Total Organic Carbon	**1.86**	1.00	1.00	mg/L	1	10/20/16 15:30	SM 5310 B	
Batch: 6100762								
Total Suspended Solids	ND	5.00	5.00	"	"	10/20/16 07:58	SM 2540 D	
B18-F-R3 (A6J0588-13)			**Matrix: Water**					
Batch: 6100760								
Total Organic Carbon	**2.32**	1.00	1.00	mg/L	1	10/20/16 15:30	SM 5310 B	
Batch: 6100762								
Total Suspended Solids	ND	5.00	5.00	"	"	10/20/16 07:58	SM 2540 D	
B18-OF (A6J0588-14)			**Matrix: Water**					
Batch: 6100760								
Total Organic Carbon	**1.89**	1.00	1.00	mg/L	1	10/20/16 15:30	SM 5310 B	
Batch: 6100762								
Total Suspended Solids	ND	5.00	5.00	"	"	10/20/16 07:58	SM 2540 D	

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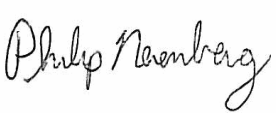

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100732 - EPA 3510C (Fuels/Acid Ext.)									**Water**			
Blank (6100732-BLK1)					Prepared: 10/19/16 08:41		Analyzed: 10/19/16 19:01					
NWTPH-Dx												
Diesel	ND	0.0909	0.182	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 89 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (6100732-BS1)					Prepared: 10/19/16 08:41		Analyzed: 10/19/16 19:23					
NWTPH-Dx												
Diesel	1.10	0.100	0.200	mg/L	1	1.25	---	88	58-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 94 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS Dup (6100732-BSD1)					Prepared: 10/19/16 08:41		Analyzed: 10/19/16 19:46					**Q-19**
NWTPH-Dx												
Diesel	1.10	0.100	0.200	mg/L	1	1.25	---	88	58-115%	0.4	20%	
Surr: o-Terphenyl (Surr)			*Recovery: 86 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100733 - EPA 5030B									**Water**			
Blank (6100733-BLK1)					Prepared: 10/19/16 08:30 Analyzed: 10/19/16 11:31							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 97 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*100 %*	*50-150 %*			*"*					
LCS (6100733-BS2)					Prepared: 10/19/16 08:30 Analyzed: 10/19/16 11:07							
NWTPH-Gx (MS)												
Gasoline Range Organics	0.417	0.0500	0.100	mg/L	1	0.500	---	83	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 97 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*94 %*	*50-150 %*			*"*					

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100736 - EPA 5030B									Water			
Blank (6100736-BLK1)					Prepared: 10/19/16 09:53 Analyzed: 10/19/16 12:11							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 94 %*		*Limits: 50-150 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Sur)			*88 %*		*50-150 %*				*"*			
LCS (6100736-BS2)					Prepared: 10/19/16 09:53 Analyzed: 10/19/16 11:44							
NWTPH-Gx (MS)												
Gasoline Range Organics	0.459	0.0500	0.100	mg/L	1	0.500	---	92	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 94 %*		*Limits: 50-150 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Sur)			*97 %*		*50-150 %*				*"*			

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100888 - EPA 3510C (Neutral pH)								**Water**				
Blank (6100888-BLK1)					Prepared: 10/24/16 07:15 Analyzed: 10/25/16 08:27							**C-07**
EPA 8082A												
Aroclor 1016	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1221	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 62 %*	*Limits: 39-120 %*			*Dilution: 1x*					
LCS (6100888-BS1)					Prepared: 10/24/16 07:15 Analyzed: 10/25/16 08:45							**C-07**
EPA 8082A												
Aroclor 1016	0.721	0.0100	0.0200	ug/L	1	1.25	---	58	46-129%	---	---	
Aroclor 1260	0.853	0.0100	0.0200	"	"	"	---	68	45-134%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 62 %*	*Limits: 39-120 %*			*Dilution: 1x*					
LCS Dup (6100888-BSD1)					Prepared: 10/24/16 07:15 Analyzed: 10/25/16 09:03							**C-07, Q-19**
EPA 8082A												
Aroclor 1016	0.802	0.0100	0.0200	ug/L	1	1.25	---	64	46-129%	11	30%	
Aroclor 1260	0.916	0.0100	0.0200	"	"	"	---	73	45-134%	7	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 73 %*	*Limits: 39-120 %*			*Dilution: 1x*					

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100959 - EPA 3510C (Neutral pH)								**Water**				
Blank (6100959-BLK1)					Prepared: 10/25/16 13:38 Analyzed: 10/26/16 08:43							**C-07**
EPA 8082A												
Aroclor 1016	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1221	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 86 %*	*Limits: 39-120 %*			*Dilution: 1x*					
LCS (6100959-BS1)					Prepared: 10/25/16 13:38 Analyzed: 10/26/16 09:01							**C-07**
EPA 8082A												
Aroclor 1016	0.955	0.0100	0.0200	ug/L	1	1.25	---	76	46-129%	---	---	
Aroclor 1260	1.27	0.0100	0.0200	"	"	"	---	102	45-134%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 96 %*	*Limits: 39-120 %*			*Dilution: 1x*					
LCS Dup (6100959-BSD1)					Prepared: 10/25/16 13:38 Analyzed: 10/26/16 09:19							**C-07, Q-19**
EPA 8082A												
Aroclor 1016	1.02	0.0100	0.0200	ug/L	1	1.25	---	82	46-129%	7	30%	
Aroclor 1260	1.26	0.0100	0.0200	"	"	"	---	101	45-134%	0.7	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 85 %*	*Limits: 39-120 %*			*Dilution: 1x*					

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100792 - EPA 3510C (Acid Extraction)								**Water**				
Blank (6100792-BLK1)					Prepared: 10/20/16 08:37 Analyzed: 10/20/16 16:05							
EPA 8270D												
Acenaphthene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Chrysene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluoranthene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluorene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Naphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Phenanthrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Carbazole	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	0.182	0.364	"	"	---	---	---	---	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 54 %*	*Limits: 44-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*67 %*	*44-120 %*	*"*
Phenol-d6 (Surr)	*28 %*	*10-120 %*	*"*
p-Terphenyl-d14 (Surr)	*92 %*	*50-133 %*	*"*

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100792 - EPA 3510C (Acid Extraction)									**Water**			
Blank (6100792-BLK1)					Prepared: 10/20/16 08:37 Analyzed: 10/20/16 16:05							
Surr: 2-Fluorophenol (Surr)			*Recovery: 45 %*	*Limits: 19-120 %*			*Dilution: 1x*					
2,4,6-Tribromophenol (Surr)			*85 %*	*43-140 %*			*"*					*Q-41*
LCS (6100792-BS1)					Prepared: 10/20/16 08:37 Analyzed: 10/20/16 16:41							
EPA 8270D												
Acenaphthene	2.84	0.0100	0.0200	ug/L	1	4.00	---	71	47-122%	---	---	
Acenaphthylene	2.95	0.0100	0.0200	"	"	"	---	74	41-130%	---	---	
Anthracene	3.41	0.0100	0.0200	"	"	"	---	85	57-123%	---	---	
Benz(a)anthracene	3.41	0.0100	0.0200	"	"	"	---	85	58-125%	---	---	
Benzo(a)pyrene	3.50	0.0150	0.0300	"	"	"	---	88	54-128%	---	---	
Benzo(b)fluoranthene	3.69	0.0150	0.0300	"	"	"	---	92	53-131%	---	---	
Benzo(k)fluoranthene	3.75	0.0150	0.0300	"	"	"	---	94	57-129%	---	---	
Benzo(g,h,i)perylene	3.68	0.0100	0.0200	"	"	"	---	92	50-134%	---	---	
Chrysene	3.44	0.0100	0.0200	"	"	"	---	86	59-123%	---	---	
Dibenz(a,h)anthracene	3.61	0.0100	0.0200	"	"	"	---	90	51-134%	---	---	
Fluoranthene	3.62	0.0100	0.0200	"	"	"	---	91	57-128%	---	---	
Fluorene	3.20	0.0100	0.0200	"	"	"	---	80	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	3.51	0.0100	0.0200	"	"	"	---	88	52-133%	---	---	
1-Methylnaphthalene	2.60	0.0200	0.0400	"	"	"	---	65	41-120%	---	---	
2-Methylnaphthalene	2.64	0.0200	0.0400	"	"	"	---	66	40-121%	---	---	
Naphthalene	2.46	0.0200	0.0400	"	"	"	---	61	"	---	---	
Phenanthrene	3.18	0.0100	0.0200	"	"	"	---	80	59-120%	---	---	
Pyrene	3.69	0.0100	0.0200	"	"	"	---	92	57-126%	---	---	
Carbazole	3.93	0.0150	0.0300	"	"	"	---	98	60-122%	---	---	
Dibenzofuran	3.09	0.0100	0.0200	"	"	"	---	77	53-120%	---	---	
Bis(2-ethylhexyl)phthalate	3.45	0.200	0.400	"	"	"	---	86	55-135%	---	---	
Butyl benzyl phthalate	3.47	0.200	0.400	"	"	"	---	87	53-134%	---	---	
Diethylphthalate	3.48	0.200	0.400	"	"	"	---	87	55-125%	---	---	
Dimethylphthalate	3.59	0.200	0.400	"	"	"	---	90	45-127%	---	---	
Di-n-butylphthalate	3.68	0.200	0.400	"	"	"	---	92	59-127%	---	---	
Di-n-octyl phthalate	3.11	0.200	0.400	"	"	"	---	78	51-140%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 57 %*	*Limits: 44-120 %*			*Dilution: 1x*					

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100792 - EPA 3510C (Acid Extraction)									**Water**			
LCS (6100792-BS1)					Prepared: 10/20/16 08:37 Analyzed: 10/20/16 16:41							
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 73 %*	*Limits: 44-120 %*	*Dilution: 1x*							
Phenol-d6 (Surr)			*27 %*	*10-120 %*	*"*							
p-Terphenyl-d14 (Surr)			*93 %*	*50-133 %*	*"*							
2-Fluorophenol (Surr)			*43 %*	*19-120 %*	*"*							
2,4,6-Tribromophenol (Surr)			*106 %*	*43-140 %*	*"*							*Q-41*
LCS Dup (6100792-BSD1)					Prepared: 10/20/16 08:37 Analyzed: 10/20/16 17:16							**Q-19**
EPA 8270D												
Acenaphthene	3.57	0.0100	0.0200	ug/L	1	4.00	---	89	47-122%	23	30%	
Acenaphthylene	3.68	0.0100	0.0200	"	"	"	---	92	41-130%	22	30%	
Anthracene	3.76	0.0100	0.0200	"	"	"	---	94	57-123%	10	30%	
Benz(a)anthracene	3.63	0.0100	0.0200	"	"	"	---	91	58-125%	6	30%	
Benzo(a)pyrene	3.63	0.0150	0.0300	"	"	"	---	91	54-128%	4	30%	
Benzo(b)fluoranthene	4.12	0.0150	0.0300	"	"	"	---	103	53-131%	11	30%	
Benzo(k)fluoranthene	4.03	0.0150	0.0300	"	"	"	---	101	57-129%	7	30%	
Benzo(g,h,i)perylene	3.78	0.0100	0.0200	"	"	"	---	95	50-134%	3	30%	
Chrysene	3.64	0.0100	0.0200	"	"	"	---	91	59-123%	6	30%	
Dibenz(a,h)anthracene	3.78	0.0100	0.0200	"	"	"	---	95	51-134%	5	30%	
Fluoranthene	3.88	0.0100	0.0200	"	"	"	---	97	57-128%	7	30%	
Fluorene	3.81	0.0100	0.0200	"	"	"	---	95	52-124%	17	30%	
Indeno(1,2,3-cd)pyrene	3.66	0.0100	0.0200	"	"	"	---	91	52-133%	4	30%	
1-Methylnaphthalene	3.45	0.0200	0.0400	"	"	"	---	86	41-120%	28	30%	
2-Methylnaphthalene	3.54	0.0200	0.0400	"	"	"	---	88	40-121%	29	30%	
Naphthalene	3.35	0.0200	0.0400	"	"	"	---	84	"	31	30%	Q-24
Phenanthrene	3.55	0.0100	0.0200	"	"	"	---	89	59-120%	11	30%	
Pyrene	3.91	0.0100	0.0200	"	"	"	---	98	57-126%	6	30%	
Carbazole	4.16	0.0150	0.0300	"	"	"	---	104	60-122%	6	30%	
Dibenzofuran	3.78	0.0100	0.0200	"	"	"	---	94	53-120%	20	30%	
Bis(2-ethylhexyl)phthalate	3.54	0.200	0.400	"	"	"	---	89	55-135%	3	30%	
Butyl benzyl phthalate	3.54	0.200	0.400	"	"	"	---	89	53-134%	2	30%	
Diethylphthalate	3.66	0.200	0.400	"	"	"	---	91	55-125%	5	30%	
Dimethylphthalate	3.85	0.200	0.400	"	"	"	---	96	45-127%	7	30%	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100792 - EPA 3510C (Acid Extraction)							**Water**					
LCS Dup (6100792-BSD1)					Prepared: 10/20/16 08:37		Analyzed: 10/20/16 17:16					**Q-19**
Di-n-butylphthalate	3.73	0.200	0.400	ug/L	"	"	---	93	59-127%	1	30%	
Di-n-octyl phthalate	3.27	0.200	0.400	"	"	"	---	82	51-140%	5	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 73 %*		*Limits: 44-120 %*		*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*91 %*		*44-120 %*		*"*					
Phenol-d6 (Surr)			*30 %*		*10-120 %*		*"*					
p-Terphenyl-d14 (Surr)			*96 %*		*50-133 %*		*"*					
2-Fluorophenol (Surr)			*49 %*		*19-120 %*		*"*					
2,4,6-Tribromophenol (Surr)			*111 %*		*43-140 %*		*"*					*Q-41*

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Tigard, OR 97223
503-718-2323 Phone
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Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100941 - EPA 3015A									**Water**			
Blank (6100941-BLK1)					Prepared: 10/25/16 10:33 Analyzed: 10/26/16 12:38							
EPA 6020A												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Antimony	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	0.0400	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (6100941-BS1)					Prepared: 10/25/16 10:33 Analyzed: 10/26/16 12:41							
EPA 6020A												
Aluminum	5570	25.0	50.0	ug/L	1	5560	---	100	80-120%	---	---	
Antimony	29.1	0.500	1.00	"	"	27.8	---	105	"	---	---	
Arsenic	56.2	0.500	1.00	"	"	55.6	---	101	"	---	---	
Cadmium	54.9	0.0400	0.200	"	"	"	---	99	"	---	---	
Chromium	56.6	0.500	1.00	"	"	"	---	102	"	---	---	
Copper	54.5	0.500	1.00	"	"	"	---	98	"	---	---	
Lead	56.1	0.100	0.200	"	"	"	---	101	"	---	---	
Manganese	56.4	0.500	1.00	"	"	"	---	101	"	---	---	
Mercury	1.05	0.0400	0.0800	"	"	1.11	---	95	"	---	---	
Nickel	55.1	0.500	1.00	"	"	55.6	---	99	"	---	---	
Silver	29.3	0.100	0.200	"	"	27.8	---	105	"	---	---	
Zinc	53.1	2.00	4.00	"	"	55.6	---	96	"	---	---	
Matrix Spike (6100941-MS2)					Prepared: 10/25/16 10:33 Analyzed: 10/26/16 13:17							
QC Source Sample: B18-F-7 (A6J0588-10)												
EPA 6020A												

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100941 - EPA 3015A								**Water**				
Matrix Spike (6100941-MS2)					Prepared: 10/25/16 10:33 Analyzed: 10/26/16 13:17							
QC Source Sample: B18-F-7 (A6J0588-10)												
Aluminum	5830	25.0	50.0	ug/L	1	5560	230	101	75-125%	---	---	
Antimony	28.5	0.500	1.00	"	"	27.8	ND	103	"	---	---	
Arsenic	56.3	0.500	1.00	"	"	55.6	ND	101	"	---	---	
Cadmium	54.9	0.0400	0.200	"	"	"	0.100	99	"	---	---	
Chromium	58.4	0.500	1.00	"	"	"	1.61	102	"	---	---	
Copper	63.8	0.500	1.00	"	"	"	8.54	99	"	---	---	
Lead	70.8	0.100	0.200	"	"	"	14.4	101	"	---	---	
Manganese	70.2	0.500	1.00	"	"	"	11.9	105	"	---	---	
Mercury	1.12	0.0400	0.0800	"	"	1.11	ND	100	"	---	---	
Nickel	57.4	0.500	1.00	"	"	55.6	0.933	102	"	---	---	
Silver	29.6	0.100	0.200	"	"	27.8	ND	107	"	---	---	
Zinc	79.2	2.00	4.00	"	"	55.6	25.8	96	"	---	---	

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Philip Nerenberg, Lab Director

Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100956 - EPA 3015A							**Water**					
Blank (6100956-BLK1)					Prepared: 10/25/16 13:04 Analyzed: 10/26/16 16:06							
EPA 6020A												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Antimony	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	0.0400	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (6100956-BS1)					Prepared: 10/25/16 13:04 Analyzed: 10/26/16 16:09							
EPA 6020A												
Aluminum	5590	25.0	50.0	ug/L	1	5560	---	101	80-120%	---	---	
Antimony	29.1	0.500	1.00	"	"	27.8	---	105	"	---	---	
Arsenic	57.6	0.500	1.00	"	"	55.6	---	104	"	---	---	
Cadmium	57.0	0.0400	0.200	"	"	"	---	103	"	---	---	
Chromium	57.5	0.500	1.00	"	"	"	---	104	"	---	---	
Copper	55.4	0.500	1.00	"	"	"	---	100	"	---	---	
Lead	57.9	0.100	0.200	"	"	"	---	104	"	---	---	
Manganese	57.1	0.500	1.00	"	"	"	---	103	"	---	---	
Mercury	1.10	0.0400	0.0800	"	"	1.11	---	99	"	---	---	
Nickel	56.6	0.500	1.00	"	"	55.6	---	102	"	---	---	
Silver	29.8	0.100	0.200	"	"	27.8	---	107	"	---	---	
Zinc	53.9	2.00	4.00	"	"	55.6	---	97	"	---	---	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100760 - Method Prep: Aq									Water			
Blank (6100760-BLK1)					Prepared: 10/19/16 13:43		Analyzed: 10/20/16 15:30					
SM 5310 B												
Total Organic Carbon	ND	1.00	1.00	mg/L	1	---	---	---	---	---	---	
LCS (6100760-BS1)					Prepared: 10/19/16 13:43		Analyzed: 10/20/16 15:30					
SM 5310 B												
Total Organic Carbon	9.36	1.00	1.00	mg/L	1	10.0	---	94	85-115%	---	---	
LCS (6100760-BS2)					Prepared: 10/19/16 13:43		Analyzed: 10/20/16 15:30					
SM 5310 B												
Total Organic Carbon	ND	1.00	1.00	mg/L	1	0.00	---		85-115%	---	---	TOC_I

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Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6100762 - Total Suspended Solids									Water			
Blank (6100762-BLK1)					Prepared: 10/19/16 16:00		Analyzed: 10/20/16 07:58					
SM 2540 D												
Total Suspended Solids	ND	5.00	5.00	mg/L	1	---	---	---	---	---	---	
Duplicate (6100762-DUP1)					Prepared: 10/19/16 16:00		Analyzed: 10/20/16 07:58					
QC Source Sample: B18-D-CB1 (A6J0588-01)												
SM 2540 D												
Total Suspended Solids	ND	5.00	5.00	mg/L	1	---	ND	---	---	---	10%	
Duplicate (6100762-DUP2)					Prepared: 10/19/16 16:00		Analyzed: 10/20/16 07:58					
QC Source Sample: B18-OF (A6J0588-14)												
SM 2540 D												
Total Suspended Solids	**21.0**	5.00	5.00	mg/L	1	---	ND	---	---		10%	
Reference (6100762-SRM1)					Prepared: 10/19/16 16:00		Analyzed: 10/20/16 07:58					
SM 2540 D												
Total Suspended Solids	93.0			mg/L	1	100		93	77.1-110%	---	---	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6100732							
A6J0588-01	Water	NWTPH-Dx	10/13/16 05:40	10/19/16 14:22	1050mL/5mL	1000mL/5mL	0.95
A6J0588-02	Water	NWTPH-Dx	10/13/16 05:45	10/19/16 14:22	890mL/5mL	1000mL/5mL	1.12
A6J0588-03	Water	NWTPH-Dx	10/13/16 07:25	10/19/16 14:22	1020mL/5mL	1000mL/5mL	0.98
A6J0588-04	Water	NWTPH-Dx	10/13/16 05:55	10/19/16 14:22	940mL/5mL	1000mL/5mL	1.06
A6J0588-05	Water	NWTPH-Dx	10/13/16 07:20	10/19/16 14:52	1050mL/5mL	1000mL/5mL	0.95
A6J0588-06	Water	NWTPH-Dx	10/13/16 06:30	10/19/16 08:41	1060mL/5mL	1000mL/5mL	0.94
A6J0588-07	Water	NWTPH-Dx	10/13/16 06:20	10/19/16 08:41	1050mL/5mL	1000mL/5mL	0.95
A6J0588-08	Water	NWTPH-Dx	10/13/16 07:25	10/19/16 08:41	1020mL/5mL	1000mL/5mL	0.98
A6J0588-09	Water	NWTPH-Dx	10/13/16 06:25	10/19/16 08:41	940mL/5mL	1000mL/5mL	1.06
A6J0588-10	Water	NWTPH-Dx	10/13/16 05:58	10/19/16 08:41	1050mL/5mL	1000mL/5mL	0.95
A6J0588-11	Water	NWTPH-Dx	10/13/16 05:42	10/19/16 08:41	1050mL/5mL	1000mL/5mL	0.95
A6J0588-12	Water	NWTPH-Dx	10/13/16 05:40	10/19/16 08:41	1040mL/5mL	1000mL/5mL	0.96
A6J0588-13	Water	NWTPH-Dx	10/13/16 06:40	10/19/16 08:41	1030mL/5mL	1000mL/5mL	0.97
A6J0588-14	Water	NWTPH-Dx	10/13/16 08:15	10/19/16 08:41	1050mL/5mL	1000mL/5mL	0.95

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6100733							
A6J0588-01	Water	NWTPH-Gx (MS)	10/13/16 05:40	10/19/16 11:34	5mL/5mL	5mL/5mL	1.00
A6J0588-02	Water	NWTPH-Gx (MS)	10/13/16 05:45	10/19/16 11:34	5mL/5mL	5mL/5mL	1.00
A6J0588-03	Water	NWTPH-Gx (MS)	10/13/16 07:25	10/19/16 11:34	5mL/5mL	5mL/5mL	1.00
A6J0588-04	Water	NWTPH-Gx (MS)	10/13/16 05:55	10/19/16 11:34	5mL/5mL	5mL/5mL	1.00
A6J0588-05	Water	NWTPH-Gx (MS)	10/13/16 07:20	10/19/16 11:34	5mL/5mL	5mL/5mL	1.00
Batch: 6100736							
A6J0588-06	Water	NWTPH-Gx (MS)	10/13/16 06:30	10/19/16 11:48	5mL/5mL	5mL/5mL	1.00
A6J0588-07	Water	NWTPH-Gx (MS)	10/13/16 06:20	10/19/16 11:48	5mL/5mL	5mL/5mL	1.00
A6J0588-08	Water	NWTPH-Gx (MS)	10/13/16 07:25	10/19/16 11:48	5mL/5mL	5mL/5mL	1.00
A6J0588-09	Water	NWTPH-Gx (MS)	10/13/16 06:25	10/19/16 11:48	5mL/5mL	5mL/5mL	1.00
A6J0588-10	Water	NWTPH-Gx (MS)	10/13/16 05:58	10/19/16 11:48	5mL/5mL	5mL/5mL	1.00
A6J0588-11	Water	NWTPH-Gx (MS)	10/13/16 05:42	10/19/16 11:48	5mL/5mL	5mL/5mL	1.00
A6J0588-12	Water	NWTPH-Gx (MS)	10/13/16 05:40	10/19/16 11:48	5mL/5mL	5mL/5mL	1.00
A6J0588-13	Water	NWTPH-Gx (MS)	10/13/16 06:40	10/19/16 11:48	5mL/5mL	5mL/5mL	1.00

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

SAMPLE PREPARATION INFORMATION

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A6J0588-14	Water	NWTPH-Gx (MS)	10/13/16 08:15	10/19/16 11:48	5mL/5mL	5mL/5mL	1.00

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3510C (Neutral pH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6100888							
A6J0588-07	Water	EPA 8082A	10/13/16 06:20	10/24/16 07:15	1040mL/1mL	1000mL/1mL	0.96
A6J0588-08	Water	EPA 8082A	10/13/16 07:25	10/24/16 07:15	930mL/1mL	1000mL/1mL	1.08
A6J0588-09	Water	EPA 8082A	10/13/16 06:25	10/24/16 07:15	940mL/1mL	1000mL/1mL	1.06
A6J0588-10	Water	EPA 8082A	10/13/16 05:58	10/24/16 07:15	990mL/1mL	1000mL/1mL	1.01
A6J0588-11	Water	EPA 8082A	10/13/16 05:42	10/24/16 07:15	970mL/1mL	1000mL/1mL	1.03
A6J0588-12	Water	EPA 8082A	10/13/16 05:40	10/24/16 07:15	960mL/1mL	1000mL/1mL	1.04
A6J0588-13	Water	EPA 8082A	10/13/16 06:40	10/24/16 07:15	970mL/1mL	1000mL/1mL	1.03
A6J0588-14	Water	EPA 8082A	10/13/16 08:15	10/24/16 07:15	980mL/1mL	1000mL/1mL	1.02
Batch: 6100959							
A6J0588-01	Water	EPA 8082A	10/13/16 05:40	10/25/16 13:38	970mL/1mL	1000mL/1mL	1.03
A6J0588-02	Water	EPA 8082A	10/13/16 05:45	10/25/16 13:38	1040mL/1mL	1000mL/1mL	0.96
A6J0588-03	Water	EPA 8082A	10/13/16 07:25	10/25/16 13:38	970mL/1mL	1000mL/1mL	1.03
A6J0588-04	Water	EPA 8082A	10/13/16 05:55	10/25/16 13:38	880mL/1mL	1000mL/1mL	1.14
A6J0588-05	Water	EPA 8082A	10/13/16 07:20	10/25/16 13:38	960mL/1mL	1000mL/1mL	1.04
A6J0588-06	Water	EPA 8082A	10/13/16 06:30	10/25/16 13:38	1060mL/1mL	1000mL/1mL	0.94

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6100792							
A6J0588-01RE1	Water	EPA 8270D	10/13/16 05:40	10/20/16 08:37	1050mL/1mL	1000mL/1mL	0.95
A6J0588-02RE1	Water	EPA 8270D	10/13/16 05:45	10/20/16 08:37	900mL/1mL	1000mL/1mL	1.11
A6J0588-03RE1	Water	EPA 8270D	10/13/16 07:25	10/20/16 11:15	1040mL/1mL	1000mL/1mL	0.96
A6J0588-04RE1	Water	EPA 8270D	10/13/16 05:55	10/20/16 11:15	930mL/1mL	1000mL/1mL	1.08
A6J0588-05RE1	Water	EPA 8270D	10/13/16 07:20	10/20/16 11:15	1050mL/1mL	1000mL/1mL	0.95
A6J0588-06RE1	Water	EPA 8270D	10/13/16 06:30	10/20/16 11:15	940mL/1mL	1000mL/1mL	1.06
A6J0588-07RE1	Water	EPA 8270D	10/13/16 06:20	10/20/16 11:15	950mL/1mL	1000mL/1mL	1.05
A6J0588-08RE1	Water	EPA 8270D	10/13/16 07:25	10/20/16 13:37	1040mL/1mL	1000mL/1mL	0.96

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

SAMPLE PREPARATION INFORMATION

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A6J0588-09RE1	Water	EPA 8270D	10/13/16 06:25	10/20/16 13:37	1030mL/1mL	1000mL/1mL	0.97
A6J0588-10RE1	Water	EPA 8270D	10/13/16 05:58	10/20/16 13:37	1040mL/1mL	1000mL/1mL	0.96
A6J0588-11RE1	Water	EPA 8270D	10/13/16 05:42	10/20/16 13:37	1050mL/1mL	1000mL/1mL	0.95
A6J0588-12RE1	Water	EPA 8270D	10/13/16 05:40	10/20/16 13:37	1040mL/1mL	1000mL/1mL	0.96
A6J0588-13RE1	Water	EPA 8270D	10/13/16 06:40	10/20/16 13:37	1050mL/1mL	1000mL/1mL	0.95
A6J0588-14RE2	Water	EPA 8270D	10/13/16 08:15	10/20/16 13:37	1060mL/1mL	1000mL/1mL	0.94

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6100941							
A6J0588-01	Water	EPA 6020A	10/13/16 05:40	10/25/16 10:33	45mL/50mL	45mL/50mL	1.00
A6J0588-02	Water	EPA 6020A	10/13/16 05:45	10/25/16 10:33	45mL/50mL	45mL/50mL	1.00
A6J0588-03	Water	EPA 6020A	10/13/16 07:25	10/25/16 10:33	45mL/50mL	45mL/50mL	1.00
A6J0588-04	Water	EPA 6020A	10/13/16 05:55	10/25/16 10:33	45mL/50mL	45mL/50mL	1.00
A6J0588-05	Water	EPA 6020A	10/13/16 07:20	10/25/16 10:33	45mL/50mL	45mL/50mL	1.00
A6J0588-06	Water	EPA 6020A	10/13/16 06:30	10/25/16 10:33	45mL/50mL	45mL/50mL	1.00
A6J0588-07	Water	EPA 6020A	10/13/16 06:20	10/25/16 10:33	45mL/50mL	45mL/50mL	1.00
A6J0588-08	Water	EPA 6020A	10/13/16 07:25	10/25/16 10:33	45mL/50mL	45mL/50mL	1.00
A6J0588-09	Water	EPA 6020A	10/13/16 06:25	10/25/16 10:33	45mL/50mL	45mL/50mL	1.00
A6J0588-10	Water	EPA 6020A	10/13/16 05:58	10/25/16 10:33	45mL/50mL	45mL/50mL	1.00
Batch: 6100956							
A6J0588-11	Water	EPA 6020A	10/13/16 05:42	10/25/16 13:04	45mL/50mL	45mL/50mL	1.00
A6J0588-12	Water	EPA 6020A	10/13/16 05:40	10/25/16 13:04	45mL/50mL	45mL/50mL	1.00
A6J0588-13	Water	EPA 6020A	10/13/16 06:40	10/25/16 13:04	45mL/50mL	45mL/50mL	1.00
A6J0588-14	Water	EPA 6020A	10/13/16 08:15	10/25/16 13:04	45mL/50mL	45mL/50mL	1.00

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6100760							
A6J0588-01	Water	SM 5310 B	10/13/16 05:40	10/19/16 13:43	40mL/40mL	40mL/40mL	1.00
A6J0588-02	Water	SM 5310 B	10/13/16 05:45	10/19/16 13:43	40mL/40mL	40mL/40mL	1.00
A6J0588-03	Water	SM 5310 B	10/13/16 07:25	10/19/16 13:43	40mL/40mL	40mL/40mL	1.00

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

SAMPLE PREPARATION INFORMATION

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A6J0588-04	Water	SM 5310 B	10/13/16 05:55	10/19/16 13:43	40mL/40mL	40mL/40mL	1.00
A6J0588-05	Water	SM 5310 B	10/13/16 07:20	10/19/16 13:43	40mL/40mL	40mL/40mL	1.00
A6J0588-06	Water	SM 5310 B	10/13/16 06:30	10/19/16 13:43	40mL/40mL	40mL/40mL	1.00
A6J0588-07	Water	SM 5310 B	10/13/16 06:20	10/19/16 13:43	40mL/40mL	40mL/40mL	1.00
A6J0588-08	Water	SM 5310 B	10/13/16 07:25	10/19/16 13:43	40mL/40mL	40mL/40mL	1.00
A6J0588-09	Water	SM 5310 B	10/13/16 06:25	10/19/16 13:43	40mL/40mL	40mL/40mL	1.00
A6J0588-10	Water	SM 5310 B	10/13/16 05:58	10/19/16 13:43	40mL/40mL	40mL/40mL	1.00
A6J0588-11	Water	SM 5310 B	10/13/16 05:42	10/19/16 13:43	40mL/40mL	40mL/40mL	1.00
A6J0588-12	Water	SM 5310 B	10/13/16 05:40	10/19/16 13:43	40mL/40mL	40mL/40mL	1.00
A6J0588-13	Water	SM 5310 B	10/13/16 06:40	10/19/16 13:43	40mL/40mL	40mL/40mL	1.00
A6J0588-14	Water	SM 5310 B	10/13/16 08:15	10/19/16 13:43	40mL/40mL	40mL/40mL	1.00

Prep: Total Suspended Solids

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6100762							
A6J0588-01	Water	SM 2540 D	10/13/16 05:40	10/19/16 16:00	1N/A/1N/A	1N/A/1N/A	NA
A6J0588-02	Water	SM 2540 D	10/13/16 05:45	10/19/16 16:00	1N/A/1N/A	1N/A/1N/A	NA
A6J0588-03	Water	SM 2540 D	10/13/16 07:25	10/19/16 16:00	1N/A/1N/A	1N/A/1N/A	NA
A6J0588-04	Water	SM 2540 D	10/13/16 05:55	10/19/16 16:00	1N/A/1N/A	1N/A/1N/A	NA
A6J0588-05	Water	SM 2540 D	10/13/16 07:20	10/19/16 16:00	1N/A/1N/A	1N/A/1N/A	NA
A6J0588-06	Water	SM 2540 D	10/13/16 06:30	10/19/16 16:00	1N/A/1N/A	1N/A/1N/A	NA
A6J0588-07	Water	SM 2540 D	10/13/16 06:20	10/19/16 16:00	1N/A/1N/A	1N/A/1N/A	NA
A6J0588-08	Water	SM 2540 D	10/13/16 07:25	10/19/16 16:00	1N/A/1N/A	1N/A/1N/A	NA
A6J0588-09	Water	SM 2540 D	10/13/16 06:25	10/19/16 16:00	1N/A/1N/A	1N/A/1N/A	NA
A6J0588-10	Water	SM 2540 D	10/13/16 05:58	10/19/16 16:00	1N/A/1N/A	1N/A/1N/A	NA
A6J0588-11	Water	SM 2540 D	10/13/16 05:42	10/19/16 16:00	1N/A/1N/A	1N/A/1N/A	NA
A6J0588-12	Water	SM 2540 D	10/13/16 05:40	10/19/16 16:00	1N/A/1N/A	1N/A/1N/A	NA
A6J0588-13	Water	SM 2540 D	10/13/16 06:40	10/19/16 16:00	1N/A/1N/A	1N/A/1N/A	NA
A6J0588-14	Water	SM 2540 D	10/13/16 08:15	10/19/16 16:00	1N/A/1N/A	1N/A/1N/A	NA

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

Notes and Definitions

Qualifiers:

C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
M-02	Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
P-09	Due to weathering and/or the presence of an unknown mixture of PCB Congeners, the pattern does not match the standard used for calibration. Results are Estimated and based on the closest matching Aroclor.
P-10	Result estimated due to the presence of multiple PCB Aroclors and/or matrix interference.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-24	RPD for spike and spike duplicate is above established control limit. Recoveries for both spike and spike duplicate are within control limits.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
S-06	Surrogate recovery is outside of established control limits.
TOC_I	Inorganic Carbon Spike Check. Results valid if Non Detect (No Inorganic Carbon detected.)
V-20	Appropriate containers for volatiles analysis were not provided by the client. VOA vials were poured off in the laboratory from non-preserved amber..

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41

For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.

Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

--- QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

*** Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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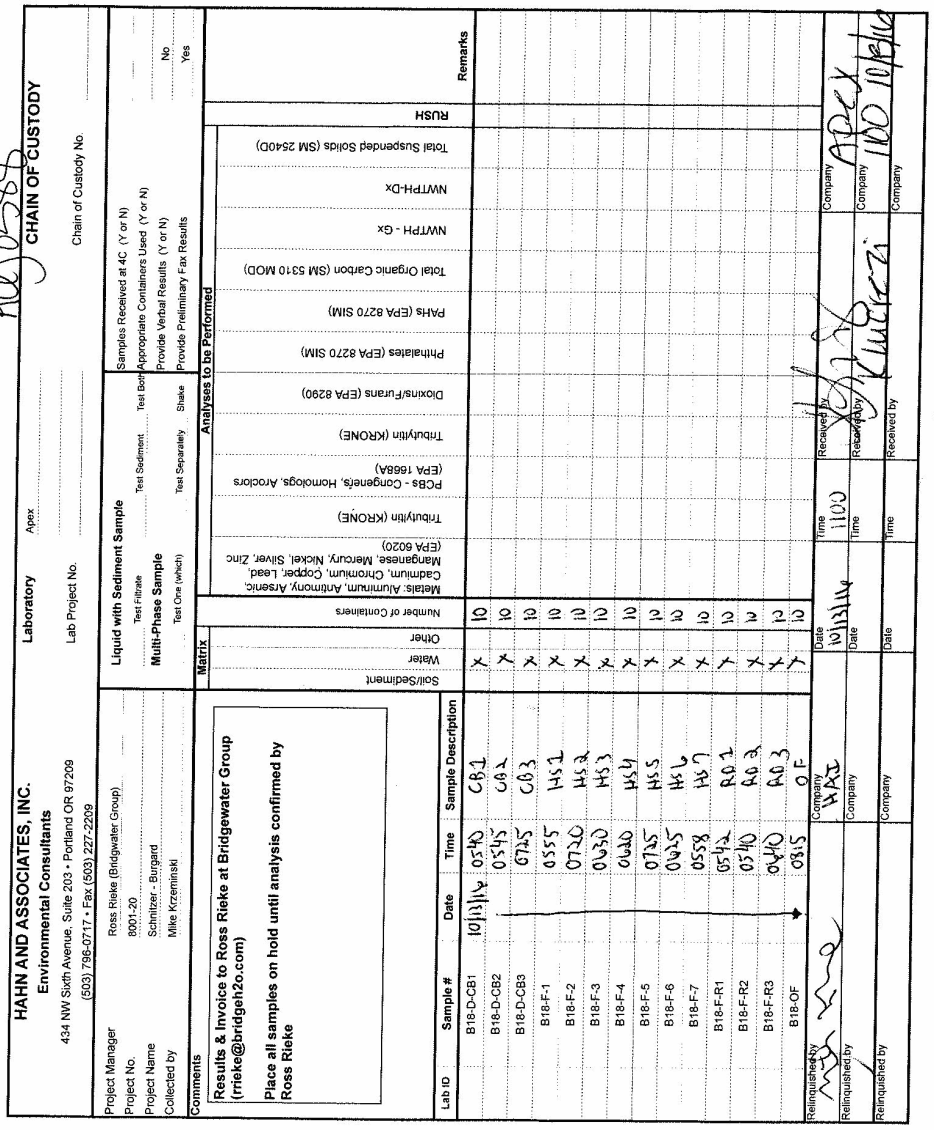
Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	11/15/16 09:41



HAHN AND ASSOCIATES, INC.
Environmental Consultants
434 NW Sixth Avenue, Suite 203 • Portland OR 97209
(503) 796-0717 • Fax (503) 227-2209

Laboratory Apex
Lab Project No.

CHAIN OF CUSTODY
Chain of Custody No.

Project Manager: Ross Rieke (Bridgewater Group)
Project No.: 8001-20
Project Name: Schnitzer - Burgard
Collected by: Mike Krzeminski

Liquid with Sediment Sample — Test Filtrate / Test Sediment / Test Both
Multi-Phase Sample — Test One (which) / Test Separately / Shake

Samples Received at 4C (Y or N)
Appropriate Containers Used (Y or N)
Provide Verbal Results (Y or N)
Provide Preliminary Fax Results

Comments:
Results & Invoice to Ross Rieke at Bridgewater Group (rrieke@bridgeh2o.com)
Place all samples on hold until analysis confirmed by Ross Rieke

Lab ID	Sample #	Date	Time	Sample Description	Matrix: Soil/Sediment	Matrix: Water	Matrix: Other	Number of Containers	Analyses to be Performed: Metals: Aluminum, Antimony, Arsenic, Cadmium, Chromium, Copper, Lead, Manganese, Mercury, Nickel, Silver, Zinc (EPA 6020)	Tributyltin (KRONE)	PCBs - Congeners, Homologs, Aroclors (EPA 1668A)	Tributyltin (KRONE)	Dioxins/Furans (EPA 8290)	Phthalates (EPA 8270 SIM)	PAHs (EPA 8270 SIM)	Total Organic Carbon (SM 5310 MOD)	NWTPH - Gx	NWTPH-Dx	Total Suspended Solids (SM 2540D)	RUSH	Remarks
	B18-D-CB1	10/31/16	0540	CB1		X		10	X												
	B18-D-CB2		0545	CB2		X		10	X												
	B18-D-CB3		0725	CB3		X		10	X												
	B18-F-1		0555	HS1		X		10	X												
	B18-F-2		0720	HS2		X		10	X												
	B18-F-3		0930	HS3		X		10	X												
	B18-F-4		0920	HS4		X		10	X												
	B18-F-5		0725	HS5		X		12	X												
	B18-F-6		0925	HS6		X		10	X												
	B18-F-7		0558	HS7		X		10	X												
	B18-F-R1		0542	RD1		X		10	X												
	B18-F-R2		0540	RD2		X		2	X												
	B18-F-R3		0940	RD3		X		12	X												
	B18-OF		0815	OF		X		10	X												

Relinquished by: Company HAHN — Date 10/31/16 — Time 1100 — Received by — Company Apex
Relinquished by: Company — Date — Time — Received by — Company
Relinquished by: Company — Date — Time — Received by — Company

Apex Laboratories

Philip Nerenberg

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Philip Nerenberg, Lab Director

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

December 06, 2016

Mr. Philip Nerenberg
Apex Laboratories
12232 S.W. Garden Place
Portland, Oregon 97223

Re: Burgard Subcontract
Work Order: 9944
SDG: A6J0588

Dear Mr. Nerenberg:

Cape Fear Analytical, LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 20, 2016. This revised data report has been prepared and reviewed in accordance with CFA's standard operating procedures. Refer to the fractional case narrative for revision details.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (910) 795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

OK PN

SUBCONTRACT ORDER

Apex Laboratories

A6J0588

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Cape Fear Analytical, LLC
3306 Kitty Hawk Rd Suite 120
Wilmington, NC 28405
Phone :(910) 795-0421
Fax: -

CFA WO #9944

Sample Name: B18-D-CB1 **Water** **Sampled: 10/13/16 05:40** (A6J0588-01)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	10/26/16 17:00	10/20/16 05:40	Cape Fear
8290 Dioxins/Furans by HRGC/HRMS (SUB)	10/26/16 17:00	04/11/17 05:40	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.6

Sample Name: B18-D-CB2 **Water** **Sampled: 10/13/16 05:45** (A6J0588-02)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	10/26/16 17:00	10/20/16 05:45	~~Maxxam~~ Cape Fear
8290 Dioxins/Furans by HRGC/HRMS (SUB)	10/26/16 17:00	04/11/17 05:45	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.2
1.9

Sample Name: B18-D-CB3 **Water** **Sampled: 10/13/16 07:25** (A6J0588-03)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	10/26/16 17:00	10/20/16 07:25	~~Maxxam~~ Cape Fear
8290 Dioxins/Furans by HRGC/HRMS (SUB)	10/26/16 17:00	04/11/17 07:25	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.3
1.9

Standard TAT

Released By — Date 10/19/16 — Fed Ex (Shipper) — Received By — Date

Fed Ex (Shipper) — Released By — Date — Received By — Date 20 Oct 2016 10:25

SUBCONTRACT ORDER

Apex Laboratories

A6J0588

CFA WO #9944

Sample Name: B18-F-1 **Water** **Sampled: 10/13/16 05:55** (A6J0588-04)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	10/26/16 17:00	10/20/16 05:55	~~Maxxam~~ Cape Fear
8290 Dioxins/Furans by HRGC/HRMS (SUB)	10/26/16 17:00	04/11/17 05:55	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.3

Sample Name: B18-F-2 **Water** **Sampled: 10/13/16 07:20** (A6J0588-05)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	10/26/16 17:00	10/20/16 07:20	~~Maxxam~~ Cape Fear
8290 Dioxins/Furans by HRGC/HRMS (SUB)	10/26/16 17:00	04/11/17 07:20	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.6
1.2

Sample Name: B18-F-3 **Water** **Sampled: 10/13/16 06:30** (A6J0588-06)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	10/26/16 17:00	10/20/16 06:30	~~Maxxam~~ Cape Fear
8290 Dioxins/Furans by HRGC/HRMS (SUB)	10/26/16 17:00	04/11/17 06:30	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.2
1.9

Sample Name: B18-F-4 **Water** **Sampled: 10/13/16 06:20** (A6J0588-07)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	10/26/16 17:00	10/20/16 06:20	~~Maxxam~~ Cape Fear
8290 Dioxins/Furans by HRGC/HRMS (SUB)	10/26/16 17:00	04/11/17 06:20	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.3
1.9

Released By	Date	Received By	Date
	10/19/16	Fed Ex (Shipper)	
Fed Ex (Shipper)			
Released By	Date	Received By	Date
			20 Oct 2016 10:25

SUBCONTRACT ORDER

Apex Laboratories

A6J0588

CFA WO#9944

Sample Name: B18-F-5 **Water** **Sampled: 10/13/16 07:25** (A6J0588-08)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	10/26/16 17:00	10/20/16 07:25	~~Maxxam~~ Cape F
8290 Dioxins/Furans by HRGC/HRMS (SUB)	10/26/16 17:00	04/11/17 07:25	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.8
1.3

Sample Name: B18-F-6 **Water** **Sampled: 10/13/16 06:25** (A6J0588-09)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	10/26/16 17:00	10/20/16 06:25	~~Maxxam~~ Cape F
8290 Dioxins/Furans by HRGC/HRMS (SUB)	10/26/16 17:00	04/11/17 06:25	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.2

Sample Name: B18-F-7 **Water** **Sampled: 10/13/16 05:58** (A6J0588-10)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	10/26/16 17:00	10/20/16 05:58	~~Maxxam~~ Cape F
8290 Dioxins/Furans by HRGC/HRMS (SUB)	10/26/16 17:00	04/11/17 05:58	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.9

Sample Name: B18-F-R1 **Water** **Sampled: 10/13/16 05:42** (A6J0588-11)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	10/26/16 17:00	10/20/16 05:42	~~Maxxam~~ Cape F
8290 Dioxins/Furans by HRGC/HRMS (SUB)	10/26/16 17:00	04/11/17 05:42	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.3

Released By	Date	Received By	Date
	10/19/16	Fed Ex (Shipper)	
Fed Ex (Shipper)			
Released By	Date	Received By	Date
			20 Oct 2016 10:25

SUBCONTRACT ORDER

Apex Laboratories

A6J0588

CFA WO#9944

Sample Name: B18-F-R2 **Water** **Sampled: 10/13/16 05:40** (A6J0588-12)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	10/26/16 17:00	10/20/16 05:40	~~Maxxam~~ Cape F
8290 Dioxins/Furans by HRGC/HRMS (SUB)	10/26/16 17:00	04/11/17 05:40	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.2

Sample Name: B18-F-R3 **Water** **Sampled: 10/13/16 06:40** (A6J0588-13)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	10/26/16 17:00	10/20/16 06:40	~~Maxxam~~ Cape F
8290 Dioxins/Furans by HRGC/HRMS (SUB)	10/26/16 17:00	04/11/17 06:40	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.2

1.9

Sample Name: B18-OF **Water** **Sampled: 10/13/16 ~~06:40~~ 0815** (A6J0588-14)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	10/26/16 17:00	10/20/16 06:40	~~Maxxam~~ Cape F
8290 Dioxins/Furans by HRGC/HRMS (SUB)	10/26/16 17:00	04/11/17 06:40	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.3

1.9

Released By	Date	Received By	Date
	10/19/16	Fed Ex (Shipper)	
Fed Ex (Shipper)			
Released By	Date	Received By	Date
			20Oct2016 10:25

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: APEX	Work Order: 9944
Shipping Company: Fed Ex	Date/Time Received: 20 Oct 2016 10:25

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: Ice bags (blue ice) dry ice none other (describe) 4 coolers at 1.6, 1.2, 1.9, and 1.8°C
4	Aqueous samples found to have visible solids?	✓			Sample IDs, containers affected: <1% all samples
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH=7 for all If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected: 2-1L narrow mouth ambers
11	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: MTD Date: 20 Oct 2016

CF-UD-F-7

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Apex Laboratories (APEX)
SDG A6J0588
Work Order 9944

Method/Analysis Information

Product:	**Dioxins/Furans by SW846 Method 8290A in Liquids**
Analytical Method:	SW846 8290A
Extraction Method:	SW846 3520C
Analytical Batch Number:	33168
Clean Up Batch Number:	33167
Extraction Batch Number:	33166

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 8290A:

Sample ID	Client ID
9944001	B18-D-CB1
9944002	B18-D-CB2
9944003	B18-D-CB3
9944004	B18-F-1
9944005	B18-F-2
9944006	B18-F-3
9944007	B18-F-4
9944008	B18-F-5
9944009	B18-F-6
9944010	B18-F-7
9944011	B18-F-R1
9944012	B18-F-R2
9944013	B18-F-R3
9944014	B18-OF
12017219	Method Blank (MB)
12017220	Laboratory Control Sample (LCS)
12017221	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear

Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 14.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

System Configuration
This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP750_2	Primary Dioxin Analysis	Dioxin Analysis	DB-5MS	60m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

APEX001 Apex Laboratories

Client SDG: A6J0588 CFA Work Order: 9944

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: **Name: Heather Patterson**

Date: 11 NOV 2016 **Title: Group Leader**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944001**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 05:01**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_2-7**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1041.3 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.48		pg/L	0.480	9.60
40321-76-4	1,2,3,7,8-PeCDD	U	.607		pg/L	0.607	48.0
39227-28-6	1,2,3,4,7,8-HxCDD	U	.811		pg/L	0.811	48.0
57653-85-7	1,2,3,6,7,8-HxCDD	U	.755		pg/L	0.755	48.0
19408-74-3	1,2,3,7,8,9-HxCDD	U	.799		pg/L	0.799	48.0
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	6.13		pg/L	0.997	48.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	24.8		pg/L	2.94	96.0
51207-31-9	2,3,7,8-TCDF	U	.519		pg/L	0.519	9.60
57117-41-6	1,2,3,7,8-PeCDF	J	0.519		pg/L	0.361	48.0
57117-31-4	2,3,4,7,8-PeCDF	U	.33		pg/L	0.330	48.0
70648-26-9	1,2,3,4,7,8-HxCDF	U	.515		pg/L	0.515	48.0
57117-44-9	1,2,3,6,7,8-HxCDF	U	.486		pg/L	0.486	48.0
60851-34-5	2,3,4,6,7,8-HxCDF	U	.513		pg/L	0.513	48.0
72918-21-9	1,2,3,7,8,9-HxCDF	U	.605		pg/L	0.605	48.0
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK		1.36	pg/L	0.446	48.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.567		pg/L	0.567	48.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	1.98		pg/L	1.77	96.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.48		pg/L	0.480	9.60
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.607		pg/L	0.607	48.0
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.755	3.94	pg/L	0.755	48.0
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	12.3		pg/L	0.997	48.0
30402-14-3	Total Tetrachlorodibenzofuran	U	.519		pg/L	0.519	9.60
30402-15-4	Total Pentachlorodibenzofuran	J	0.519		pg/L	0.317	48.0
55684-94-1	Total Hexachlorodibenzofuran	J	0.576		pg/L	0.486	48.0
38998-75-3	Total Heptachlorodibenzofuran	U	.446	2.63	pg/L	0.446	48.0
3333-30-0	TEQ WHO2005 ND=0		0.0849	0.0985	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		0.933	0.945	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1810	1920	pg/L	94.4	(40%-135%)
13C-1,2,3,7,8-PeCDD		1950	1920	pg/L	101	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1760	1920	pg/L	91.5	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1850	1920	pg/L	96.5	(40%-135%)
13C-OCDD		2170	3840	pg/L	56.6	(40%-135%)
13C-2,3,7,8-TCDF		1860	1920	pg/L	96.8	(40%-135%)
13C-1,2,3,7,8-PeCDF		2100	1920	pg/L	109	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1760	1920	pg/L	91.9	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1660	1920	pg/L	86.6	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944002**	**Date Collected:**	**10/13/2016 05:45**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB2**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 05:48**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_2-8**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1002.6 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.634		pg/L	0.634	9.97
40321-76-4	1,2,3,7,8-PeCDD	U	.551		pg/L	0.551	49.9
39227-28-6	1,2,3,4,7,8-HxCDD	U	.944		pg/L	0.944	49.9
57653-85-7	1,2,3,6,7,8-HxCDD	U	.878		pg/L	0.878	49.9
19408-74-3	1,2,3,7,8,9-HxCDD	U	.928		pg/L	0.928	49.9
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	8.16		pg/L	0.752	49.9
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	31.2		pg/L	1.36	99.7
51207-31-9	2,3,7,8-TCDF	U	.65		pg/L	0.650	9.97
57117-41-6	1,2,3,7,8-PeCDF	JK		0.519	pg/L	0.395	49.9
57117-31-4	2,3,4,7,8-PeCDF	U	.361		pg/L	0.361	49.9
70648-26-9	1,2,3,4,7,8-HxCDF	U	.499		pg/L	0.499	49.9
57117-44-9	1,2,3,6,7,8-HxCDF	U	.471		pg/L	0.471	49.9
60851-34-5	2,3,4,6,7,8-HxCDF	U	.497		pg/L	0.497	49.9
72918-21-9	1,2,3,7,8,9-HxCDF	U	.586		pg/L	0.586	49.9
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK		1.76	pg/L	0.606	49.9
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.77		pg/L	0.770	49.9
39001-02-0	1,2,3,4,6,7,8,9-OCDF	JK		3.57	pg/L	2.95	99.7
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.634		pg/L	0.634	9.97
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.551		pg/L	0.551	49.9
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	3.45		pg/L	0.878	49.9
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	16.4		pg/L	0.752	49.9
30402-14-3	Total Tetrachlorodibenzofuran	U	.65		pg/L	0.650	9.97
30402-15-4	Total Pentachlorodibenzofuran	J	0.918	1.44	pg/L	0.279	49.9
55684-94-1	Total Hexachlorodibenzofuran	J	1.84		pg/L	0.471	49.9
38998-75-3	Total Heptachlorodibenzofuran	U	.606	3.99	pg/L	0.606	49.9
3333-30-0	TEQ WHO2005 ND=0		0.0909	0.125	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		1.02	1.05	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1650	1990	pg/L	82.5	(40%-135%)
13C-1,2,3,7,8-PeCDD		1950	1990	pg/L	97.6	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1600	1990	pg/L	80.0	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1700	1990	pg/L	85.3	(40%-135%)
13C-OCDD		2040	3990	pg/L	51.1	(40%-135%)
13C-2,3,7,8-TCDF		1710	1990	pg/L	85.8	(40%-135%)
13C-1,2,3,7,8-PeCDF		2180	1990	pg/L	109	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1610	1990	pg/L	80.8	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1510	1990	pg/L	75.7	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944003**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 06:35**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_2-9**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1039.1 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	J	1.54		pg/L	0.633	9.62
40321-76-4	1,2,3,7,8-PeCDD	J	9.26		pg/L	0.649	48.1
39227-28-6	1,2,3,4,7,8-HxCDD	J	15.0		pg/L	1.49	48.1
57653-85-7	1,2,3,6,7,8-HxCDD		55.9		pg/L	1.38	48.1
19408-74-3	1,2,3,7,8,9-HxCDD	J	30.3		pg/L	1.46	48.1
35822-46-9	1,2,3,4,6,7,8-HpCDD		930		pg/L	4.45	48.1
3268-87-9	1,2,3,4,6,7,8,9-OCDD		6070		pg/L	12.4	96.2
51207-31-9	2,3,7,8-TCDF	J	2.58		pg/L	1.57	9.62
57117-41-6	1,2,3,7,8-PeCDF	J	3.31		pg/L	0.687	48.1
57117-31-4	2,3,4,7,8-PeCDF	J	7.43		pg/L	0.627	48.1
70648-26-9	1,2,3,4,7,8-HxCDF	J	13.0		pg/L	1.18	48.1
57117-44-9	1,2,3,6,7,8-HxCDF	J	11.7		pg/L	1.11	48.1
60851-34-5	2,3,4,6,7,8-HxCDF	J	17.2		pg/L	1.17	48.1
72918-21-9	1,2,3,7,8,9-HxCDF	J	5.39		pg/L	1.38	48.1
67562-39-4	1,2,3,4,6,7,8-HpCDF		181		pg/L	1.43	48.1
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	13.3		pg/L	1.82	48.1
39001-02-0	1,2,3,4,6,7,8,9-OCDF		372		pg/L	8.26	96.2
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	J	8.18	10.7	pg/L	0.633	9.62
36088-22-9	Total Pentachlorodibenzo-p-dioxin		53.7		pg/L	0.649	48.1
34465-46-8	Total Hexachlorodibenzo-p-dioxin		315		pg/L	1.38	48.1
37871-00-4	Total Heptachlorodibenzo-p-dioxin		1600		pg/L	4.45	48.1
30402-14-3	Total Tetrachlorodibenzofuran		17.6	36.9	pg/L	1.57	9.62
30402-15-4	Total Pentachlorodibenzofuran		150	153	pg/L	0.225	48.1
55684-94-1	Total Hexachlorodibenzofuran		363		pg/L	1.11	48.1
38998-75-3	Total Heptachlorodibenzofuran		504		pg/L	1.43	48.1
3333-30-0	TEQ WHO2005 ND=0		41.4	41.4	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		41.4	41.4	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		2100	1920	pg/L	109	(40%-135%)
13C-1,2,3,7,8-PeCDD		2290	1920	pg/L	119	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1910	1920	pg/L	99.5	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1970	1920	pg/L	102	(40%-135%)
13C-OCDD		2420	3850	pg/L	62.8	(40%-135%)
13C-2,3,7,8-TCDF		2030	1920	pg/L	105	(40%-135%)
13C-1,2,3,7,8-PeCDF		2290	1920	pg/L	119	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1890	1920	pg/L	98.4	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1720	1920	pg/L	89.4	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944004**	**Date Collected:**	**10/13/2016 05:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 07:22**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_2-10**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**964 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.535		pg/L	0.535	10.4
40321-76-4	1,2,3,7,8-PeCDD	J	0.747		pg/L	0.554	51.9
39227-28-6	1,2,3,4,7,8-HxCDD	U	1.04		pg/L	1.04	51.9
57653-85-7	1,2,3,6,7,8-HxCDD	U	.965		pg/L	0.965	51.9
19408-74-3	1,2,3,7,8,9-HxCDD	U	1.02		pg/L	1.02	51.9
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	14.6		pg/L	1.08	51.9
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	81.7		pg/L	5.54	104
51207-31-9	2,3,7,8-TCDF	U	.608		pg/L	0.608	10.4
57117-41-6	1,2,3,7,8-PeCDF	J	0.685		pg/L	0.421	51.9
57117-31-4	2,3,4,7,8-PeCDF	U	.386		pg/L	0.386	51.9
70648-26-9	1,2,3,4,7,8-HxCDF	JK		0.560	pg/L	0.523	51.9
57117-44-9	1,2,3,6,7,8-HxCDF	JK		0.560	pg/L	0.492	51.9
60851-34-5	2,3,4,6,7,8-HxCDF	JK		0.539	pg/L	0.521	51.9
72918-21-9	1,2,3,7,8,9-HxCDF	U	.612		pg/L	0.612	51.9
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	4.61		pg/L	0.606	51.9
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.77		pg/L	0.770	51.9
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	13.7		pg/L	4.21	104
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.535		pg/L	0.535	10.4
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	0.747		pg/L	0.554	51.9
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	6.76		pg/L	0.965	51.9
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	32.6		pg/L	1.08	51.9
30402-14-3	Total Tetrachlorodibenzofuran	U	.608		pg/L	0.608	10.4
30402-15-4	Total Pentachlorodibenzofuran	J	2.30	3.01	pg/L	0.349	51.9
55684-94-1	Total Hexachlorodibenzofuran	J	1.58	5.39	pg/L	0.492	51.9
38998-75-3	Total Heptachlorodibenzofuran	J	10.4		pg/L	0.606	51.9
3333-30-0	TEQ WHO2005 ND=0		0.988	1.15	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		1.61	1.70	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		2130	2070	pg/L	103	(40%-135%)
13C-1,2,3,7,8-PeCDD		2440	2070	pg/L	117	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1960	2070	pg/L	94.3	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		2090	2070	pg/L	101	(40%-135%)
13C-OCDD		2370	4150	pg/L	57.2	(40%-135%)
13C-2,3,7,8-TCDF		2110	2070	pg/L	102	(40%-135%)
13C-1,2,3,7,8-PeCDF		2610	2070	pg/L	126	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1990	2070	pg/L	96.2	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1870	2070	pg/L	89.9	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944005**	**Date Collected:**	**10/13/2016 07:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 08:09**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_2-11**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1040.6 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.513		pg/L	0.513	9.61
40321-76-4	1,2,3,7,8-PeCDD	U	.58		pg/L	0.580	48.0
39227-28-6	1,2,3,4,7,8-HxCDD	U	.709		pg/L	0.709	48.0
57653-85-7	1,2,3,6,7,8-HxCDD	JK		0.750	pg/L	0.661	48.0
19408-74-3	1,2,3,7,8,9-HxCDD	U	.7		pg/L	0.700	48.0
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	6.77		pg/L	0.730	48.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	30.9		pg/L	1.43	96.1
51207-31-9	2,3,7,8-TCDF	U	.603		pg/L	0.603	9.61
57117-41-6	1,2,3,7,8-PeCDF	J	0.557		pg/L	0.319	48.0
57117-31-4	2,3,4,7,8-PeCDF	JK		0.461	pg/L	0.292	48.0
70648-26-9	1,2,3,4,7,8-HxCDF	U	.505		pg/L	0.505	48.0
57117-44-9	1,2,3,6,7,8-HxCDF	U	.477		pg/L	0.477	48.0
60851-34-5	2,3,4,6,7,8-HxCDF	U	.504		pg/L	0.504	48.0
72918-21-9	1,2,3,7,8,9-HxCDF	U	.594		pg/L	0.594	48.0
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK		1.23	pg/L	0.425	48.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.54		pg/L	0.540	48.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	2.48		pg/L	1.85	96.1
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.513		pg/L	0.513	9.61
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.58		pg/L	0.580	48.0
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	4.50	6.09	pg/L	0.661	48.0
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	15.7		pg/L	0.730	48.0
30402-14-3	Total Tetrachlorodibenzofuran	U	.603		pg/L	0.603	9.61
30402-15-4	Total Pentachlorodibenzofuran	J	0.557	1.69	pg/L	0.183	48.0
55684-94-1	Total Hexachlorodibenzofuran	J	0.788		pg/L	0.477	48.0
38998-75-3	Total Heptachlorodibenzofuran	U	.425	2.44	pg/L	0.425	48.0
3333-30-0	TEQ WHO2005 ND=0		0.0944	0.320	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		0.927	1.07	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1750	1920	pg/L	91.2	(40%-135%)
13C-1,2,3,7,8-PeCDD		1980	1920	pg/L	103	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1680	1920	pg/L	87.6	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1810	1920	pg/L	94.3	(40%-135%)
13C-OCDD		2310	3840	pg/L	60.2	(40%-135%)
13C-2,3,7,8-TCDF		1820	1920	pg/L	94.5	(40%-135%)
13C-1,2,3,7,8-PeCDF		2140	1920	pg/L	111	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1670	1920	pg/L	86.7	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1620	1920	pg/L	84.5	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944006**	**Date Collected:**	**10/13/2016 06:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 08:56**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_2-12**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1043.2 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.416		pg/L	0.416	9.59
40321-76-4	1,2,3,7,8-PeCDD	U	.518		pg/L	0.518	47.9
39227-28-6	1,2,3,4,7,8-HxCDD	U	.736		pg/L	0.736	47.9
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.25		pg/L	0.686	47.9
19408-74-3	1,2,3,7,8,9-HxCDD	JK		1.13	pg/L	0.727	47.9
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	18.1		pg/L	0.715	47.9
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	91.4		pg/L	2.22	95.9
51207-31-9	2,3,7,8-TCDF	U	.556		pg/L	0.556	9.59
57117-41-6	1,2,3,7,8-PeCDF	J	0.671		pg/L	0.382	47.9
57117-31-4	2,3,4,7,8-PeCDF	U	.349		pg/L	0.349	47.9
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.460		pg/L	0.441	47.9
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.613		pg/L	0.416	47.9
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.844		pg/L	0.441	47.9
72918-21-9	1,2,3,7,8,9-HxCDF	U	.52		pg/L	0.520	47.9
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	9.80		pg/L	0.362	47.9
55673-89-7	1,2,3,4,7,8,9-HpCDF	JK		0.479	pg/L	0.460	47.9
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	9.97		pg/L	1.81	95.9
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.416		pg/L	0.416	9.59
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	2.13	3.14	pg/L	0.518	47.9
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	11.5	12.6	pg/L	0.686	47.9
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	38.0		pg/L	0.715	47.9
30402-14-3	Total Tetrachlorodibenzofuran	J	0.863		pg/L	0.556	9.59
30402-15-4	Total Pentachlorodibenzofuran	J	5.20		pg/L	0.191	47.9
55684-94-1	Total Hexachlorodibenzofuran	J	10.6		pg/L	0.416	47.9
38998-75-3	Total Heptachlorodibenzofuran	J	15.0	15.5	pg/L	0.362	47.9
3333-30-0	TEQ WHO2005 ND=0		0.646	0.764	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		1.29	1.37	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1890	1920	pg/L	98.6	(40%-135%)
13C-1,2,3,7,8-PeCDD		2060	1920	pg/L	107	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1740	1920	pg/L	90.6	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1920	1920	pg/L	100	(40%-135%)
13C-OCDD		2340	3830	pg/L	60.9	(40%-135%)
13C-2,3,7,8-TCDF		1890	1920	pg/L	98.8	(40%-135%)
13C-1,2,3,7,8-PeCDF		2290	1920	pg/L	119	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1710	1920	pg/L	89.0	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1720	1920	pg/L	89.8	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944007**	**Date Collected:**	**10/13/2016 06:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 09:43**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_2-13**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1045 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.423		pg/L	0.423	9.57
40321-76-4	1,2,3,7,8-PeCDD	J	0.440		pg/L	0.390	47.8
39227-28-6	1,2,3,4,7,8-HxCDD	U	.743		pg/L	0.743	47.8
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.804		pg/L	0.693	47.8
19408-74-3	1,2,3,7,8,9-HxCDD	JK		0.842	pg/L	0.731	47.8
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	17.8		pg/L	0.769	47.8
3268-87-9	1,2,3,4,6,7,8,9-OCDD		105		pg/L	1.95	95.7
51207-31-9	2,3,7,8-TCDF	U	.482		pg/L	0.482	9.57
57117-41-6	1,2,3,7,8-PeCDF	U	.302		pg/L	0.302	47.8
57117-31-4	2,3,4,7,8-PeCDF	U	.276		pg/L	0.276	47.8
70648-26-9	1,2,3,4,7,8-HxCDF	U	.538		pg/L	0.538	47.8
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.919		pg/L	0.507	47.8
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.612		pg/L	0.536	47.8
72918-21-9	1,2,3,7,8,9-HxCDF	U	.632		pg/L	0.632	47.8
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	10.8		pg/L	0.408	47.8
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.519		pg/L	0.519	47.8
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	13.2		pg/L	1.83	95.7
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.423		pg/L	0.423	9.57
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	0.440		pg/L	0.390	47.8
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	0.804	6.64	pg/L	0.693	47.8
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	34.0		pg/L	0.769	47.8
30402-14-3	Total Tetrachlorodibenzofuran	U	.482		pg/L	0.482	9.57
30402-15-4	Total Pentachlorodibenzofuran	J	1.51	1.97	pg/L	0.233	47.8
55684-94-1	Total Hexachlorodibenzofuran	J	9.15		pg/L	0.507	47.8
38998-75-3	Total Heptachlorodibenzofuran	J	16.1		pg/L	0.408	47.8
3333-30-0	TEQ WHO2005 ND=0		0.995	1.08	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		1.41	1.46	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		2080	1910	pg/L	109	(40%-135%)
13C-1,2,3,7,8-PeCDD		2250	1910	pg/L	118	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1950	1910	pg/L	102	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		2030	1910	pg/L	106	(40%-135%)
13C-OCDD		2540	3830	pg/L	66.3	(40%-135%)
13C-2,3,7,8-TCDF		2130	1910	pg/L	111	(40%-135%)
13C-1,2,3,7,8-PeCDF		2540	1910	pg/L	133	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1930	1910	pg/L	101	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1860	1910	pg/L	97.2	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944008**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 12:11**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_3-2**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1002.6 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.517		pg/L	0.517	9.97
40321-76-4	1,2,3,7,8-PeCDD	JK		0.997	pg/L	0.642	49.9
39227-28-6	1,2,3,4,7,8-HxCDD	J	1.72		pg/L	0.842	49.9
57653-85-7	1,2,3,6,7,8-HxCDD	J	2.47		pg/L	0.784	49.9
19408-74-3	1,2,3,7,8,9-HxCDD	J	2.19		pg/L	0.830	49.9
35822-46-9	1,2,3,4,6,7,8-HpCDD		75.4		pg/L	1.73	49.9
3268-87-9	1,2,3,4,6,7,8,9-OCDD		762		pg/L	4.95	99.7
51207-31-9	2,3,7,8-TCDF	U	.696		pg/L	0.696	9.97
57117-41-6	1,2,3,7,8-PeCDF	JK		0.638	pg/L	0.431	49.9
57117-31-4	2,3,4,7,8-PeCDF	JK		0.519	pg/L	0.395	49.9
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.618		pg/L	0.473	49.9
57117-44-9	1,2,3,6,7,8-HxCDF	JK		0.698	pg/L	0.445	49.9
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.958		pg/L	0.471	49.9
72918-21-9	1,2,3,7,8,9-HxCDF	U	.555		pg/L	0.555	49.9
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	6.08		pg/L	0.525	49.9
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.666		pg/L	0.666	49.9
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	21.1		pg/L	3.07	99.7
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.517		pg/L	0.517	9.97
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	1.48	5.45	pg/L	0.642	49.9
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	44.5	45.3	pg/L	0.784	49.9
37871-00-4	Total Heptachlorodibenzo-p-dioxin		329		pg/L	1.73	49.9
30402-14-3	Total Tetrachlorodibenzofuran	U	.696		pg/L	0.696	9.97
30402-15-4	Total Pentachlorodibenzofuran	J	3.35	5.21	pg/L	0.233	49.9
55684-94-1	Total Hexachlorodibenzofuran	J	11.2	11.8	pg/L	0.445	49.9
38998-75-3	Total Heptachlorodibenzofuran	J	20.8		pg/L	0.525	49.9
3333-30-0	TEQ WHO2005 ND=0		1.85	3.09	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		2.58	3.41	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1940	1990	pg/L	97.3	(40%-135%)
13C-1,2,3,7,8-PeCDD		2030	1990	pg/L	102	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1790	1990	pg/L	89.9	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1910	1990	pg/L	96.0	(40%-135%)
13C-OCDD		2310	3990	pg/L	58.0	(40%-135%)
13C-2,3,7,8-TCDF		1950	1990	pg/L	97.8	(40%-135%)
13C-1,2,3,7,8-PeCDF		2200	1990	pg/L	110	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1770	1990	pg/L	88.8	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1730	1990	pg/L	86.7	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944009**	**Date Collected:**	**10/13/2016 06:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 12:58**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_3-3**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1015 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.556		pg/L	0.556	9.85
40321-76-4	1,2,3,7,8-PeCDD	J	1.67		pg/L	1.10	49.3
39227-28-6	1,2,3,4,7,8-HxCDD	J	1.34		pg/L	1.05	49.3
57653-85-7	1,2,3,6,7,8-HxCDD	J	4.93		pg/L	0.977	49.3
19408-74-3	1,2,3,7,8,9-HxCDD	J	3.43		pg/L	1.03	49.3
35822-46-9	1,2,3,4,6,7,8-HpCDD		83.2		pg/L	1.57	49.3
3268-87-9	1,2,3,4,6,7,8,9-OCDD		553		pg/L	3.86	98.5
51207-31-9	2,3,7,8-TCDF	U	1.1		pg/L	1.10	9.85
57117-41-6	1,2,3,7,8-PeCDF	J	0.867		pg/L	0.625	49.3
57117-31-4	2,3,4,7,8-PeCDF	J	1.52		pg/L	0.571	49.3
70648-26-9	1,2,3,4,7,8-HxCDF	JK		1.34	pg/L	0.656	49.3
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.58		pg/L	0.619	49.3
60851-34-5	2,3,4,6,7,8-HxCDF	JK		1.46	pg/L	0.654	49.3
72918-21-9	1,2,3,7,8,9-HxCDF	U	.77		pg/L	0.770	49.3
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	12.7		pg/L	0.843	49.3
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	1.07		pg/L	1.07	49.3
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	34.0		pg/L	2.52	98.5
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	J	0.749	1.46	pg/L	0.556	9.85
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	1.67	4.87	pg/L	1.10	49.3
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	32.2	34.8	pg/L	0.977	49.3
37871-00-4	Total Heptachlorodibenzo-p-dioxin		172		pg/L	1.57	49.3
30402-14-3	Total Tetrachlorodibenzofuran	J	5.32	6.68	pg/L	1.10	9.85
30402-15-4	Total Pentachlorodibenzofuran	J	16.6	19.0	pg/L	0.266	49.3
55684-94-1	Total Hexachlorodibenzofuran	J	17.4	23.9	pg/L	0.619	49.3
38998-75-3	Total Heptachlorodibenzofuran	J	33.6		pg/L	0.843	49.3
3333-30-0	TEQ WHO2005 ND=0		4.42	4.70	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		4.86	5.07	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1940	1970	pg/L	98.2	(40%-135%)
13C-1,2,3,7,8-PeCDD		2060	1970	pg/L	105	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1770	1970	pg/L	89.6	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1910	1970	pg/L	97.1	(40%-135%)
13C-OCDD		2440	3940	pg/L	62.0	(40%-135%)
13C-2,3,7,8-TCDF		1920	1970	pg/L	97.6	(40%-135%)
13C-1,2,3,7,8-PeCDF		2190	1970	pg/L	111	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1790	1970	pg/L	90.8	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1730	1970	pg/L	87.9	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944010**	**Date Collected:**	**10/13/2016 05:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 13:46**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_3-4**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1040.4 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.521		pg/L	0.521	9.61
40321-76-4	1,2,3,7,8-PeCDD	JK		1.71	pg/L	0.644	48.1
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.923		pg/L	0.732	48.1
57653-85-7	1,2,3,6,7,8-HxCDD	JK		1.23	pg/L	0.682	48.1
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.44		pg/L	0.721	48.1
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	18.7		pg/L	0.913	48.1
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	88.8		pg/L	2.29	96.1
51207-31-9	2,3,7,8-TCDF	J	2.56		pg/L	0.980	9.61
57117-41-6	1,2,3,7,8-PeCDF	J	1.19		pg/L	0.575	48.1
57117-31-4	2,3,4,7,8-PeCDF	J	2.33		pg/L	0.525	48.1
70648-26-9	1,2,3,4,7,8-HxCDF	J	1.33		pg/L	0.398	48.1
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.15		pg/L	0.375	48.1
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.88		pg/L	0.396	48.1
72918-21-9	1,2,3,7,8,9-HxCDF	U	.467		pg/L	0.467	48.1
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	9.52		pg/L	1.06	48.1
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	1.35		pg/L	1.35	48.1
39001-02-0	1,2,3,4,6,7,8,9-OCDF	JK		10.4	pg/L	1.87	96.1
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	J	0.884		pg/L	0.521	9.61
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	1.04	4.54	pg/L	0.644	48.1
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	10.2	15.3	pg/L	0.682	48.1
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	39.5		pg/L	0.913	48.1
30402-14-3	Total Tetrachlorodibenzofuran		16.3	18.1	pg/L	0.980	9.61
30402-15-4	Total Pentachlorodibenzofuran	J	32.8	35.9	pg/L	0.238	48.1
55684-94-1	Total Hexachlorodibenzofuran	J	24.0	25.1	pg/L	0.375	48.1
38998-75-3	Total Heptachlorodibenzofuran	J	17.2		pg/L	1.06	48.1
3333-30-0	TEQ WHO2005 ND=0		1.97	3.81	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		2.62	4.10	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1910	1920	pg/L	99.1	(40%-135%)
13C-1,2,3,7,8-PeCDD		1980	1920	pg/L	103	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1770	1920	pg/L	92.0	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1890	1920	pg/L	98.3	(40%-135%)
13C-OCDD		2340	3840	pg/L	61.0	(40%-135%)
13C-2,3,7,8-TCDF		1890	1920	pg/L	98.5	(40%-135%)
13C-1,2,3,7,8-PeCDF		1980	1920	pg/L	103	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1760	1920	pg/L	91.7	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1670	1920	pg/L	86.6	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944011**	**Date Collected:**	**10/13/2016 05:42**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 14:32**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_3-5**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1030.4 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.604		pg/L	0.604	9.70
40321-76-4	1,2,3,7,8-PeCDD	U	.472		pg/L	0.472	48.5
39227-28-6	1,2,3,4,7,8-HxCDD	U	.837		pg/L	0.837	48.5
57653-85-7	1,2,3,6,7,8-HxCDD	U	.78		pg/L	0.780	48.5
19408-74-3	1,2,3,7,8,9-HxCDD	U	.825		pg/L	0.825	48.5
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	5.98		pg/L	0.945	48.5
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	19.5		pg/L	2.19	97.0
51207-31-9	2,3,7,8-TCDF	U	.549		pg/L	0.549	9.70
57117-41-6	1,2,3,7,8-PeCDF	U	.324		pg/L	0.324	48.5
57117-31-4	2,3,4,7,8-PeCDF	U	.297		pg/L	0.297	48.5
70648-26-9	1,2,3,4,7,8-HxCDF	U	.386		pg/L	0.386	48.5
57117-44-9	1,2,3,6,7,8-HxCDF	U	.363		pg/L	0.363	48.5
60851-34-5	2,3,4,6,7,8-HxCDF	U	.384		pg/L	0.384	48.5
72918-21-9	1,2,3,7,8,9-HxCDF	U	.452		pg/L	0.452	48.5
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK		1.01	pg/L	0.571	48.5
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.726		pg/L	0.726	48.5
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	1.71		pg/L	1.71	97.0
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.604		pg/L	0.604	9.70
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.472		pg/L	0.472	48.5
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	1.59	5.92	pg/L	0.780	48.5
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	14.1		pg/L	0.945	48.5
30402-14-3	Total Tetrachlorodibenzofuran	U	.549		pg/L	0.549	9.70
30402-15-4	Total Pentachlorodibenzofuran	U	.239	0.330	pg/L	0.239	48.5
55684-94-1	Total Hexachlorodibenzofuran	J	0.543		pg/L	0.363	48.5
38998-75-3	Total Heptachlorodibenzofuran	U	.571	1.79	pg/L	0.571	48.5
3333-30-0	TEQ WHO2005 ND=0		0.0656	0.0757	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		0.888	0.896	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1700	1940	pg/L	87.7	(40%-135%)
13C-1,2,3,7,8-PeCDD		1910	1940	pg/L	98.5	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1680	1940	pg/L	86.6	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1820	1940	pg/L	93.7	(40%-135%)
13C-OCDD		2330	3880	pg/L	60.1	(40%-135%)
13C-2,3,7,8-TCDF		1740	1940	pg/L	89.4	(40%-135%)
13C-1,2,3,7,8-PeCDF		1980	1940	pg/L	102	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1650	1940	pg/L	84.9	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1630	1940	pg/L	83.9	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944012**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 15:19**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_3-6**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1014 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.663		pg/L	0.663	9.86
40321-76-4	1,2,3,7,8-PeCDD	U	.643		pg/L	0.643	49.3
39227-28-6	1,2,3,4,7,8-HxCDD	JK		0.927	pg/L	0.738	49.3
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.42		pg/L	0.686	49.3
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.64		pg/L	0.726	49.3
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	23.3		pg/L	0.876	49.3
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	75.8		pg/L	2.98	98.6
51207-31-9	2,3,7,8-TCDF	U	.607		pg/L	0.607	9.86
57117-41-6	1,2,3,7,8-PeCDF	U	.489		pg/L	0.489	49.3
57117-31-4	2,3,4,7,8-PeCDF	U	.448		pg/L	0.448	49.3
70648-26-9	1,2,3,4,7,8-HxCDF	U	.517		pg/L	0.517	49.3
57117-44-9	1,2,3,6,7,8-HxCDF	U	.487		pg/L	0.487	49.3
60851-34-5	2,3,4,6,7,8-HxCDF	U	.515		pg/L	0.515	49.3
72918-21-9	1,2,3,7,8,9-HxCDF	U	.607		pg/L	0.607	49.3
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	2.84		pg/L	0.671	49.3
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.852		pg/L	0.852	49.3
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	4.81		pg/L	2.05	98.6
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	J	1.12		pg/L	0.663	9.86
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	1.70	2.37	pg/L	0.643	49.3
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	22.0	24.1	pg/L	0.686	49.3
37871-00-4	Total Heptachlorodibenzo-p-dioxin		54.2		pg/L	0.876	49.3
30402-14-3	Total Tetrachlorodibenzofuran	U	.607		pg/L	0.607	9.86
30402-15-4	Total Pentachlorodibenzofuran	J	0.631		pg/L	0.258	49.3
55684-94-1	Total Hexachlorodibenzofuran	J	1.83		pg/L	0.487	49.3
38998-75-3	Total Heptachlorodibenzofuran	J	5.07		pg/L	0.671	49.3
3333-30-0	TEQ WHO2005 ND=0		0.592	0.684	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		1.50	1.55	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1790	1970	pg/L	90.8	(40%-135%)
13C-1,2,3,7,8-PeCDD		1930	1970	pg/L	98.0	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1690	1970	pg/L	85.9	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1830	1970	pg/L	93.0	(40%-135%)
13C-OCDD		2190	3940	pg/L	55.6	(40%-135%)
13C-2,3,7,8-TCDF		1830	1970	pg/L	92.8	(40%-135%)
13C-1,2,3,7,8-PeCDF		1970	1970	pg/L	100	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1670	1970	pg/L	84.6	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1580	1970	pg/L	80.1	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944013**	**Date Collected:**	**10/13/2016 06:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 16:06**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_3-7**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**985.6 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.605		pg/L	0.605	10.1
40321-76-4	1,2,3,7,8-PeCDD	U	.564		pg/L	0.564	50.7
39227-28-6	1,2,3,4,7,8-HxCDD	U	.903		pg/L	0.903	50.7
57653-85-7	1,2,3,6,7,8-HxCDD	U	.84		pg/L	0.840	50.7
19408-74-3	1,2,3,7,8,9-HxCDD	U	.889		pg/L	0.889	50.7
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	12.3		pg/L	1.57	50.7
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	42.2		pg/L	4.59	101
51207-31-9	2,3,7,8-TCDF	U	.666		pg/L	0.666	10.1
57117-41-6	1,2,3,7,8-PeCDF	J	0.649		pg/L	0.641	50.7
57117-31-4	2,3,4,7,8-PeCDF	U	.586		pg/L	0.586	50.7
70648-26-9	1,2,3,4,7,8-HxCDF	U	.532		pg/L	0.532	50.7
57117-44-9	1,2,3,6,7,8-HxCDF	U	.501		pg/L	0.501	50.7
60851-34-5	2,3,4,6,7,8-HxCDF	U	.53		pg/L	0.530	50.7
72918-21-9	1,2,3,7,8,9-HxCDF	U	.625		pg/L	0.625	50.7
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK		1.44	pg/L	0.593	50.7
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.755		pg/L	0.755	50.7
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	3.31		pg/L	2.27	101
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.605		pg/L	0.605	10.1
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	0.832	1.93	pg/L	0.564	50.7
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	8.28		pg/L	0.840	50.7
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	26.7		pg/L	1.57	50.7
30402-14-3	Total Tetrachlorodibenzofuran	U	.666		pg/L	0.666	10.1
30402-15-4	Total Pentachlorodibenzofuran	J	1.18		pg/L	0.345	50.7
55684-94-1	Total Hexachlorodibenzofuran	J	1.01		pg/L	0.501	50.7
38998-75-3	Total Heptachlorodibenzofuran	J	1.46	2.90	pg/L	0.593	50.7
3333-30-0	TEQ WHO2005 ND=0		0.156	0.170	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		1.11	1.12	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1890	2030	pg/L	93.0	(40%-135%)
13C-1,2,3,7,8-PeCDD		2050	2030	pg/L	101	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1810	2030	pg/L	89.2	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1880	2030	pg/L	92.4	(40%-135%)
13C-OCDD		2290	4060	pg/L	56.5	(40%-135%)
13C-2,3,7,8-TCDF		1860	2030	pg/L	91.9	(40%-135%)
13C-1,2,3,7,8-PeCDF		2040	2030	pg/L	101	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1770	2030	pg/L	87.3	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1670	2030	pg/L	82.4	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944014**	**Date Collected:**	**10/13/2016 08:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-OF**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 16:53**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_3-8**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1044.4 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.603		pg/L	0.603	9.57
40321-76-4	1,2,3,7,8-PeCDD	J	0.747		pg/L	0.594	47.9
39227-28-6	1,2,3,4,7,8-HxCDD	J	0.843		pg/L	0.789	47.9
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.49		pg/L	0.735	47.9
19408-74-3	1,2,3,7,8,9-HxCDD	JK		1.23	pg/L	0.777	47.9
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	31.8		pg/L	2.13	47.9
3268-87-9	1,2,3,4,6,7,8,9-OCDD		312		pg/L	3.56	95.7
51207-31-9	2,3,7,8-TCDF	U	.651		pg/L	0.651	9.57
57117-41-6	1,2,3,7,8-PeCDF	U	.521		pg/L	0.521	47.9
57117-31-4	2,3,4,7,8-PeCDF	U	.475		pg/L	0.475	47.9
70648-26-9	1,2,3,4,7,8-HxCDF	U	.751		pg/L	0.751	47.9
57117-44-9	1,2,3,6,7,8-HxCDF	U	.709		pg/L	0.709	47.9
60851-34-5	2,3,4,6,7,8-HxCDF	U	.749		pg/L	0.749	47.9
72918-21-9	1,2,3,7,8,9-HxCDF	U	.881		pg/L	0.881	47.9
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	6.09		pg/L	0.714	47.9
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.91		pg/L	0.910	47.9
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	34.2		pg/L	2.74	95.7
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.603		pg/L	0.603	9.57
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	0.747		pg/L	0.594	47.9
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	2.34	12.5	pg/L	0.735	47.9
37871-00-4	Total Heptachlorodibenzo-p-dioxin		59.7		pg/L	2.13	47.9
30402-14-3	Total Tetrachlorodibenzofuran	U	.651		pg/L	0.651	9.57
30402-15-4	Total Pentachlorodibenzofuran	U	.347	2.07	pg/L	0.347	47.9
55684-94-1	Total Hexachlorodibenzofuran	J	4.58	6.80	pg/L	0.709	47.9
38998-75-3	Total Heptachlorodibenzofuran	J	20.8		pg/L	0.714	47.9
3333-30-0	TEQ WHO2005 ND=0		1.46	1.59	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		2.07	2.16	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1740	1910	pg/L	90.7	(40%-135%)
13C-1,2,3,7,8-PeCDD		1850	1910	pg/L	96.4	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1680	1910	pg/L	87.8	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1720	1910	pg/L	89.8	(40%-135%)
13C-OCDD		1990	3830	pg/L	51.9	(40%-135%)
13C-2,3,7,8-TCDF		1720	1910	pg/L	90.0	(40%-135%)
13C-1,2,3,7,8-PeCDF		1840	1910	pg/L	95.9	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1650	1910	pg/L	86.4	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1560	1910	pg/L	81.6	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017220	LCS for batch 33166	13C-2,3,7,8-TCDD		90.2	(40%-135%)
		13C-1,2,3,7,8-PeCDD		92.4	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		89.3	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		88.9	(40%-135%)
		13C-OCDD		49.7	(40%-135%)
		13C-2,3,7,8-TCDF		92.8	(40%-135%)
		13C-1,2,3,7,8-PeCDF		95.9	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		89.7	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		81.1	(40%-135%)
12017221	LCSD for batch 33166	13C-2,3,7,8-TCDD		97.2	(40%-135%)
		13C-1,2,3,7,8-PeCDD		100	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		93.5	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		97.6	(40%-135%)
		13C-OCDD		57.6	(40%-135%)
		13C-2,3,7,8-TCDF		100	(40%-135%)
		13C-1,2,3,7,8-PeCDF		105	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		93.7	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		89.5	(40%-135%)
12017219	MB for batch 33166	13C-2,3,7,8-TCDD		106	(40%-135%)
		13C-1,2,3,7,8-PeCDD		108	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		101	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		106	(40%-135%)
		13C-OCDD		61.9	(40%-135%)
		13C-2,3,7,8-TCDF		109	(40%-135%)
		13C-1,2,3,7,8-PeCDF		122	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		103	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		94.6	(40%-135%)
9944001	B18-D-CB1	13C-2,3,7,8-TCDD		94.4	(40%-135%)
		13C-1,2,3,7,8-PeCDD		101	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		91.5	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		96.5	(40%-135%)
		13C-OCDD		56.6	(40%-135%)
		13C-2,3,7,8-TCDF		96.8	(40%-135%)
		13C-1,2,3,7,8-PeCDF		109	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		91.9	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		86.6	(40%-135%)
9944002	B18-D-CB2	13C-2,3,7,8-TCDD		82.5	(40%-135%)
		13C-1,2,3,7,8-PeCDD		97.6	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		80.0	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		85.3	(40%-135%)
		13C-OCDD		51.1	(40%-135%)
		13C-2,3,7,8-TCDF		85.8	(40%-135%)
		13C-1,2,3,7,8-PeCDF		109	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		80.8	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		75.7	(40%-135%)
9944003	B18-D-CB3	13C-2,3,7,8-TCDD		109	(40%-135%)
		13C-1,2,3,7,8-PeCDD		119	(40%-135%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9944003	B18-D-CB3	13C-1,2,3,6,7,8-HxCDD		99.5	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		102	(40%-135%)
		13C-OCDD		62.8	(40%-135%)
		13C-2,3,7,8-TCDF		105	(40%-135%)
		13C-1,2,3,7,8-PeCDF		119	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		98.4	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		89.4	(40%-135%)
9944004	B18-F-1	13C-2,3,7,8-TCDD		103	(40%-135%)
		13C-1,2,3,7,8-PeCDD		117	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		94.3	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		101	(40%-135%)
		13C-OCDD		57.2	(40%-135%)
		13C-2,3,7,8-TCDF		102	(40%-135%)
		13C-1,2,3,7,8-PeCDF		126	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		96.2	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		89.9	(40%-135%)
9944005	B18-F-2	13C-2,3,7,8-TCDD		91.2	(40%-135%)
		13C-1,2,3,7,8-PeCDD		103	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		87.6	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		94.3	(40%-135%)
		13C-OCDD		60.2	(40%-135%)
		13C-2,3,7,8-TCDF		94.5	(40%-135%)
		13C-1,2,3,7,8-PeCDF		111	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		86.7	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		84.5	(40%-135%)
9944006	B18-F-3	13C-2,3,7,8-TCDD		98.6	(40%-135%)
		13C-1,2,3,7,8-PeCDD		107	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		90.6	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		100	(40%-135%)
		13C-OCDD		60.9	(40%-135%)
		13C-2,3,7,8-TCDF		98.8	(40%-135%)
		13C-1,2,3,7,8-PeCDF		119	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		89.0	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		89.8	(40%-135%)
9944007	B18-F-4	13C-2,3,7,8-TCDD		109	(40%-135%)
		13C-1,2,3,7,8-PeCDD		118	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		102	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		106	(40%-135%)
		13C-OCDD		66.3	(40%-135%)
		13C-2,3,7,8-TCDF		111	(40%-135%)
		13C-1,2,3,7,8-PeCDF		133	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		101	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		97.2	(40%-135%)
9944008	B18-F-5	13C-2,3,7,8-TCDD		97.3	(40%-135%)
		13C-1,2,3,7,8-PeCDD		102	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		89.9	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		96.0	(40%-135%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9944008	B18-F-5	13C-OCDD		58.0	(40%-135%)
		13C-2,3,7,8-TCDF		97.8	(40%-135%)
		13C-1,2,3,7,8-PeCDF		110	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		88.8	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		86.7	(40%-135%)
9944009	B18-F-6	13C-2,3,7,8-TCDD		98.2	(40%-135%)
		13C-1,2,3,7,8-PeCDD		105	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		89.6	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		97.1	(40%-135%)
		13C-OCDD		62.0	(40%-135%)
		13C-2,3,7,8-TCDF		97.6	(40%-135%)
		13C-1,2,3,7,8-PeCDF		111	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		90.8	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		87.9	(40%-135%)
9944010	B18-F-7	13C-2,3,7,8-TCDD		99.1	(40%-135%)
		13C-1,2,3,7,8-PeCDD		103	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		92.0	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		98.3	(40%-135%)
		13C-OCDD		61.0	(40%-135%)
		13C-2,3,7,8-TCDF		98.5	(40%-135%)
		13C-1,2,3,7,8-PeCDF		103	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		91.7	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		86.6	(40%-135%)
9944011	B18-F-R1	13C-2,3,7,8-TCDD		87.7	(40%-135%)
		13C-1,2,3,7,8-PeCDD		98.5	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		86.6	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		93.7	(40%-135%)
		13C-OCDD		60.1	(40%-135%)
		13C-2,3,7,8-TCDF		89.4	(40%-135%)
		13C-1,2,3,7,8-PeCDF		102	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		84.9	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		83.9	(40%-135%)
9944012	B18-F-R2	13C-2,3,7,8-TCDD		90.8	(40%-135%)
		13C-1,2,3,7,8-PeCDD		98.0	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		85.9	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		93.0	(40%-135%)
		13C-OCDD		55.6	(40%-135%)
		13C-2,3,7,8-TCDF		92.8	(40%-135%)
		13C-1,2,3,7,8-PeCDF		100	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		84.6	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		80.1	(40%-135%)
9944013	B18-F-R3	13C-2,3,7,8-TCDD		93.0	(40%-135%)
		13C-1,2,3,7,8-PeCDD		101	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		89.2	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		92.4	(40%-135%)
		13C-OCDD		56.5	(40%-135%)
		13C-2,3,7,8-TCDF		91.9	(40%-135%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9944013	B18-F-R3	13C-1,2,3,7,8-PeCDF		101	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		87.3	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		82.4	(40%-135%)
9944014	B18-OF	13C-2,3,7,8-TCDD		90.7	(40%-135%)
		13C-1,2,3,7,8-PeCDD		96.4	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		87.8	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		89.8	(40%-135%)
		13C-OCDD		51.9	(40%-135%)
		13C-2,3,7,8-TCDF		90.0	(40%-135%)
		13C-1,2,3,7,8-PeCDF		95.9	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		86.4	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		81.6	(40%-135%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: A6J0588 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 33166 **Matrix:** WATER

Lab Sample ID: 12017220

Instrument: HRP750 **Analysis Date:** 11/04/2016 00:21 **Dilution:** 1

Analyst: JTF **Prep Batch ID:** 33166

Batch ID: 33168

CAS No.		Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	200	191	95.6	70-130
40321-76-4	LCS	1,2,3,7,8-PeCDD	1000	992	99.2	70-130
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	1000	1000	100	70-130
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	1000	982	98.2	70-130
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	1000	1000	100	70-130
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	1000	978	97.8	70-130
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	2000	2000	100	70-130
51207-31-9	LCS	2,3,7,8-TCDF	200	189	94.4	70-130
57117-41-6	LCS	1,2,3,7,8-PeCDF	1000	997	99.7	70-130
57117-31-4	LCS	2,3,4,7,8-PeCDF	1000	861	86.1	70-130
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	1000	978	97.8	70-130
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	1000	1040	104	70-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	1000	977	97.7	70-130
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	1000	993	99.3	70-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	1000	1020	102	70-130
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	1000	1060	106	70-130
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	2000	2380	119	70-130

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: A6J0588 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 33166 **Matrix:** WATER

Lab Sample ID: 12017221

Instrument: HRP750 **Analysis Date:** 11/04/2016 01:07 **Dilution:** 1

Analyst: JTF **Prep Batch ID:** 33166

Batch ID: 33168

CAS No.		Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	200	193	96.3	70-130	0.802	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	1000	968	96.8	70-130	2.50	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	1000	999	99.9	70-130	0.268	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	1000	965	96.5	70-130	1.83	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	1000	1010	101	70-130	0.999	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	1000	951	95.1	70-130	2.78	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	2000	1940	97	70-130	3.29	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	200	189	94.3	70-130	0.0848	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	1000	1030	103	70-130	3.24	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	1000	856	85.6	70-130	0.548	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	1000	969	96.9	70-130	0.919	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	1000	990	99	70-130	4.81	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	1000	993	99.3	70-130	1.66	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	1000	1000	100	70-130	0.895	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	1000	1010	101	70-130	1.72	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	1000	1020	102	70-130	3.35	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	2000	2210	111	70-130	7.37	0-20

Method Blank Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 33166**	**Instrument ID:**	**HRP750**	**Data File:**	**A03NOV16C_2-3**
Lab Sample ID:	**12017219**	**Prep Date:**	**01-NOV-16**	**Analyzed:**	**11/04/16 01:54**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 33166	12017220	A03NOV16C_2-1	11/04/16	0021
02	LCSD for batch 33166	12017221	A03NOV16C_2-2	11/04/16	0107
03	B18-D-CB1	9944001	A03NOV16C_2-7	11/04/16	0501
04	B18-D-CB2	9944002	A03NOV16C_2-8	11/04/16	0548
05	B18-D-CB3	9944003	A03NOV16C_2-9	11/04/16	0635
06	B18-F-1	9944004	A03NOV16C_2-10	11/04/16	0722
07	B18-F-2	9944005	A03NOV16C_2-11	11/04/16	0809
08	B18-F-3	9944006	A03NOV16C_2-12	11/04/16	0856
09	B18-F-4	9944007	A03NOV16C_2-13	11/04/16	0943
10	B18-F-5	9944008	A03NOV16C_3-2	11/04/16	1211
11	B18-F-6	9944009	A03NOV16C_3-3	11/04/16	1258
12	B18-F-7	9944010	A03NOV16C_3-4	11/04/16	1346
13	B18-F-R1	9944011	A03NOV16C_3-5	11/04/16	1432
14	B18-F-R2	9944012	A03NOV16C_3-6	11/04/16	1519
15	B18-F-R3	9944013	A03NOV16C_3-7	11/04/16	1606
16	B18-OF	9944014	A03NOV16C_3-8	11/04/16	1653

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017219**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33166**				
Client ID:	**MB for batch 33166**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 01:54**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_2-3**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.446		pg/L	0.446	10.0
40321-76-4	1,2,3,7,8-PeCDD	J	1.00		pg/L	0.552	50.0
39227-28-6	1,2,3,4,7,8-HxCDD	U	.9		pg/L	0.900	50.0
57653-85-7	1,2,3,6,7,8-HxCDD	J	1.00		pg/L	0.838	50.0
19408-74-3	1,2,3,7,8,9-HxCDD	JK		1.24	pg/L	0.886	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	1.40		pg/L	0.848	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	5.26		pg/L	1.43	100
51207-31-9	2,3,7,8-TCDF	U	.558		pg/L	0.558	10.0
57117-41-6	1,2,3,7,8-PeCDF	JK		1.28	pg/L	0.338	50.0
57117-31-4	2,3,4,7,8-PeCDF	J	0.660		pg/L	0.310	50.0
70648-26-9	1,2,3,4,7,8-HxCDF	J	1.12		pg/L	0.378	50.0
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.14		pg/L	0.358	50.0
60851-34-5	2,3,4,6,7,8-HxCDF	J	1.30		pg/L	0.378	50.0
72918-21-9	1,2,3,7,8,9-HxCDF	J	1.48		pg/L	0.446	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	1.28		pg/L	0.548	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	1.46		pg/L	0.698	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	4.24		pg/L	2.62	100
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.446		pg/L	0.446	10.0
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	1.00		pg/L	0.552	50.0
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	1.00	2.24	pg/L	0.838	50.0
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	1.40		pg/L	0.848	50.0
30402-14-3	Total Tetrachlorodibenzofuran	U	.558		pg/L	0.558	10.0
30402-15-4	Total Pentachlorodibenzofuran	J	0.660	1.94	pg/L	0.250	50.0
55684-94-1	Total Hexachlorodibenzofuran	J	5.04		pg/L	0.358	50.0
38998-75-3	Total Heptachlorodibenzofuran	J	2.74		pg/L	0.548	50.0
3333-30-0	TEQ WHO2005 ND=0		1.85	2.01	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		2.19	2.30	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		2110	2000	pg/L	106	(40%-135%)
13C-1,2,3,7,8-PeCDD		2160	2000	pg/L	108	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		2020	2000	pg/L	101	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		2120	2000	pg/L	106	(40%-135%)
13C-OCDD		2470	4000	pg/L	61.9	(40%-135%)
13C-2,3,7,8-TCDF		2180	2000	pg/L	109	(40%-135%)
13C-1,2,3,7,8-PeCDF		2440	2000	pg/L	122	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		2060	2000	pg/L	103	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1890	2000	pg/L	94.6	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017220**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33166**				
Client ID:	**LCS for batch 33166**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 00:21**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_2-1**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		191		pg/L	0.720	10.0
40321-76-4	1,2,3,7,8-PeCDD		992		pg/L	1.67	50.0
39227-28-6	1,2,3,4,7,8-HxCDD		1000		pg/L	2.48	50.0
57653-85-7	1,2,3,6,7,8-HxCDD		982		pg/L	2.30	50.0
19408-74-3	1,2,3,7,8,9-HxCDD		1000		pg/L	2.44	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD		978		pg/L	3.32	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2000		pg/L	9.36	100
51207-31-9	2,3,7,8-TCDF		189		pg/L	1.03	10.0
57117-41-6	1,2,3,7,8-PeCDF		997		pg/L	1.52	50.0
57117-31-4	2,3,4,7,8-PeCDF		861		pg/L	1.39	50.0
70648-26-9	1,2,3,4,7,8-HxCDF		978		pg/L	3.20	50.0
57117-44-9	1,2,3,6,7,8-HxCDF		1040		pg/L	3.02	50.0
60851-34-5	2,3,4,6,7,8-HxCDF		977		pg/L	3.18	50.0
72918-21-9	1,2,3,7,8,9-HxCDF		993		pg/L	3.76	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF		1020		pg/L	3.42	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF		1060		pg/L	4.34	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF		2380		pg/L	9.24	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1800	2000	pg/L	90.2	(40%-135%)
13C-1,2,3,7,8-PeCDD		1850	2000	pg/L	92.4	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1790	2000	pg/L	89.3	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1780	2000	pg/L	88.9	(40%-135%)
13C-OCDD		1990	4000	pg/L	49.7	(40%-135%)
13C-2,3,7,8-TCDF		1860	2000	pg/L	92.8	(40%-135%)
13C-1,2,3,7,8-PeCDF		1920	2000	pg/L	95.9	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1790	2000	pg/L	89.7	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1620	2000	pg/L	81.1	(40%-135%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017221**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33166**				
Client ID:	**LCSD for batch 33166**			**Prep Basis:**	**As Received**
Batch ID:	**33168**	**Method:**	**SW846 8290A**		
Run Date:	**11/04/2016 01:07**	**Analyst:**	**JTF**	**Instrument:**	**HRP750**
Data File:	**A03NOV16C_2-2**			**Dilution:**	**1**
Prep Batch:	**33166**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**01-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		193		pg/L	0.806	10.0
40321-76-4	1,2,3,7,8-PeCDD		968		pg/L	1.12	50.0
39227-28-6	1,2,3,4,7,8-HxCDD		999		pg/L	2.54	50.0
57653-85-7	1,2,3,6,7,8-HxCDD		965		pg/L	2.38	50.0
19408-74-3	1,2,3,7,8,9-HxCDD		1010		pg/L	2.50	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD		951		pg/L	2.98	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1940		pg/L	5.72	100
51207-31-9	2,3,7,8-TCDF		189		pg/L	0.794	10.0
57117-41-6	1,2,3,7,8-PeCDF		1030		pg/L	1.84	50.0
57117-31-4	2,3,4,7,8-PeCDF		856		pg/L	1.68	50.0
70648-26-9	1,2,3,4,7,8-HxCDF		969		pg/L	3.04	50.0
57117-44-9	1,2,3,6,7,8-HxCDF		990		pg/L	2.86	50.0
60851-34-5	2,3,4,6,7,8-HxCDF		993		pg/L	3.04	50.0
72918-21-9	1,2,3,7,8,9-HxCDF		1000		pg/L	3.58	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF		1010		pg/L	3.10	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF		1020		pg/L	3.94	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF		2210		pg/L	5.86	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1940	2000	pg/L	97.2	(40%-135%)
13C-1,2,3,7,8-PeCDD		2000	2000	pg/L	100	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1870	2000	pg/L	93.5	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1950	2000	pg/L	97.6	(40%-135%)
13C-OCDD		2300	4000	pg/L	57.6	(40%-135%)
13C-2,3,7,8-TCDF		2000	2000	pg/L	100	(40%-135%)
13C-1,2,3,7,8-PeCDF		2090	2000	pg/L	105	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1870	2000	pg/L	93.7	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1790	2000	pg/L	89.5	(40%-135%)

Comments:

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners Analysis

Case Narrative

PCBC Case Narrative
Apex Laboratories (APEX)
SDG A6J0588
Work Order 9944

Revision Information

Homolog totals have been added to this report.

Method/Analysis Information

Product:	**PCB Congeners by EPA Method 1668A in Liquids**
Analytical Method:	EPA Method 1668A
Extraction Method:	SW846 3520C
Analytical Batch Number:	33134, 33183
Clean Up Batch Number:	33132, 33182
Extraction Batch Number:	33131, 33181

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

Sample ID	Client ID
9944001	B18-D-CB1
9944002	B18-D-CB2
9944003	B18-D-CB3
9944004	B18-F-1
9944005	B18-F-2
9944006	B18-F-3
9944007	B18-F-4
9944008	B18-F-5
9944009	B18-F-6
9944010	B18-F-7
9944011	B18-F-R1
9944012	B18-F-R2
9944013	B18-F-R3
9944014	B18-OF
12017181	Method Blank (MB)
12017182	Laboratory Control Sample (LCS)
12017183	Laboratory Control Sample Duplicate (LCSD)
12017234	Method Blank (MB)
12017235	Laboratory Control Sample (LCS)
12017236	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference
Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
One surrogate recovered outside the acceptance limits. 9944006 (B18-F-3)- Batch 33134.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and

time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
Sample 9944003 (B18-D-CB3)- Batch 33134 was diluted due to the presence of non-target interferences.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration
This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP791_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um
HRP875_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

APEX001 Apex Laboratories

Client SDG: A6J0588 CFA Work Order: 9944

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

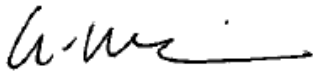
U Analyte was analyzed for, but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature:  **Name: Mike Larkins**

Date: 06 DEC 2016 **Title: Technical Director**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944001**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 05:27**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1042.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	3.66	pg/L	0.863	19.2
2051-61-8	2-MoCB	J	1.78	pg/L	0.710	19.2
2051-62-9	3-MoCB	J	3.36	pg/L	0.882	19.2
13029-08-8	4-DiCB	J	6.18	pg/L	2.11	19.2
16605-91-7	5-DiCB	U	1.52	pg/L	1.52	19.2
25569-80-6	6-DiCB	J	2.51	pg/L	1.17	19.2
33284-50-3	7-DiCB	J	1.34	pg/L	1.32	19.2
34883-43-7	8-DiCB	J	9.32	pg/L	1.11	19.2
34883-39-1	9-DiCB	J	1.55	pg/L	1.34	19.2
33146-45-1	10-DiCB	U	1.23	pg/L	1.23	19.2
2050-67-1	11-DiCB	J	42.8	pg/L	1.30	95.9
2974-92-7	12-DiCB	CJ	2.72	pg/L	1.34	38.4
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	1.25	pg/L	1.25	19.2
2050-68-2	15-DiCB	J	7.17	pg/L	1.69	19.2
38444-78-9	16-TrCB	J	4.76	pg/L	1.61	19.2
37680-66-3	17-TrCB	J	4.95	pg/L	1.32	19.2
37680-65-2	18-TrCB	CJ	9.42	pg/L	1.07	38.4
38444-73-4	19-TrCB	J	2.03	pg/L	1.48	19.2
38444-84-7	20-TrCB	CJ	16.1	pg/L	0.901	38.4
55702-46-0	21-TrCB	CJ	9.99	pg/L	0.901	38.4
38444-85-8	22-TrCB	J	6.89	pg/L	0.940	19.2
55720-44-0	23-TrCB	U	.959	pg/L	0.959	19.2
55702-45-9	24-TrCB	U	1.02	pg/L	1.02	19.2
55712-37-3	25-TrCB	J	1.44	pg/L	0.863	19.2
38444-81-4	26-TrCB	CJ	2.95	pg/L	0.825	38.4
38444-76-7	27-TrCB	U	1.15	pg/L	1.15	19.2
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	J	12.1	pg/L	0.806	19.2
38444-77-8	32-TrCB	J	2.82	pg/L	0.825	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944001**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 05:27**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1042.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	.882	pg/L	0.882	19.2
37680-69-6	35-TrCB	U	1.3	pg/L	1.30	19.2
38444-87-0	36-TrCB	U	1.25	pg/L	1.25	19.2
38444-90-5	37-TrCB	J	6.98	pg/L	1.65	19.2
53555-66-1	38-TrCB	U	1.17	pg/L	1.17	19.2
38444-88-1	39-TrCB	U	1.25	pg/L	1.25	19.2
38444-93-8	40-TeCB	CJ	6.44	pg/L	1.88	38.4
52663-59-9	41-TeCB	U	1.9	pg/L	1.90	19.2
36559-22-5	42-TeCB	J	3.66	pg/L	2.21	19.2
70362-46-8	43-TeCB	U	2.76	pg/L	2.76	19.2
41464-39-5	44-TeCB	CJ	14.4	pg/L	1.84	57.5
70362-45-7	45-TeCB	CJ	2.95	pg/L	0.959	38.4
41464-47-5	46-TeCB	U	.978	pg/L	0.978	19.2
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	2.95	pg/L	1.94	19.2
41464-40-8	49-TeCB	CJ	6.92	pg/L	1.71	38.4
62796-65-0	50-TeCB	CJ	1.40	pg/L	0.882	38.4
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	13.3	pg/L	1.75	19.2
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	.71	pg/L	0.710	19.2
74338-24-2	55-TeCB	U	1.15	pg/L	1.15	19.2
41464-43-1	56-TeCB	J	5.66	pg/L	1.17	19.2
70424-67-8	57-TeCB	U	1.02	pg/L	1.02	19.2
41464-49-7	58-TeCB	U	1.05	pg/L	1.05	19.2
74472-33-6	59-TeCB	CJ	2.07	pg/L	1.42	57.5
33025-41-1	60-TeCB	J	2.92	pg/L	1.11	19.2
33284-53-6	61-TeCB	CJ	18.6	pg/L	1.07	76.7
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	.959	pg/L	0.959	19.2
52663-58-8	64-TeCB	J	5.77	pg/L	1.52	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944001**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 05:27**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1042.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	7.81	pg/L	0.940	19.2
73575-53-8	67-TeCB	U	.921	pg/L	0.921	19.2
73575-52-7	68-TeCB	U	1.02	pg/L	1.02	19.2
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	.959	pg/L	0.959	19.2
74338-23-1	73-TeCB	U	1.46	pg/L	1.46	19.2
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	2.61	pg/L	1.29	19.2
70362-49-1	78-TeCB	U	1.02	pg/L	1.02	19.2
41464-48-6	79-TeCB	U	.882	pg/L	0.882	19.2
33284-52-5	80-TeCB	U	.882	pg/L	0.882	19.2
70362-50-4	81-TeCB	U	1.21	pg/L	1.21	19.2
52663-62-4	82-PeCB	U	1.98	pg/L	1.98	19.2
60145-20-2	83-PeCB	U	1.92	pg/L	1.92	19.2
52663-60-2	84-PeCB	J	3.18	pg/L	1.98	19.2
65510-45-4	85-PeCB	CJ	2.44	pg/L	1.46	57.5
55312-69-1	86-PeCB	CJ	10.8	pg/L	1.61	115
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	1.88	pg/L	1.88	38.4
73575-57-2	89-PeCB	U	1.86	pg/L	1.86	19.2
68194-07-0	90-PeCB	CJ	12.2	pg/L	1.57	57.5
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	1.78	pg/L	1.78	19.2
73575-56-1	93-PeCB	CU	1.84	pg/L	1.84	38.4
73575-55-0	94-PeCB	U	2.09	pg/L	2.09	19.2
38379-99-6	95-PeCB	J	8.80	pg/L	1.75	19.2
73575-54-9	96-PeCB	U	.46	pg/L	0.460	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944001**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 05:27**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1042.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	2.11	pg/L	2.11	38.4
38380-01-7	99-PeCB	J	4.68	pg/L	1.61	19.2
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	1.65	pg/L	1.65	19.2
56558-16-8	104-PeCB	U	.518	pg/L	0.518	19.2
32598-14-4	105-PeCB	J	8.09	pg/L	1.38	19.2
70424-69-0	106-PeCB	U	1.13	pg/L	1.13	19.2
70424-68-9	107-PeCB	U	.901	pg/L	0.901	19.2
70362-41-3	108-PeCB	CU	1.11	pg/L	1.11	38.4
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	19.0	pg/L	1.55	38.4
39635-32-0	111-PeCB	U	1.4	pg/L	1.40	19.2
74472-36-9	112-PeCB	U	1.44	pg/L	1.44	19.2
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	1.38	pg/L	1.38	19.2
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	J	18.5	pg/L	1.25	19.2
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	1.25	pg/L	1.25	19.2
56558-18-0	121-PeCB	U	1.46	pg/L	1.46	19.2
76842-07-4	122-PeCB	U	1.11	pg/L	1.11	19.2
65510-44-3	123-PeCB	U	1.29	pg/L	1.29	19.2
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	1.67	pg/L	1.67	19.2
39635-33-1	127-PeCB	U	1.11	pg/L	1.11	19.2
38380-07-3	128-HxCB	CJ	2.76	pg/L	1.67	38.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944001**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 05:27**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1042.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	25.6	pg/L	1.71	57.5
52663-66-8	130-HxCB	U	1.92	pg/L	1.92	19.2
61798-70-7	131-HxCB	U	2.17	pg/L	2.17	19.2
38380-05-1	132-HxCB	U	7.25	pg/L	7.25	19.2
35694-04-3	133-HxCB	U	1.76	pg/L	1.76	19.2
52704-70-8	134-HxCB	U	2.3	pg/L	2.30	19.2
52744-13-5	135-HxCB	CJ	7.63	pg/L	1.04	38.4
38411-22-2	136-HxCB	J	2.17	pg/L	0.748	19.2
35694-06-5	137-HxCB	U	1.75	pg/L	1.75	19.2
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	1.67	pg/L	1.67	38.4
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	5.35	pg/L	1.80	19.2
41411-61-4	142-HxCB	U	1.99	pg/L	1.99	19.2
68194-15-0	143-HxCB	U	1.86	pg/L	1.86	19.2
68194-14-9	144-HxCB	U	1.09	pg/L	1.09	19.2
74472-40-5	145-HxCB	U	.844	pg/L	0.844	19.2
51908-16-8	146-HxCB	U	2.59	pg/L	2.59	19.2
68194-13-8	147-HxCB	CJ	16.1	pg/L	1.75	38.4
74472-41-6	148-HxCB	U	.978	pg/L	0.978	19.2
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.825	pg/L	0.825	19.2
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.748	pg/L	0.748	19.2
35065-27-1	153-HxCB	CJ	27.5	pg/L	1.38	38.4
60145-22-4	154-HxCB	U	.844	pg/L	0.844	19.2
33979-03-2	155-HxCB	U	.806	pg/L	0.806	19.2
38380-08-4	156-HxCB	CJ	3.41	pg/L	1.38	38.4
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	2.55	pg/L	1.27	19.2
39635-35-3	159-HxCB	U	.882	pg/L	0.882	19.2
41411-62-5	160-HxCB	U	1.65	pg/L	1.65	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944001**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 05:27**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1042.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.38	pg/L	1.38	19.2
39635-34-2	162-HxCB	U	.94	pg/L	0.940	19.2
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	1.46	pg/L	1.42	19.2
74472-46-1	165-HxCB	U	1.5	pg/L	1.50	19.2
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	1.25	pg/L	0.997	19.2
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.21	pg/L	1.21	19.2
35065-30-6	170-HpCB	J	15.9	pg/L	1.78	19.2
52663-71-5	171-HpCB	CJ	4.37	pg/L	1.65	38.4
52663-74-8	172-HpCB	J	3.07	pg/L	1.69	19.2
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		22.5	pg/L	1.55	19.2
40186-70-7	175-HpCB	U	.556	pg/L	0.556	19.2
52663-65-7	176-HpCB	J	1.94	pg/L	0.422	19.2
52663-70-4	177-HpCB	J	9.86	pg/L	1.63	19.2
52663-67-9	178-HpCB	J	4.24	pg/L	0.595	19.2
52663-64-6	179-HpCB	J	6.14	pg/L	0.403	19.2
35065-29-3	180-HpCB	C	73.4	pg/L	1.44	38.4
74472-47-2	181-HpCB	U	1.67	pg/L	1.67	19.2
60145-23-5	182-HpCB	U	.556	pg/L	0.556	19.2
52663-69-1	183-HpCB	CJ	16.9	pg/L	1.52	38.4
74472-48-3	184-HpCB	U	.441	pg/L	0.441	19.2
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.479	pg/L	0.479	19.2
52663-68-0	187-HpCB		34.6	pg/L	0.556	19.2
74487-85-7	188-HpCB	U	.499	pg/L	0.499	19.2
39635-31-9	189-HpCB	U	.997	pg/L	0.997	19.2
41411-64-7	190-HpCB	J	5.45	pg/L	1.40	19.2
74472-50-7	191-HpCB	U	1.29	pg/L	1.29	19.2
74472-51-8	192-HpCB	U	1.5	pg/L	1.50	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944001**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 05:27**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1042.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		49.4	pg/L	1.21	19.2
52663-78-2	195-OcCB	J	13.3	pg/L	1.27	19.2
42740-50-1	196-OcCB		23.7	pg/L	1.88	19.2
33091-17-7	197-OcCB	CJ	7.08	pg/L	1.40	38.4
68194-17-2	198-OcCB	C	56.1	pg/L	1.99	38.4
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	J	4.97	pg/L	1.32	19.2
2136-99-4	202-OcCB	J	8.00	pg/L	1.63	19.2
52663-76-0	203-OcCB		42.1	pg/L	2.01	19.2
74472-52-9	204-OcCB	U	1.34	pg/L	1.34	19.2
74472-53-0	205-OcCB	J	3.01	pg/L	1.11	19.2
40186-72-9	206-NoCB		46.2	pg/L	1.38	19.2
52663-79-3	207-NoCB	J	4.72	pg/L	0.844	19.2
52663-77-1	208-NoCB	J	8.17	pg/L	0.940	19.2
2051-24-3	209-DeCB	J	4.83	pg/L	0.921	19.2
27323-18-8	Total Mono PCBs	J	8.80	pg/L	6.39	19.2
25512-42-9	Total Di PCBs		73.6	pg/L	6.39	19.2
25323-68-6	Total Tri PCBs		80.5	pg/L	6.39	19.2
26914-33-0	Total Tetra PCBs		97.5	pg/L	6.39	19.2
25429-29-2	Total Penta PCBs		87.6	pg/L	6.39	19.2
26601-64-9	Total Hexa PCBs		95.8	pg/L	6.39	19.2
28655-71-2	Total Hepta PCBs		198	pg/L	6.39	19.2
55722-26-4	Total Octa PCBs		208	pg/L	6.39	19.2
53742-07-7	Total Nona PCBs		59.1	pg/L	6.39	19.2
2051-24-3	Total Deca PCB	J	4.83	pg/L	6.39	19.2
1336-36-3	Total PCB Congeners		914	pg/L	6.39	19.2

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1010	1920	pg/L	52.5	(15%-150%)
13C-3-MoCB		1040	1920	pg/L	54.0	(15%-150%)
13C-4-DiCB		1050	1920	pg/L	54.7	(25%-150%)
13C-15-DiCB		2160	1920	pg/L	113	(25%-150%)
13C-19-TrCB		1440	1920	pg/L	75.2	(25%-150%)
13C-37-TrCB		1880	1920	pg/L	98.0	(25%-150%)
13C-54-TeCB		1240	1920	pg/L	64.5	(25%-150%)
13C-77-TeCB		2360	1920	pg/L	123	(25%-150%)
13C-81-TeCB		2380	1920	pg/L	124	(25%-150%)
13C-104-PeCB		1440	1920	pg/L	75.3	(25%-150%)
13C-105-PeCB		1970	1920	pg/L	103	(25%-150%)
13C-114-PeCB		1930	1920	pg/L	100	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944001**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 05:27**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1042.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1920	1920	pg/L	100	(25%-150%)
13C-123-PeCB		2050	1920	pg/L	107	(25%-150%)
13C-126-PeCB		1900	1920	pg/L	98.9	(25%-150%)
13C-155-HxCB		1530	1920	pg/L	79.8	(25%-150%)
13C-156-HxCB	C	3780	3840	pg/L	98.5	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1950	1920	pg/L	101	(25%-150%)
13C-169-HxCB		1910	1920	pg/L	99.4	(25%-150%)
13C-188-HpCB		1390	1920	pg/L	72.6	(25%-150%)
13C-189-HpCB		1770	1920	pg/L	92.1	(25%-150%)
13C-202-OcCB		1560	1920	pg/L	81.3	(25%-150%)
13C-205-OcCB		1900	1920	pg/L	98.8	(25%-150%)
13C-206-NoCB		1660	1920	pg/L	86.6	(25%-150%)
13C-208-NoCB		1620	1920	pg/L	84.3	(25%-150%)
13C-209-DeCB		1950	1920	pg/L	102	(25%-150%)
13C-28-TrCB		1180	1920	pg/L	61.7	(30%-135%)
13C-111-PeCB		1600	1920	pg/L	83.2	(30%-135%)
13C-178-HpCB		1530	1920	pg/L	79.6	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944002**	**Date Collected:**	**10/13/2016 05:45**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 06:34**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1005.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	3.74	pg/L	0.974	19.9
2051-61-8	2-MoCB	J	1.97	pg/L	0.795	19.9
2051-62-9	3-MoCB	J	2.96	pg/L	0.974	19.9
13029-08-8	4-DiCB	J	8.95	pg/L	2.13	19.9
16605-91-7	5-DiCB	U	1.73	pg/L	1.73	19.9
25569-80-6	6-DiCB	J	3.70	pg/L	1.35	19.9
33284-50-3	7-DiCB	U	1.53	pg/L	1.53	19.9
34883-43-7	8-DiCB	J	13.8	pg/L	1.27	19.9
34883-39-1	9-DiCB	J	2.70	pg/L	1.53	19.9
33146-45-1	10-DiCB	U	1.31	pg/L	1.31	19.9
2050-67-1	11-DiCB	J	48.6	pg/L	1.51	99.4
2974-92-7	12-DiCB	CJ	4.77	pg/L	1.55	39.8
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	1.43	pg/L	1.43	19.9
2050-68-2	15-DiCB	J	13.5	pg/L	1.99	19.9
38444-78-9	16-TrCB	J	8.43	pg/L	1.79	19.9
37680-66-3	17-TrCB	J	6.42	pg/L	1.47	19.9
37680-65-2	18-TrCB	CJ	14.2	pg/L	1.19	39.8
38444-73-4	19-TrCB	J	2.49	pg/L	1.67	19.9
38444-84-7	20-TrCB	CJ	25.4	pg/L	0.994	39.8
55702-46-0	21-TrCB	CJ	16.0	pg/L	0.994	39.8
38444-85-8	22-TrCB	J	11.4	pg/L	1.03	19.9
55720-44-0	23-TrCB	U	1.07	pg/L	1.07	19.9
55702-45-9	24-TrCB	U	1.13	pg/L	1.13	19.9
55712-37-3	25-TrCB	J	2.03	pg/L	0.954	19.9
38444-81-4	26-TrCB	CJ	4.20	pg/L	0.915	39.8
38444-76-7	27-TrCB	J	1.61	pg/L	1.01	19.9
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		20.4	pg/L	0.895	19.9
38444-77-8	32-TrCB	J	3.90	pg/L	0.915	19.9

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944002**	**Date Collected:**	**10/13/2016 05:45**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 06:34**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1005.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	.994	pg/L	0.994	19.9
37680-69-6	35-TrCB	J	2.59	pg/L	1.69	19.9
38444-87-0	36-TrCB	U	1.59	pg/L	1.59	19.9
38444-90-5	37-TrCB	J	13.7	pg/L	2.11	19.9
53555-66-1	38-TrCB	U	1.51	pg/L	1.51	19.9
38444-88-1	39-TrCB	U	1.61	pg/L	1.61	19.9
38444-93-8	40-TeCB	CJ	10.5	pg/L	1.41	39.8
52663-59-9	41-TeCB	J	2.78	pg/L	1.41	19.9
36559-22-5	42-TeCB	J	5.67	pg/L	1.65	19.9
70362-46-8	43-TeCB	U	2.07	pg/L	2.07	19.9
41464-39-5	44-TeCB	CJ	20.9	pg/L	1.37	59.7
70362-45-7	45-TeCB	CJ	4.49	pg/L	1.07	39.8
41464-47-5	46-TeCB	J	1.83	pg/L	1.09	19.9
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	4.10	pg/L	1.45	19.9
41464-40-8	49-TeCB	CJ	10.7	pg/L	1.27	39.8
62796-65-0	50-TeCB	CJ	2.76	pg/L	0.994	39.8
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	18.9	pg/L	1.29	19.9
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	.795	pg/L	0.795	19.9
74338-24-2	55-TeCB	U	1.45	pg/L	1.45	19.9
41464-43-1	56-TeCB	J	8.53	pg/L	1.49	19.9
70424-67-8	57-TeCB	U	1.29	pg/L	1.29	19.9
41464-49-7	58-TeCB	U	1.35	pg/L	1.35	19.9
74472-33-6	59-TeCB	CJ	2.49	pg/L	1.05	59.7
33025-41-1	60-TeCB	J	4.71	pg/L	1.41	19.9
33284-53-6	61-TeCB	CJ	28.3	pg/L	1.35	79.5
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	1.21	pg/L	1.21	19.9
52663-58-8	64-TeCB	J	9.72	pg/L	1.13	19.9

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944002**	**Date Collected:**	**10/13/2016 05:45**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 06:34**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1005.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	12.0	pg/L	1.21	19.9
73575-53-8	67-TeCB	U	1.17	pg/L	1.17	19.9
73575-52-7	68-TeCB	U	1.29	pg/L	1.29	19.9
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.23	pg/L	1.23	19.9
74338-23-1	73-TeCB	U	1.09	pg/L	1.09	19.9
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	2.45	pg/L	1.65	19.9
70362-49-1	78-TeCB	U	1.29	pg/L	1.29	19.9
41464-48-6	79-TeCB	U	1.11	pg/L	1.11	19.9
33284-52-5	80-TeCB	U	1.11	pg/L	1.11	19.9
70362-50-4	81-TeCB	U	1.53	pg/L	1.53	19.9
52663-62-4	82-PeCB	J	3.12	pg/L	2.35	19.9
60145-20-2	83-PeCB	U	2.27	pg/L	2.27	19.9
52663-60-2	84-PeCB	J	5.23	pg/L	2.35	19.9
65510-45-4	85-PeCB	CJ	3.30	pg/L	1.73	59.7
55312-69-1	86-PeCB	CJ	13.9	pg/L	1.91	119
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CJ	3.92	pg/L	2.23	39.8
73575-57-2	89-PeCB	U	2.21	pg/L	2.21	19.9
68194-07-0	90-PeCB	CJ	17.0	pg/L	1.87	59.7
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	3.08	pg/L	2.11	19.9
73575-56-1	93-PeCB	CU	2.19	pg/L	2.19	39.8
73575-55-0	94-PeCB	U	2.49	pg/L	2.49	19.9
38379-99-6	95-PeCB	J	14.6	pg/L	2.07	19.9
73575-54-9	96-PeCB	U	.577	pg/L	0.577	19.9

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944002**	**Date Collected:**	**10/13/2016 05:45**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 06:34**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1005.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	2.51	pg/L	2.51	39.8
38380-01-7	99-PeCB	J	6.38	pg/L	1.93	19.9
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	1.97	pg/L	1.97	19.9
56558-16-8	104-PeCB	U	.616	pg/L	0.616	19.9
32598-14-4	105-PeCB	J	10.2	pg/L	1.37	19.9
70424-69-0	106-PeCB	U	1.13	pg/L	1.13	19.9
70424-68-9	107-PeCB	J	1.01	pg/L	0.915	19.9
70362-41-3	108-PeCB	CU	1.19	pg/L	1.19	39.8
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	30.4	pg/L	1.85	39.8
39635-32-0	111-PeCB	U	1.67	pg/L	1.67	19.9
74472-36-9	112-PeCB	U	1.71	pg/L	1.71	19.9
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	1.39	pg/L	1.39	19.9
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	J	18.3	pg/L	1.27	19.9
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	1.49	pg/L	1.49	19.9
56558-18-0	121-PeCB	U	1.73	pg/L	1.73	19.9
76842-07-4	122-PeCB	U	1.11	pg/L	1.11	19.9
65510-44-3	123-PeCB	U	1.31	pg/L	1.31	19.9
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	1.69	pg/L	1.69	19.9
39635-33-1	127-PeCB	U	1.11	pg/L	1.11	19.9
38380-07-3	128-HxCB	CJ	5.47	pg/L	1.49	39.8

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944002**	**Date Collected:**	**10/13/2016 05:45**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 06:34**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1005.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	30.9	pg/L	1.53	59.7
52663-66-8	130-HxCB	J	1.99	pg/L	1.73	19.9
61798-70-7	131-HxCB	U	1.95	pg/L	1.95	19.9
38380-05-1	132-HxCB	J	9.98	pg/L	1.85	19.9
35694-04-3	133-HxCB	U	1.59	pg/L	1.59	19.9
52704-70-8	134-HxCB	U	2.07	pg/L	2.07	19.9
52744-13-5	135-HxCB	CJ	8.13	pg/L	1.03	39.8
38411-22-2	136-HxCB	J	3.20	pg/L	0.756	19.9
35694-06-5	137-HxCB	J	2.03	pg/L	1.57	19.9
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	1.51	pg/L	1.51	39.8
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	4.79	pg/L	1.63	19.9
41411-61-4	142-HxCB	U	1.79	pg/L	1.79	19.9
68194-15-0	143-HxCB	U	1.67	pg/L	1.67	19.9
68194-14-9	144-HxCB	J	1.33	pg/L	0.974	19.9
74472-40-5	145-HxCB	U	.855	pg/L	0.855	19.9
51908-16-8	146-HxCB	J	3.24	pg/L	1.25	19.9
68194-13-8	147-HxCB	CJ	18.8	pg/L	1.57	39.8
74472-41-6	148-HxCB	U	.974	pg/L	0.974	19.9
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.835	pg/L	0.835	19.9
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.756	pg/L	0.756	19.9
35065-27-1	153-HxCB	CJ	19.2	pg/L	1.25	39.8
60145-22-4	154-HxCB	U	.855	pg/L	0.855	19.9
33979-03-2	155-HxCB	U	.776	pg/L	0.776	19.9
38380-08-4	156-HxCB	CJ	4.79	pg/L	1.37	39.8
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	3.00	pg/L	1.13	19.9
39635-35-3	159-HxCB	U	.855	pg/L	0.855	19.9
41411-62-5	160-HxCB	U	1.47	pg/L	1.47	19.9

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944002**	**Date Collected:**	**10/13/2016 05:45**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 06:34**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1005.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.25	pg/L	1.25	19.9
39635-34-2	162-HxCB	U	.915	pg/L	0.915	19.9
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	2.49	pg/L	1.27	19.9
74472-46-1	165-HxCB	U	1.35	pg/L	1.35	19.9
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	1.71	pg/L	0.974	19.9
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.23	pg/L	1.23	19.9
35065-30-6	170-HpCB	J	7.02	pg/L	1.43	19.9
52663-71-5	171-HpCB	CJ	2.62	pg/L	1.33	39.8
52663-74-8	172-HpCB	J	1.81	pg/L	1.35	19.9
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	7.22	pg/L	1.25	19.9
40186-70-7	175-HpCB	U	.954	pg/L	0.954	19.9
52663-65-7	176-HpCB	J	0.815	pg/L	0.716	19.9
52663-70-4	177-HpCB	J	4.04	pg/L	1.31	19.9
52663-67-9	178-HpCB	J	1.73	pg/L	0.994	19.9
52663-64-6	179-HpCB	J	2.72	pg/L	0.696	19.9
35065-29-3	180-HpCB	CJ	16.1	pg/L	1.15	39.8
74472-47-2	181-HpCB	U	1.33	pg/L	1.33	19.9
60145-23-5	182-HpCB	U	.954	pg/L	0.954	19.9
52663-69-1	183-HpCB	CJ	5.23	pg/L	1.21	39.8
74472-48-3	184-HpCB	U	.756	pg/L	0.756	19.9
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.815	pg/L	0.815	19.9
52663-68-0	187-HpCB	J	8.73	pg/L	0.954	19.9
74487-85-7	188-HpCB	U	.855	pg/L	0.855	19.9
39635-31-9	189-HpCB	U	.835	pg/L	0.835	19.9
41411-64-7	190-HpCB	J	1.41	pg/L	1.13	19.9
74472-50-7	191-HpCB	U	1.03	pg/L	1.03	19.9
74472-51-8	192-HpCB	U	1.21	pg/L	1.21	19.9

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944002**	**Date Collected:**	**10/13/2016 05:45**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 06:34**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1005.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	4.71	pg/L	0.875	19.9
52663-78-2	195-OcCB	J	1.65	pg/L	0.915	19.9
42740-50-1	196-OcCB	J	2.09	pg/L	1.09	19.9
33091-17-7	197-OcCB	CJ	1.13	pg/L	0.815	39.8
68194-17-2	198-OcCB	CJ	4.79	pg/L	1.15	39.8
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	J	0.795	pg/L	0.776	19.9
2136-99-4	202-OcCB	J	1.67	pg/L	0.915	19.9
52663-76-0	203-OcCB	J	3.52	pg/L	1.17	19.9
74472-52-9	204-OcCB	U	.776	pg/L	0.776	19.9
74472-53-0	205-OcCB	U	.835	pg/L	0.835	19.9
40186-72-9	206-NoCB	J	3.50	pg/L	1.53	19.9
52663-79-3	207-NoCB	U	.954	pg/L	0.954	19.9
52663-77-1	208-NoCB	J	1.49	pg/L	1.05	19.9
2051-24-3	209-DeCB	J	2.31	pg/L	0.855	19.9
27323-18-8	Total Mono PCBs	J	8.67	pg/L	6.62	19.9
25512-42-9	Total Di PCBs		96.0	pg/L	6.62	19.9
25323-68-6	Total Tri PCBs		133	pg/L	6.62	19.9
26914-33-0	Total Tetra PCBs		151	pg/L	6.62	19.9
25429-29-2	Total Penta PCBs		130	pg/L	6.62	19.9
26601-64-9	Total Hexa PCBs		121	pg/L	6.62	19.9
28655-71-2	Total Hepta PCBs		59.5	pg/L	6.62	19.9
55722-26-4	Total Octa PCBs		20.4	pg/L	6.62	19.9
53742-07-7	Total Nona PCBs	J	4.99	pg/L	6.62	19.9
2051-24-3	Total Deca PCB	J	2.31	pg/L	6.62	19.9
1336-36-3	Total PCB Congeners		727	pg/L	6.62	19.9

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		977	1990	pg/L	49.1	(15%-150%)
13C-3-MoCB		1080	1990	pg/L	54.5	(15%-150%)
13C-4-DiCB		1070	1990	pg/L	53.7	(25%-150%)
13C-15-DiCB		2130	1990	pg/L	107	(25%-150%)
13C-19-TrCB		1480	1990	pg/L	74.6	(25%-150%)
13C-37-TrCB		1960	1990	pg/L	98.7	(25%-150%)
13C-54-TeCB		1220	1990	pg/L	61.6	(25%-150%)
13C-77-TeCB		2370	1990	pg/L	119	(25%-150%)
13C-81-TeCB		2410	1990	pg/L	121	(25%-150%)
13C-104-PeCB		1540	1990	pg/L	77.6	(25%-150%)
13C-105-PeCB		1970	1990	pg/L	99.1	(25%-150%)
13C-114-PeCB		1950	1990	pg/L	97.8	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944002**	**Date Collected:**	**10/13/2016 05:45**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 06:34**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1005.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1960	1990	pg/L	98.5	(25%-150%)
13C-123-PeCB		2040	1990	pg/L	103	(25%-150%)
13C-126-PeCB		1890	1990	pg/L	95.0	(25%-150%)
13C-155-HxCB		1720	1990	pg/L	86.6	(25%-150%)
13C-156-HxCB	C	4040	3980	pg/L	102	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		2110	1990	pg/L	106	(25%-150%)
13C-169-HxCB		1980	1990	pg/L	99.7	(25%-150%)
13C-188-HpCB		1480	1990	pg/L	74.5	(25%-150%)
13C-189-HpCB		1860	1990	pg/L	93.5	(25%-150%)
13C-202-OcCB		1710	1990	pg/L	86.2	(25%-150%)
13C-205-OcCB		2030	1990	pg/L	102	(25%-150%)
13C-206-NoCB		1790	1990	pg/L	90.2	(25%-150%)
13C-208-NoCB		1720	1990	pg/L	86.7	(25%-150%)
13C-209-DeCB		2090	1990	pg/L	105	(25%-150%)
13C-28-TrCB		1280	1990	pg/L	64.4	(30%-135%)
13C-111-PeCB		1730	1990	pg/L	87.3	(30%-135%)
13C-178-HpCB		1720	1990	pg/L	86.5	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944003**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/03/2016 16:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d03nov16a-3**			**Dilution:**	**10**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1040.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	12.4	pg/L	7.13	192
2051-61-8	2-MoCB	J	17.1	pg/L	6.80	192
2051-62-9	3-MoCB	J	27.1	pg/L	8.59	192
13029-08-8	4-DiCB	U	33.7	pg/L	33.7	192
16605-91-7	5-DiCB	U	34.3	pg/L	34.3	192
25569-80-6	6-DiCB	U	26.3	pg/L	26.3	192
33284-50-3	7-DiCB	U	28.6	pg/L	28.6	192
34883-43-7	8-DiCB	J	117	pg/L	23.0	192
34883-39-1	9-DiCB	U	28	pg/L	28.0	192
33146-45-1	10-DiCB	U	27.2	pg/L	27.2	192
2050-67-1	11-DiCB	J	455	pg/L	28.4	961
2974-92-7	12-DiCB	CU	29.4	pg/L	29.4	384
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	26.5	pg/L	26.5	192
2050-68-2	15-DiCB	J	151	pg/L	40.5	192
38444-78-9	16-TrCB	J	116	pg/L	22.9	192
37680-66-3	17-TrCB	J	91.0	pg/L	18.9	192
37680-65-2	18-TrCB	CJ	190	pg/L	15.5	384
38444-73-4	19-TrCB	J	30.5	pg/L	16.2	192
38444-84-7	20-TrCB	CJ	376	pg/L	13.5	384
55702-46-0	21-TrCB	CJ	248	pg/L	13.3	384
38444-85-8	22-TrCB	J	170	pg/L	14.2	192
55720-44-0	23-TrCB	U	14.1	pg/L	14.1	192
55702-45-9	24-TrCB	U	14.3	pg/L	14.3	192
55712-37-3	25-TrCB	J	30.6	pg/L	12.7	192
38444-81-4	26-TrCB	CJ	66.9	pg/L	12.7	384
38444-76-7	27-TrCB	J	16.4	pg/L	13.1	192
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		301	pg/L	12.2	192
38444-77-8	32-TrCB	J	58.3	pg/L	11.9	192

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944003**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/03/2016 16:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d03nov16a-3**			**Dilution:**	**10**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1040.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	13	pg/L	13.0	192
37680-69-6	35-TrCB	J	35.7	pg/L	15.2	192
38444-87-0	36-TrCB	U	13.9	pg/L	13.9	192
38444-90-5	37-TrCB		219	pg/L	19.6	192
53555-66-1	38-TrCB	U	13.7	pg/L	13.7	192
38444-88-1	39-TrCB	U	14.8	pg/L	14.8	192
38444-93-8	40-TeCB	CJ	321	pg/L	29.6	384
52663-59-9	41-TeCB	J	70.5	pg/L	32.2	192
36559-22-5	42-TeCB	J	182	pg/L	36.2	192
70362-46-8	43-TeCB	U	44.7	pg/L	44.7	192
41464-39-5	44-TeCB	C	1020	pg/L	29.8	576
70362-45-7	45-TeCB	CJ	116	pg/L	13.7	384
41464-47-5	46-TeCB	J	47.1	pg/L	13.6	192
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	84.8	pg/L	31.9	192
41464-40-8	49-TeCB	C	462	pg/L	28.0	384
62796-65-0	50-TeCB	CJ	100	pg/L	12.8	384
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		1800	pg/L	28.1	192
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	8.44	pg/L	8.44	192
74338-24-2	55-TeCB	J	29.2	pg/L	21.7	192
41464-43-1	56-TeCB		379	pg/L	21.4	192
70424-67-8	57-TeCB	U	18	pg/L	18.0	192
41464-49-7	58-TeCB	U	19.2	pg/L	19.2	192
74472-33-6	59-TeCB	CJ	47.2	pg/L	23.0	576
33025-41-1	60-TeCB	J	146	pg/L	20.9	192
33284-53-6	61-TeCB	C	2170	pg/L	19.2	769
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	J	18.1	pg/L	17.2	192
52663-58-8	64-TeCB		406	pg/L	25.0	192

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944003**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/03/2016 16:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d03nov16a-3**			**Dilution:**	**10**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1040.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		672	pg/L	17.2	192
73575-53-8	67-TeCB	J	17.5	pg/L	16.6	192
73575-52-7	68-TeCB	U	18	pg/L	18.0	192
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	17	pg/L	17.0	192
74338-23-1	73-TeCB	J	34.4	pg/L	23.8	192
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	182	pg/L	24.3	192
70362-49-1	78-TeCB	U	19.5	pg/L	19.5	192
41464-48-6	79-TeCB	J	64.1	pg/L	17.0	192
33284-52-5	80-TeCB	U	16.3	pg/L	16.3	192
70362-50-4	81-TeCB	U	21.9	pg/L	21.9	192
52663-62-4	82-PeCB		680	pg/L	26.1	192
60145-20-2	83-PeCB		344	pg/L	24.5	192
52663-60-2	84-PeCB		1400	pg/L	25.6	192
65510-45-4	85-PeCB	C	1000	pg/L	19.5	576
55312-69-1	86-PeCB	C	4020	pg/L	21.5	1150
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	C	631	pg/L	24.1	384
73575-57-2	89-PeCB	J	43.3	pg/L	24.0	192
68194-07-0	90-PeCB	C	5060	pg/L	21.2	576
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB		870	pg/L	23.8	192
73575-56-1	93-PeCB	CU	23	pg/L	23.0	384
73575-55-0	94-PeCB	U	26.9	pg/L	26.9	192
38379-99-6	95-PeCB		3770	pg/L	22.6	192
73575-54-9	96-PeCB	J	22.7	pg/L	7.44	192

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944003**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/03/2016 16:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d03nov16a-3**			**Dilution:**	**10**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1040.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CJ	130	pg/L	27.7	384
38380-01-7	99-PeCB		1780	pg/L	21.5	192
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	21.1	pg/L	21.1	192
56558-16-8	104-PeCB	U	7.47	pg/L	7.47	192
32598-14-4	105-PeCB		2520	pg/L	30.8	192
70424-69-0	106-PeCB	U	25.4	pg/L	25.4	192
70424-68-9	107-PeCB		302	pg/L	20.3	192
70362-41-3	108-PeCB	CJ	243	pg/L	24.9	384
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	8190	pg/L	21.5	384
39635-32-0	111-PeCB	U	19.2	pg/L	19.2	192
74472-36-9	112-PeCB	U	20.1	pg/L	20.1	192
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	J	112	pg/L	30.0	192
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		5500	pg/L	25.8	192
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	17.3	pg/L	17.3	192
56558-18-0	121-PeCB	U	19.4	pg/L	19.4	192
76842-07-4	122-PeCB	J	55.0	pg/L	24.5	192
65510-44-3	123-PeCB	J	62.5	pg/L	28.0	192
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	J	57.1	pg/L	37.6	192
39635-33-1	127-PeCB	U	24.6	pg/L	24.6	192
38380-07-3	128-HxCB	C	1440	pg/L	30.3	384

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944003**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/03/2016 16:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d03nov16a-3**			**Dilution:**	**10**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1040.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	8430	pg/L	32.8	576
52663-66-8	130-HxCB		500	pg/L	35.8	192
61798-70-7	131-HxCB	J	125	pg/L	41.6	192
38380-05-1	132-HxCB		2860	pg/L	38.2	192
35694-04-3	133-HxCB	J	82.8	pg/L	33.4	192
52704-70-8	134-HxCB		391	pg/L	42.7	192
52744-13-5	135-HxCB	C	1740	pg/L	7.82	384
38411-22-2	136-HxCB		720	pg/L	5.82	192
35694-06-5	137-HxCB		480	pg/L	32.7	192
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CJ	123	pg/L	31.9	384
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		1180	pg/L	33.6	192
41411-61-4	142-HxCB	U	36.9	pg/L	36.9	192
68194-15-0	143-HxCB	U	35.2	pg/L	35.2	192
68194-14-9	144-HxCB		272	pg/L	7.36	192
74472-40-5	145-HxCB	U	6.57	pg/L	6.57	192
51908-16-8	146-HxCB		728	pg/L	26.2	192
68194-13-8	147-HxCB	C	4570	pg/L	32.3	384
74472-41-6	148-HxCB	U	7.51	pg/L	7.51	192
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	6.51	pg/L	6.51	192
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	5.73	pg/L	5.73	192
35065-27-1	153-HxCB	C	4760	pg/L	26.1	384
60145-22-4	154-HxCB	J	45.0	pg/L	6.55	192
33979-03-2	155-HxCB	U	5.48	pg/L	5.48	192
38380-08-4	156-HxCB	C	1190	pg/L	29.7	384
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB		777	pg/L	23.7	192
39635-35-3	159-HxCB	J	37.8	pg/L	19.8	192
41411-62-5	160-HxCB	U	31.5	pg/L	31.5	192

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944003**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/03/2016 16:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d03nov16a-3**			**Dilution:**	**10**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1040.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	26.5	pg/L	26.5	192
39635-34-2	162-HxCB	J	38.4	pg/L	21.5	192
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB		485	pg/L	26.8	192
74472-46-1	165-HxCB	U	29.3	pg/L	29.3	192
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB		372	pg/L	22.5	192
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	26.5	pg/L	26.5	192
35065-30-6	170-HpCB		1230	pg/L	27.1	192
52663-71-5	171-HpCB	CJ	373	pg/L	25.7	384
52663-74-8	172-HpCB		213	pg/L	26.3	192
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		1150	pg/L	24.5	192
40186-70-7	175-HpCB	J	51.2	pg/L	9.43	192
52663-65-7	176-HpCB	J	127	pg/L	7.22	192
52663-70-4	177-HpCB		630	pg/L	25.1	192
52663-67-9	178-HpCB		204	pg/L	9.91	192
52663-64-6	179-HpCB		383	pg/L	7.36	192
35065-29-3	180-HpCB	C	2560	pg/L	22.6	384
74472-47-2	181-HpCB	U	25.4	pg/L	25.4	192
60145-23-5	182-HpCB	U	9.51	pg/L	9.51	192
52663-69-1	183-HpCB	C	797	pg/L	22.9	384
74472-48-3	184-HpCB	U	7.51	pg/L	7.51	192
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	8.07	pg/L	8.07	192
52663-68-0	187-HpCB		1280	pg/L	9.65	192
74487-85-7	188-HpCB	U	7.97	pg/L	7.97	192
39635-31-9	189-HpCB	J	65.5	pg/L	15.6	192
41411-64-7	190-HpCB		233	pg/L	22.0	192
74472-50-7	191-HpCB	J	41.5	pg/L	19.9	192
74472-51-8	192-HpCB	U	24	pg/L	24.0	192

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944003**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/03/2016 16:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d03nov16a-3**			**Dilution:**	**10**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1040.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		470	pg/L	19.8	192
52663-78-2	195-OcCB	J	175	pg/L	20.3	192
42740-50-1	196-OcCB		260	pg/L	19.3	192
33091-17-7	197-OcCB	CJ	82.3	pg/L	14.6	384
68194-17-2	198-OcCB	C	609	pg/L	20.6	384
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	J	67.2	pg/L	14.1	192
2136-99-4	202-OcCB	J	94.9	pg/L	15.7	192
52663-76-0	203-OcCB		397	pg/L	20.9	192
74472-52-9	204-OcCB	U	14	pg/L	14.0	192
74472-53-0	205-OcCB	J	32.0	pg/L	18.7	192
40186-72-9	206-NoCB		285	pg/L	19.6	192
52663-79-3	207-NoCB	J	40.2	pg/L	13.3	192
52663-77-1	208-NoCB	J	74.6	pg/L	14.3	192
2051-24-3	209-DeCB	J	87.3	pg/L	14.0	192
27323-18-8	Total Mono PCBs	J	56.6	pg/L	64.0	192
25512-42-9	Total Di PCBs		723	pg/L	64.0	192
25323-68-6	Total Tri PCBs		1950	pg/L	64.0	192
26914-33-0	Total Tetra PCBs		8380	pg/L	64.0	192
25429-29-2	Total Penta PCBs		36800	pg/L	64.0	192
26601-64-9	Total Hexa PCBs		31300	pg/L	64.0	192
28655-71-2	Total Hepta PCBs		9350	pg/L	64.0	192
55722-26-4	Total Octa PCBs		2190	pg/L	64.0	192
53742-07-7	Total Nona PCBs		400	pg/L	64.0	192
2051-24-3	Total Deca PCB	J	87.3	pg/L	64.0	192
1336-36-3	Total PCB Congeners		91300	pg/L	64.0	192

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1220	1920	pg/L	63.7	(15%-150%)
13C-3-MoCB		1250	1920	pg/L	65.2	(15%-150%)
13C-4-DiCB		1300	1920	pg/L	67.7	(25%-150%)
13C-15-DiCB		1630	1920	pg/L	85.1	(25%-150%)
13C-19-TrCB		1500	1920	pg/L	78.3	(25%-150%)
13C-37-TrCB		1820	1920	pg/L	94.7	(25%-150%)
13C-54-TeCB		1650	1920	pg/L	85.9	(25%-150%)
13C-77-TeCB		2140	1920	pg/L	111	(25%-150%)
13C-81-TeCB		2210	1920	pg/L	115	(25%-150%)
13C-104-PeCB		1570	1920	pg/L	81.9	(25%-150%)
13C-105-PeCB		1810	1920	pg/L	94.0	(25%-150%)
13C-114-PeCB		1810	1920	pg/L	94.2	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944003**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/03/2016 16:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d03nov16a-3**			**Dilution:**	**10**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1040.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1820	1920	pg/L	94.9	(25%-150%)
13C-123-PeCB		1900	1920	pg/L	99.0	(25%-150%)
13C-126-PeCB		1740	1920	pg/L	90.4	(25%-150%)
13C-155-HxCB		1540	1920	pg/L	80.0	(25%-150%)
13C-156-HxCB	C	3430	3840	pg/L	89.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1780	1920	pg/L	92.7	(25%-150%)
13C-169-HxCB		1630	1920	pg/L	84.6	(25%-150%)
13C-188-HpCB		1640	1920	pg/L	85.1	(25%-150%)
13C-189-HpCB		1610	1920	pg/L	84.0	(25%-150%)
13C-202-OcCB		1730	1920	pg/L	89.9	(25%-150%)
13C-205-OcCB		1780	1920	pg/L	92.6	(25%-150%)
13C-206-NoCB		1630	1920	pg/L	84.9	(25%-150%)
13C-208-NoCB		1680	1920	pg/L	87.4	(25%-150%)
13C-209-DeCB		2010	1920	pg/L	105	(25%-150%)
13C-28-TrCB		1520	1920	pg/L	79.1	(30%-135%)
13C-111-PeCB		1680	1920	pg/L	87.6	(30%-135%)
13C-178-HpCB		1820	1920	pg/L	94.6	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944004**	**Date Collected:**	**10/13/2016 05:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 08:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**960.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	10.4	pg/L	1.15	20.8
2051-61-8	2-MoCB	J	4.54	pg/L	0.958	20.8
2051-62-9	3-MoCB	J	9.67	pg/L	1.19	20.8
13029-08-8	4-DiCB		36.6	pg/L	3.06	20.8
16605-91-7	5-DiCB	U	2.4	pg/L	2.40	20.8
25569-80-6	6-DiCB	J	17.8	pg/L	1.87	20.8
33284-50-3	7-DiCB	J	5.46	pg/L	2.12	20.8
34883-43-7	8-DiCB		81.9	pg/L	1.77	20.8
34883-39-1	9-DiCB	J	5.92	pg/L	2.12	20.8
33146-45-1	10-DiCB	U	1.87	pg/L	1.87	20.8
2050-67-1	11-DiCB		193	pg/L	2.08	104
2974-92-7	12-DiCB	CJ	20.6	pg/L	2.15	41.7
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	1.98	pg/L	1.98	20.8
2050-68-2	15-DiCB		106	pg/L	2.73	20.8
38444-78-9	16-TrCB		55.9	pg/L	2.10	20.8
37680-66-3	17-TrCB		47.3	pg/L	1.73	20.8
37680-65-2	18-TrCB	C	102	pg/L	1.42	41.7
38444-73-4	19-TrCB	J	15.2	pg/L	1.87	20.8
38444-84-7	20-TrCB	C	212	pg/L	1.17	41.7
55702-46-0	21-TrCB	C	119	pg/L	1.17	41.7
38444-85-8	22-TrCB		93.9	pg/L	1.23	20.8
55720-44-0	23-TrCB	U	1.25	pg/L	1.25	20.8
55702-45-9	24-TrCB	J	4.04	pg/L	1.33	20.8
55712-37-3	25-TrCB	J	14.1	pg/L	1.12	20.8
38444-81-4	26-TrCB	CJ	30.5	pg/L	1.08	41.7
38444-76-7	27-TrCB	J	10.1	pg/L	1.19	20.8
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		148	pg/L	1.06	20.8
38444-77-8	32-TrCB		31.7	pg/L	1.06	20.8

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944004**	**Date Collected:**	**10/13/2016 05:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 08:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**960.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.17	pg/L	1.17	20.8
37680-69-6	35-TrCB	J	13.3	pg/L	2.31	20.8
38444-87-0	36-TrCB	U	2.19	pg/L	2.19	20.8
38444-90-5	37-TrCB		173	pg/L	2.92	20.8
53555-66-1	38-TrCB	U	2.06	pg/L	2.06	20.8
38444-88-1	39-TrCB	U	2.21	pg/L	2.21	20.8
38444-93-8	40-TeCB	C	205	pg/L	3.12	41.7
52663-59-9	41-TeCB		42.0	pg/L	3.15	20.8
36559-22-5	42-TeCB		113	pg/L	3.67	20.8
70362-46-8	43-TeCB	J	19.4	pg/L	4.60	20.8
41464-39-5	44-TeCB	C	394	pg/L	3.06	62.5
70362-45-7	45-TeCB	CJ	40.4	pg/L	1.33	41.7
41464-47-5	46-TeCB	J	16.4	pg/L	1.35	20.8
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB		63.0	pg/L	3.23	20.8
41464-40-8	49-TeCB	C	177	pg/L	2.85	41.7
62796-65-0	50-TeCB	CJ	23.9	pg/L	1.23	41.7
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		433	pg/L	2.90	20.8
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	.958	pg/L	0.958	20.8
74338-24-2	55-TeCB	J	9.67	pg/L	3.17	20.8
41464-43-1	56-TeCB		202	pg/L	3.23	20.8
70424-67-8	57-TeCB	U	2.79	pg/L	2.79	20.8
41464-49-7	58-TeCB	U	2.92	pg/L	2.92	20.8
74472-33-6	59-TeCB	CJ	37.9	pg/L	2.35	62.5
33025-41-1	60-TeCB		92.0	pg/L	3.06	20.8
33284-53-6	61-TeCB	C	676	pg/L	2.96	83.3
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	J	11.5	pg/L	2.65	20.8
52663-58-8	64-TeCB		196	pg/L	2.52	20.8

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944004**	**Date Collected:**	**10/13/2016 05:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 08:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**960.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		289	pg/L	2.60	20.8
73575-53-8	67-TeCB	J	11.2	pg/L	2.56	20.8
73575-52-7	68-TeCB	U	2.77	pg/L	2.77	20.8
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	2.67	pg/L	2.67	20.8
74338-23-1	73-TeCB	J	9.14	pg/L	2.44	20.8
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB		105	pg/L	3.60	20.8
70362-49-1	78-TeCB	U	2.81	pg/L	2.81	20.8
41464-48-6	79-TeCB	J	10.8	pg/L	2.42	20.8
33284-52-5	80-TeCB	U	2.42	pg/L	2.42	20.8
70362-50-4	81-TeCB	J	5.27	pg/L	3.37	20.8
52663-62-4	82-PeCB		130	pg/L	2.54	20.8
60145-20-2	83-PeCB		77.7	pg/L	2.46	20.8
52663-60-2	84-PeCB		267	pg/L	2.56	20.8
65510-45-4	85-PeCB	C	172	pg/L	1.87	62.5
55312-69-1	86-PeCB	C	852	pg/L	2.08	125
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	C	125	pg/L	2.42	41.7
73575-57-2	89-PeCB	J	10.7	pg/L	2.40	20.8
68194-07-0	90-PeCB	C	995	pg/L	2.04	62.5
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB		170	pg/L	2.29	20.8
73575-56-1	93-PeCB	CJ	4.94	pg/L	2.37	41.7
73575-55-0	94-PeCB	J	3.44	pg/L	2.71	20.8
38379-99-6	95-PeCB		654	pg/L	2.25	20.8
73575-54-9	96-PeCB	J	5.08	pg/L	1.15	20.8

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944004**	**Date Collected:**	**10/13/2016 05:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 08:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**960.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CJ	28.0	pg/L	2.73	41.7
38380-01-7	99-PeCB		360	pg/L	2.08	20.8
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	J	3.27	pg/L	2.12	20.8
56558-16-8	104-PeCB	U	1.19	pg/L	1.19	20.8
32598-14-4	105-PeCB		583	pg/L	4.52	20.8
70424-69-0	106-PeCB	U	3.65	pg/L	3.65	20.8
70424-68-9	107-PeCB		70.2	pg/L	2.92	20.8
70362-41-3	108-PeCB	C	50.8	pg/L	3.56	41.7
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	1780	pg/L	2.00	41.7
39635-32-0	111-PeCB	U	1.81	pg/L	1.81	20.8
74472-36-9	112-PeCB	U	1.85	pg/L	1.85	20.8
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB		24.1	pg/L	4.87	20.8
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		1240	pg/L	3.92	20.8
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	J	3.02	pg/L	1.60	20.8
56558-18-0	121-PeCB	U	1.87	pg/L	1.87	20.8
76842-07-4	122-PeCB	J	12.2	pg/L	3.58	20.8
65510-44-3	123-PeCB	J	16.8	pg/L	4.15	20.8
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB		24.5	pg/L	5.52	20.8
39635-33-1	127-PeCB	U	3.58	pg/L	3.58	20.8
38380-07-3	128-HxCB	C	329	pg/L	7.12	41.7

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944004**	**Date Collected:**	**10/13/2016 05:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 08:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**960.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	2130	pg/L	7.33	62.5
52663-66-8	130-HxCB		122	pg/L	8.19	20.8
61798-70-7	131-HxCB		27.4	pg/L	9.31	20.8
38380-05-1	132-HxCB		693	pg/L	8.77	20.8
35694-04-3	133-HxCB	J	19.7	pg/L	7.56	20.8
52704-70-8	134-HxCB		94.1	pg/L	9.85	20.8
52744-13-5	135-HxCB	C	448	pg/L	1.46	41.7
38411-22-2	136-HxCB		153	pg/L	1.06	20.8
35694-06-5	137-HxCB		104	pg/L	7.48	20.8
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CJ	30.9	pg/L	7.19	41.7
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		358	pg/L	7.75	20.8
41411-61-4	142-HxCB	U	8.54	pg/L	8.54	20.8
68194-15-0	143-HxCB	U	7.98	pg/L	7.98	20.8
68194-14-9	144-HxCB		64.3	pg/L	1.37	20.8
74472-40-5	145-HxCB	U	1.21	pg/L	1.21	20.8
51908-16-8	146-HxCB		199	pg/L	6.00	20.8
68194-13-8	147-HxCB	C	1280	pg/L	7.46	41.7
74472-41-6	148-HxCB	J	1.42	pg/L	1.35	20.8
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	J	3.15	pg/L	1.19	20.8
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	1.06	pg/L	1.06	20.8
35065-27-1	153-HxCB	C	1420	pg/L	5.96	41.7
60145-22-4	154-HxCB	J	13.1	pg/L	1.21	20.8
33979-03-2	155-HxCB	U	1.04	pg/L	1.04	20.8
38380-08-4	156-HxCB	C	288	pg/L	5.25	41.7
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB		204	pg/L	5.40	20.8
39635-35-3	159-HxCB	U	3.19	pg/L	3.19	20.8
41411-62-5	160-HxCB	U	7.04	pg/L	7.04	20.8

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944004**	**Date Collected:**	**10/13/2016 05:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 08:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**960.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	5.96	pg/L	5.96	20.8
39635-34-2	162-HxCB	U	3.42	pg/L	3.42	20.8
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB		129	pg/L	6.10	20.8
74472-46-1	165-HxCB	U	6.44	pg/L	6.44	20.8
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB		101	pg/L	3.50	20.8
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	J	9.08	pg/L	4.77	20.8
35065-30-6	170-HpCB		483	pg/L	5.06	20.8
52663-71-5	171-HpCB	C	139	pg/L	4.71	41.7
52663-74-8	172-HpCB		94.5	pg/L	4.77	20.8
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		497	pg/L	4.42	20.8
40186-70-7	175-HpCB		21.6	pg/L	2.42	20.8
52663-65-7	176-HpCB		51.8	pg/L	1.81	20.8
52663-70-4	177-HpCB		279	pg/L	4.65	20.8
52663-67-9	178-HpCB		96.6	pg/L	2.52	20.8
52663-64-6	179-HpCB		160	pg/L	1.77	20.8
35065-29-3	180-HpCB	C	1220	pg/L	4.08	41.7
74472-47-2	181-HpCB	U	4.73	pg/L	4.73	20.8
60145-23-5	182-HpCB	J	3.25	pg/L	2.40	20.8
52663-69-1	183-HpCB	C	373	pg/L	4.31	41.7
74472-48-3	184-HpCB	J	2.08	pg/L	1.90	20.8
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	2.04	pg/L	2.04	20.8
52663-68-0	187-HpCB		606	pg/L	2.42	20.8
74487-85-7	188-HpCB	J	2.69	pg/L	2.04	20.8
39635-31-9	189-HpCB		25.4	pg/L	3.31	20.8
41411-64-7	190-HpCB		100	pg/L	3.98	20.8
74472-50-7	191-HpCB	J	20.5	pg/L	3.67	20.8
74472-51-8	192-HpCB	U	4.27	pg/L	4.27	20.8

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944004**	**Date Collected:**	**10/13/2016 05:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 08:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**960.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		275	pg/L	4.21	20.8
52663-78-2	195-OcCB		92.8	pg/L	4.42	20.8
42740-50-1	196-OcCB		138	pg/L	3.98	20.8
33091-17-7	197-OcCB	C	44.3	pg/L	2.96	41.7
68194-17-2	198-OcCB	C	333	pg/L	4.23	41.7
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB		42.3	pg/L	2.81	20.8
2136-99-4	202-OcCB		63.7	pg/L	3.17	20.8
52663-76-0	203-OcCB		212	pg/L	4.27	20.8
74472-52-9	204-OcCB	U	2.85	pg/L	2.85	20.8
74472-53-0	205-OcCB	J	16.5	pg/L	4.37	20.8
40186-72-9	206-NoCB		187	pg/L	4.23	20.8
52663-79-3	207-NoCB		22.2	pg/L	2.52	20.8
52663-77-1	208-NoCB		44.4	pg/L	2.79	20.8
2051-24-3	209-DeCB		44.9	pg/L	1.87	20.8
27323-18-8	Total Mono PCBs		24.6	pg/L	6.94	20.8
25512-42-9	Total Di PCBs		468	pg/L	6.94	20.8
25323-68-6	Total Tri PCBs		1070	pg/L	6.94	20.8
26914-33-0	Total Tetra PCBs		3180	pg/L	6.94	20.8
25429-29-2	Total Penta PCBs		7660	pg/L	6.94	20.8
26601-64-9	Total Hexa PCBs		8230	pg/L	6.94	20.8
28655-71-2	Total Hepta PCBs		4170	pg/L	6.94	20.8
55722-26-4	Total Octa PCBs		1220	pg/L	6.94	20.8
53742-07-7	Total Nona PCBs		254	pg/L	6.94	20.8
2051-24-3	Total Deca PCB		44.9	pg/L	6.94	20.8
1336-36-3	Total PCB Congeners		26300	pg/L	6.94	20.8

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1190	2080	pg/L	56.9	(15%-150%)
13C-3-MoCB		1250	2080	pg/L	60.1	(15%-150%)
13C-4-DiCB		1190	2080	pg/L	57.1	(25%-150%)
13C-15-DiCB		2260	2080	pg/L	108	(25%-150%)
13C-19-TrCB		1530	2080	pg/L	73.4	(25%-150%)
13C-37-TrCB		2170	2080	pg/L	104	(25%-150%)
13C-54-TeCB		1440	2080	pg/L	69.0	(25%-150%)
13C-77-TeCB		2550	2080	pg/L	123	(25%-150%)
13C-81-TeCB		2580	2080	pg/L	124	(25%-150%)
13C-104-PeCB		1740	2080	pg/L	83.7	(25%-150%)
13C-105-PeCB		2100	2080	pg/L	101	(25%-150%)
13C-114-PeCB		2000	2080	pg/L	96.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944004**	**Date Collected:**	**10/13/2016 05:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 08:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**960.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		2220	2080	pg/L	106	(25%-150%)
13C-123-PeCB		2300	2080	pg/L	110	(25%-150%)
13C-126-PeCB		2040	2080	pg/L	97.8	(25%-150%)
13C-155-HxCB		1900	2080	pg/L	91.3	(25%-150%)
13C-156-HxCB	C	4120	4170	pg/L	98.9	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		2210	2080	pg/L	106	(25%-150%)
13C-169-HxCB		1970	2080	pg/L	94.5	(25%-150%)
13C-188-HpCB		1790	2080	pg/L	86.1	(25%-150%)
13C-189-HpCB		1990	2080	pg/L	95.4	(25%-150%)
13C-202-OcCB		2090	2080	pg/L	101	(25%-150%)
13C-205-OcCB		2200	2080	pg/L	106	(25%-150%)
13C-206-NoCB		1850	2080	pg/L	88.6	(25%-150%)
13C-208-NoCB		1930	2080	pg/L	92.8	(25%-150%)
13C-209-DeCB		2280	2080	pg/L	110	(25%-150%)
13C-28-TrCB		1410	2080	pg/L	67.8	(30%-135%)
13C-111-PeCB		1920	2080	pg/L	92.2	(30%-135%)
13C-178-HpCB		1870	2080	pg/L	89.8	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944005**	**Date Collected:**	**10/13/2016 07:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 12:19**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1045.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	3.14	pg/L	0.823	19.1
2051-61-8	2-MoCB	J	1.42	pg/L	0.670	19.1
2051-62-9	3-MoCB	J	2.64	pg/L	0.880	19.1
13029-08-8	4-DiCB	J	8.44	pg/L	2.14	19.1
16605-91-7	5-DiCB	U	1.51	pg/L	1.51	19.1
25569-80-6	6-DiCB	J	2.66	pg/L	1.19	19.1
33284-50-3	7-DiCB	U	1.3	pg/L	1.30	19.1
34883-43-7	8-DiCB	J	10.7	pg/L	1.09	19.1
34883-39-1	9-DiCB	U	1.34	pg/L	1.34	19.1
33146-45-1	10-DiCB	U	1.28	pg/L	1.28	19.1
2050-67-1	11-DiCB	J	59.2	pg/L	1.30	95.7
2974-92-7	12-DiCB	CJ	4.04	pg/L	1.32	38.3
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	1.26	pg/L	1.26	19.1
2050-68-2	15-DiCB	J	11.3	pg/L	1.68	19.1
38444-78-9	16-TrCB	J	6.81	pg/L	2.16	19.1
37680-66-3	17-TrCB	J	5.41	pg/L	1.93	19.1
37680-65-2	18-TrCB	CJ	12.7	pg/L	1.57	38.3
38444-73-4	19-TrCB	J	2.77	pg/L	2.24	19.1
38444-84-7	20-TrCB	CJ	18.5	pg/L	1.30	38.3
55702-46-0	21-TrCB	CJ	10.2	pg/L	1.28	38.3
38444-85-8	22-TrCB	J	9.45	pg/L	1.40	19.1
55720-44-0	23-TrCB	U	1.38	pg/L	1.38	19.1
55702-45-9	24-TrCB	U	1.51	pg/L	1.51	19.1
55712-37-3	25-TrCB	U	1.24	pg/L	1.24	19.1
38444-81-4	26-TrCB	CJ	2.28	pg/L	1.21	38.3
38444-76-7	27-TrCB	U	1.32	pg/L	1.32	19.1
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	J	13.7	pg/L	1.15	19.1
38444-77-8	32-TrCB	J	3.86	pg/L	1.24	19.1

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944005**	**Date Collected:**	**10/13/2016 07:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 12:19**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1045.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.28	pg/L	1.28	19.1
37680-69-6	35-TrCB	U	1.43	pg/L	1.43	19.1
38444-87-0	36-TrCB	U	1.36	pg/L	1.36	19.1
38444-90-5	37-TrCB	J	11.2	pg/L	1.80	19.1
53555-66-1	38-TrCB	U	1.3	pg/L	1.30	19.1
38444-88-1	39-TrCB	U	1.38	pg/L	1.38	19.1
38444-93-8	40-TeCB	CJ	10.1	pg/L	1.80	38.3
52663-59-9	41-TeCB	J	3.83	pg/L	1.84	19.1
36559-22-5	42-TeCB	J	5.87	pg/L	2.05	19.1
70362-46-8	43-TeCB	U	2.28	pg/L	2.28	19.1
41464-39-5	44-TeCB	CJ	22.6	pg/L	1.74	57.4
70362-45-7	45-TeCB	CJ	3.27	pg/L	0.842	38.3
41464-47-5	46-TeCB	J	1.49	pg/L	0.842	19.1
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	3.90	pg/L	1.84	19.1
41464-40-8	49-TeCB	CJ	9.51	pg/L	1.65	38.3
62796-65-0	50-TeCB	CJ	2.09	pg/L	0.784	38.3
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	19.0	pg/L	1.65	19.1
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	.65	pg/L	0.650	19.1
74338-24-2	55-TeCB	U	1.21	pg/L	1.21	19.1
41464-43-1	56-TeCB	J	10.1	pg/L	1.22	19.1
70424-67-8	57-TeCB	U	1.05	pg/L	1.05	19.1
41464-49-7	58-TeCB	U	1.11	pg/L	1.11	19.1
74472-33-6	59-TeCB	CJ	2.49	pg/L	1.34	57.4
33025-41-1	60-TeCB	J	5.18	pg/L	1.17	19.1
33284-53-6	61-TeCB	CJ	33.9	pg/L	1.11	76.5
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	.995	pg/L	0.995	19.1
52663-58-8	64-TeCB	J	10.2	pg/L	1.43	19.1

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944005**	**Date Collected:**	**10/13/2016 07:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 12:19**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1045.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	13.9	pg/L	0.976	19.1
73575-53-8	67-TeCB	U	.976	pg/L	0.976	19.1
73575-52-7	68-TeCB	U	1.03	pg/L	1.03	19.1
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	.995	pg/L	0.995	19.1
74338-23-1	73-TeCB	U	1.51	pg/L	1.51	19.1
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	5.26	pg/L	1.38	19.1
70362-49-1	78-TeCB	U	1.07	pg/L	1.07	19.1
41464-48-6	79-TeCB	U	.918	pg/L	0.918	19.1
33284-52-5	80-TeCB	U	.937	pg/L	0.937	19.1
70362-50-4	81-TeCB	U	1.3	pg/L	1.30	19.1
52663-62-4	82-PeCB	U	5.55	pg/L	5.55	19.1
60145-20-2	83-PeCB	J	2.43	pg/L	1.40	19.1
52663-60-2	84-PeCB	J	9.22	pg/L	1.49	19.1
65510-45-4	85-PeCB	CJ	9.37	pg/L	1.11	57.4
55312-69-1	86-PeCB	CJ	29.3	pg/L	1.21	115
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	4.13	pg/L	4.13	38.3
73575-57-2	89-PeCB	U	1.4	pg/L	1.40	19.1
68194-07-0	90-PeCB	CJ	31.6	pg/L	1.17	57.4
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	5.18	pg/L	1.32	19.1
73575-56-1	93-PeCB	CU	1.32	pg/L	1.32	38.3
73575-55-0	94-PeCB	U	1.57	pg/L	1.57	19.1
38379-99-6	95-PeCB		21.5	pg/L	1.30	19.1
73575-54-9	96-PeCB	U	.459	pg/L	0.459	19.1

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944005**	**Date Collected:**	**10/13/2016 07:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 12:19**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1045.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	1.61	pg/L	1.61	38.3
38380-01-7	99-PeCB	J	10.4	pg/L	1.21	19.1
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	1.21	pg/L	1.21	19.1
56558-16-8	104-PeCB	U	.517	pg/L	0.517	19.1
32598-14-4	105-PeCB		24.3	pg/L	1.68	19.1
70424-69-0	106-PeCB	U	1.34	pg/L	1.34	19.1
70424-68-9	107-PeCB	J	2.56	pg/L	1.13	19.1
70362-41-3	108-PeCB	CU	1.93	pg/L	1.93	38.3
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	57.4	pg/L	1.15	38.3
39635-32-0	111-PeCB	U	1.05	pg/L	1.05	19.1
74472-36-9	112-PeCB	U	1.09	pg/L	1.09	19.1
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	1.66	pg/L	1.66	19.1
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		48.2	pg/L	1.53	19.1
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	.957	pg/L	0.957	19.1
56558-18-0	121-PeCB	U	1.07	pg/L	1.07	19.1
76842-07-4	122-PeCB	U	1.36	pg/L	1.36	19.1
65510-44-3	123-PeCB	U	1.59	pg/L	1.59	19.1
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	2.03	pg/L	2.03	19.1
39635-33-1	127-PeCB	U	1.36	pg/L	1.36	19.1
38380-07-3	128-HxCB	CJ	11.4	pg/L	1.93	38.3

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944005**	**Date Collected:**	**10/13/2016 07:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 12:19**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1045.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	88.1	pg/L	2.07	57.4
52663-66-8	130-HxCB	J	4.88	pg/L	2.24	19.1
61798-70-7	131-HxCB	U	2.6	pg/L	2.60	19.1
38380-05-1	132-HxCB		24.3	pg/L	2.35	19.1
35694-04-3	133-HxCB	U	2.05	pg/L	2.05	19.1
52704-70-8	134-HxCB	J	2.62	pg/L	2.54	19.1
52744-13-5	135-HxCB	CJ	16.4	pg/L	0.899	38.3
38411-22-2	136-HxCB	J	5.15	pg/L	0.650	19.1
35694-06-5	137-HxCB	J	3.44	pg/L	2.14	19.1
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	1.93	pg/L	1.93	38.3
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	13.5	pg/L	2.01	19.1
41411-61-4	142-HxCB	U	2.28	pg/L	2.28	19.1
68194-15-0	143-HxCB	U	2.12	pg/L	2.12	19.1
68194-14-9	144-HxCB	J	2.31	pg/L	0.861	19.1
74472-40-5	145-HxCB	U	.746	pg/L	0.746	19.1
51908-16-8	146-HxCB	J	7.67	pg/L	1.72	19.1
68194-13-8	147-HxCB	C	40.7	pg/L	1.95	38.3
74472-41-6	148-HxCB	U	.861	pg/L	0.861	19.1
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.746	pg/L	0.746	19.1
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.65	pg/L	0.650	19.1
35065-27-1	153-HxCB	C	53.9	pg/L	1.65	38.3
60145-22-4	154-HxCB	U	.765	pg/L	0.765	19.1
33979-03-2	155-HxCB	U	.67	pg/L	0.670	19.1
38380-08-4	156-HxCB	CJ	11.5	pg/L	1.93	38.3
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	9.28	pg/L	1.53	19.1
39635-35-3	159-HxCB	U	1.22	pg/L	1.22	19.1
41411-62-5	160-HxCB	U	1.97	pg/L	1.97	19.1

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944005**	**Date Collected:**	**10/13/2016 07:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 12:19**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1045.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.59	pg/L	1.59	19.1
39635-34-2	162-HxCB	U	1.34	pg/L	1.34	19.1
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	5.18	pg/L	1.63	19.1
74472-46-1	165-HxCB	U	1.74	pg/L	1.74	19.1
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	4.57	pg/L	1.42	19.1
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.86	pg/L	1.86	19.1
35065-30-6	170-HpCB		20.4	pg/L	1.47	19.1
52663-71-5	171-HpCB	CJ	5.74	pg/L	1.36	38.3
52663-74-8	172-HpCB	J	3.98	pg/L	1.40	19.1
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	18.7	pg/L	1.28	19.1
40186-70-7	175-HpCB	U	1.13	pg/L	1.13	19.1
52663-65-7	176-HpCB	J	1.61	pg/L	0.861	19.1
52663-70-4	177-HpCB	J	10.2	pg/L	1.34	19.1
52663-67-9	178-HpCB	J	3.44	pg/L	1.22	19.1
52663-64-6	179-HpCB	J	5.03	pg/L	0.823	19.1
35065-29-3	180-HpCB	C	49.2	pg/L	1.22	38.3
74472-47-2	181-HpCB	U	1.38	pg/L	1.38	19.1
60145-23-5	182-HpCB	U	1.13	pg/L	1.13	19.1
52663-69-1	183-HpCB	CJ	12.5	pg/L	1.22	38.3
74472-48-3	184-HpCB	U	.88	pg/L	0.880	19.1
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.937	pg/L	0.937	19.1
52663-68-0	187-HpCB		21.7	pg/L	1.15	19.1
74487-85-7	188-HpCB	U	.937	pg/L	0.937	19.1
39635-31-9	189-HpCB	J	1.21	pg/L	1.15	19.1
41411-64-7	190-HpCB	J	3.81	pg/L	1.19	19.1
74472-50-7	191-HpCB	U	1.07	pg/L	1.07	19.1
74472-51-8	192-HpCB	U	1.26	pg/L	1.26	19.1

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944005**	**Date Collected:**	**10/13/2016 07:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 12:19**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1045.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	11.6	pg/L	1.55	19.1
52663-78-2	195-OcCB	J	3.60	pg/L	1.59	19.1
42740-50-1	196-OcCB	J	5.07	pg/L	1.21	19.1
33091-17-7	197-OcCB	CJ	1.74	pg/L	0.880	38.3
68194-17-2	198-OcCB	CJ	12.3	pg/L	1.26	38.3
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	J	1.13	pg/L	0.823	19.1
2136-99-4	202-OcCB	J	1.76	pg/L	0.995	19.1
52663-76-0	203-OcCB	J	8.13	pg/L	1.30	19.1
74472-52-9	204-OcCB	U	.842	pg/L	0.842	19.1
74472-53-0	205-OcCB	U	1.49	pg/L	1.49	19.1
40186-72-9	206-NoCB	J	5.28	pg/L	1.89	19.1
52663-79-3	207-NoCB	U	1.17	pg/L	1.17	19.1
52663-77-1	208-NoCB	U	1.42	pg/L	1.42	19.1
2051-24-3	209-DeCB	J	3.19	pg/L	1.49	19.1
27323-18-8	Total Mono PCBs	J	7.19	pg/L	6.37	19.1
25512-42-9	Total Di PCBs		96.3	pg/L	6.37	19.1
25323-68-6	Total Tri PCBs		96.9	pg/L	6.37	19.1
26914-33-0	Total Tetra PCBs		163	pg/L	6.37	19.1
25429-29-2	Total Penta PCBs		252	pg/L	6.37	19.1
26601-64-9	Total Hexa PCBs		305	pg/L	6.37	19.1
28655-71-2	Total Hepta PCBs		157	pg/L	6.37	19.1
55722-26-4	Total Octa PCBs		45.3	pg/L	6.37	19.1
53742-07-7	Total Nona PCBs	J	5.28	pg/L	6.37	19.1
2051-24-3	Total Deca PCB	J	3.19	pg/L	6.37	19.1
1336-36-3	Total PCB Congeners		1130	pg/L	6.37	19.1

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		932	1910	pg/L	48.7	(15%-150%)
13C-3-MoCB		986	1910	pg/L	51.5	(15%-150%)
13C-4-DiCB		959	1910	pg/L	50.1	(25%-150%)
13C-15-DiCB		2000	1910	pg/L	104	(25%-150%)
13C-19-TrCB		1330	1910	pg/L	69.6	(25%-150%)
13C-37-TrCB		1930	1910	pg/L	101	(25%-150%)
13C-54-TeCB		1230	1910	pg/L	64.2	(25%-150%)
13C-77-TeCB		2380	1910	pg/L	124	(25%-150%)
13C-81-TeCB		2420	1910	pg/L	126	(25%-150%)
13C-104-PeCB		1470	1910	pg/L	76.8	(25%-150%)
13C-105-PeCB		1930	1910	pg/L	101	(25%-150%)
13C-114-PeCB		1940	1910	pg/L	102	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944005**	**Date Collected:**	**10/13/2016 07:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 12:19**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1045.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1910	1910	pg/L	99.6	(25%-150%)
13C-123-PeCB		1990	1910	pg/L	104	(25%-150%)
13C-126-PeCB		1860	1910	pg/L	97.0	(25%-150%)
13C-155-HxCB		1600	1910	pg/L	83.6	(25%-150%)
13C-156-HxCB	C	3750	3830	pg/L	98.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1960	1910	pg/L	102	(25%-150%)
13C-169-HxCB		1780	1910	pg/L	93.0	(25%-150%)
13C-188-HpCB		1540	1910	pg/L	80.3	(25%-150%)
13C-189-HpCB		1800	1910	pg/L	94.3	(25%-150%)
13C-202-OcCB		1730	1910	pg/L	90.3	(25%-150%)
13C-205-OcCB		1890	1910	pg/L	98.7	(25%-150%)
13C-206-NoCB		1730	1910	pg/L	90.6	(25%-150%)
13C-208-NoCB		1660	1910	pg/L	86.7	(25%-150%)
13C-209-DeCB		1930	1910	pg/L	101	(25%-150%)
13C-28-TrCB		1260	1910	pg/L	66.1	(30%-135%)
13C-111-PeCB		1700	1910	pg/L	88.7	(30%-135%)
13C-178-HpCB		1620	1910	pg/L	84.5	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944006**	**Date Collected:**	**10/13/2016 06:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 13:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1041.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	2.44	pg/L	0.960	19.2
2051-61-8	2-MoCB	J	1.57	pg/L	0.787	19.2
2051-62-9	3-MoCB	J	2.52	pg/L	1.02	19.2
13029-08-8	4-DiCB	J	16.1	pg/L	2.15	19.2
16605-91-7	5-DiCB	U	1.52	pg/L	1.52	19.2
25569-80-6	6-DiCB	J	3.73	pg/L	1.19	19.2
33284-50-3	7-DiCB	U	1.31	pg/L	1.31	19.2
34883-43-7	8-DiCB	J	16.8	pg/L	1.09	19.2
34883-39-1	9-DiCB	J	2.54	pg/L	1.34	19.2
33146-45-1	10-DiCB	U	1.27	pg/L	1.27	19.2
2050-67-1	11-DiCB	J	67.9	pg/L	1.31	96.0
2974-92-7	12-DiCB	CJ	5.47	pg/L	1.33	38.4
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	1.27	pg/L	1.27	19.2
2050-68-2	15-DiCB		35.8	pg/L	1.67	19.2
38444-78-9	16-TrCB		22.2	pg/L	1.81	19.2
37680-66-3	17-TrCB		21.7	pg/L	1.59	19.2
37680-65-2	18-TrCB	C	47.9	pg/L	1.31	38.4
38444-73-4	19-TrCB	J	11.1	pg/L	1.88	19.2
38444-84-7	20-TrCB	C	74.4	pg/L	1.08	38.4
55702-46-0	21-TrCB	CJ	36.8	pg/L	1.06	38.4
38444-85-8	22-TrCB		33.0	pg/L	1.17	19.2
55720-44-0	23-TrCB	U	1.15	pg/L	1.15	19.2
55702-45-9	24-TrCB	J	2.36	pg/L	1.27	19.2
55712-37-3	25-TrCB	J	4.42	pg/L	1.04	19.2
38444-81-4	26-TrCB	CJ	10.5	pg/L	0.999	38.4
38444-76-7	27-TrCB	J	5.28	pg/L	1.09	19.2
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		54.7	pg/L	0.960	19.2
38444-77-8	32-TrCB	J	15.6	pg/L	1.04	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944006**	**Date Collected:**	**10/13/2016 06:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 13:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1041.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.08	pg/L	1.08	19.2
37680-69-6	35-TrCB	J	3.96	pg/L	1.79	19.2
38444-87-0	36-TrCB	U	1.69	pg/L	1.69	19.2
38444-90-5	37-TrCB		56.5	pg/L	2.23	19.2
53555-66-1	38-TrCB	U	1.63	pg/L	1.63	19.2
38444-88-1	39-TrCB	U	1.71	pg/L	1.71	19.2
38444-93-8	40-TeCB	C	51.7	pg/L	1.81	38.4
52663-59-9	41-TeCB	J	14.2	pg/L	1.84	19.2
36559-22-5	42-TeCB		29.0	pg/L	2.04	19.2
70362-46-8	43-TeCB	J	4.47	pg/L	2.29	19.2
41464-39-5	44-TeCB	C	105	pg/L	1.75	57.6
70362-45-7	45-TeCB	CJ	21.1	pg/L	1.17	38.4
41464-47-5	46-TeCB	J	4.28	pg/L	1.17	19.2
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	18.2	pg/L	1.82	19.2
41464-40-8	49-TeCB	C	45.6	pg/L	1.65	38.4
62796-65-0	50-TeCB	CJ	8.22	pg/L	1.08	38.4
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		86.4	pg/L	1.65	19.2
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	.922	pg/L	0.922	19.2
74338-24-2	55-TeCB	J	3.76	pg/L	2.25	19.2
41464-43-1	56-TeCB		66.2	pg/L	2.29	19.2
70424-67-8	57-TeCB	U	1.94	pg/L	1.94	19.2
41464-49-7	58-TeCB	U	2.05	pg/L	2.05	19.2
74472-33-6	59-TeCB	CJ	9.33	pg/L	1.34	57.6
33025-41-1	60-TeCB		34.1	pg/L	2.17	19.2
33284-53-6	61-TeCB	C	203	pg/L	2.07	76.8
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	J	3.40	pg/L	1.84	19.2
52663-58-8	64-TeCB		52.4	pg/L	1.44	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944006**	**Date Collected:**	**10/13/2016 06:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 13:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1041.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		89.2	pg/L	1.82	19.2
73575-53-8	67-TeCB	J	3.86	pg/L	1.79	19.2
73575-52-7	68-TeCB	U	1.92	pg/L	1.92	19.2
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.84	pg/L	1.84	19.2
74338-23-1	73-TeCB	J	3.23	pg/L	1.52	19.2
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB		52.7	pg/L	2.55	19.2
70362-49-1	78-TeCB	U	1.98	pg/L	1.98	19.2
41464-48-6	79-TeCB	J	3.59	pg/L	1.71	19.2
33284-52-5	80-TeCB	U	1.73	pg/L	1.73	19.2
70362-50-4	81-TeCB	U	2.36	pg/L	2.36	19.2
52663-62-4	82-PeCB		41.0	pg/L	3.67	19.2
60145-20-2	83-PeCB	J	17.6	pg/L	3.40	19.2
52663-60-2	84-PeCB		51.6	pg/L	3.63	19.2
65510-45-4	85-PeCB	C	61.0	pg/L	2.71	57.6
55312-69-1	86-PeCB	C	199	pg/L	2.96	115
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CJ	23.6	pg/L	3.34	38.4
73575-57-2	89-PeCB	U	3.42	pg/L	3.42	19.2
68194-07-0	90-PeCB	C	325	pg/L	2.86	57.6
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB		40.2	pg/L	3.25	19.2
73575-56-1	93-PeCB	CU	3.23	pg/L	3.23	38.4
73575-55-0	94-PeCB	U	3.84	pg/L	3.84	19.2
38379-99-6	95-PeCB		167	pg/L	3.19	19.2
73575-54-9	96-PeCB	J	1.11	pg/L	0.538	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944006**	**Date Collected:**	**10/13/2016 06:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 13:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1041.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CJ	6.41	pg/L	3.94	38.4
38380-01-7	99-PeCB		80.3	pg/L	2.96	19.2
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	2.94	pg/L	2.94	19.2
56558-16-8	104-PeCB	U	.595	pg/L	0.595	19.2
32598-14-4	105-PeCB		188	pg/L	3.42	19.2
70424-69-0	106-PeCB	U	2.69	pg/L	2.69	19.2
70424-68-9	107-PeCB		21.0	pg/L	2.27	19.2
70362-41-3	108-PeCB	CJ	14.5	pg/L	2.67	38.4
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	430	pg/L	2.80	38.4
39635-32-0	111-PeCB	U	2.57	pg/L	2.57	19.2
74472-36-9	112-PeCB	U	2.67	pg/L	2.67	19.2
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	J	7.87	pg/L	3.38	19.2
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		384	pg/L	3.09	19.2
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	2.32	pg/L	2.32	19.2
56558-18-0	121-PeCB	U	2.63	pg/L	2.63	19.2
76842-07-4	122-PeCB	J	5.05	pg/L	2.75	19.2
65510-44-3	123-PeCB	J	5.76	pg/L	3.23	19.2
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	J	16.4	pg/L	3.98	19.2
39635-33-1	127-PeCB	U	2.75	pg/L	2.75	19.2
38380-07-3	128-HxCB	C	123	pg/L	3.61	38.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944006**	**Date Collected:**	**10/13/2016 06:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 13:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1041.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	1580	pg/L	3.88	57.6
52663-66-8	130-HxCB		43.9	pg/L	4.19	19.2
61798-70-7	131-HxCB	J	7.24	pg/L	4.88	19.2
38380-05-1	132-HxCB		344	pg/L	4.40	19.2
35694-04-3	133-HxCB	J	10.8	pg/L	3.82	19.2
52704-70-8	134-HxCB		36.5	pg/L	4.78	19.2
52744-13-5	135-HxCB	C	583	pg/L	1.04	38.4
38411-22-2	136-HxCB		125	pg/L	0.749	19.2
35694-06-5	137-HxCB		24.8	pg/L	4.01	19.2
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CJ	7.51	pg/L	3.63	38.4
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		358	pg/L	3.76	19.2
41411-61-4	142-HxCB	U	4.26	pg/L	4.26	19.2
68194-15-0	143-HxCB	U	3.99	pg/L	3.99	19.2
68194-14-9	144-HxCB		70.4	pg/L	0.979	19.2
74472-40-5	145-HxCB	U	.845	pg/L	0.845	19.2
51908-16-8	146-HxCB		155	pg/L	3.21	19.2
68194-13-8	147-HxCB	C	1230	pg/L	3.65	38.4
74472-41-6	148-HxCB	U	1.02	pg/L	1.02	19.2
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	J	1.44	pg/L	0.845	19.2
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.73	pg/L	0.730	19.2
35065-27-1	153-HxCB	C	1760	pg/L	3.07	38.4
60145-22-4	154-HxCB	J	6.16	pg/L	0.864	19.2
33979-03-2	155-HxCB	U	.826	pg/L	0.826	19.2
38380-08-4	156-HxCB	C	125	pg/L	3.07	38.4
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB		124	pg/L	2.86	19.2
39635-35-3	159-HxCB	U	1.94	pg/L	1.94	19.2
41411-62-5	160-HxCB	U	3.71	pg/L	3.71	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944006**	**Date Collected:**	**10/13/2016 06:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 13:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1041.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	2.98	pg/L	2.98	19.2
39635-34-2	162-HxCB	U	2.11	pg/L	2.11	19.2
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB		90.8	pg/L	3.05	19.2
74472-46-1	165-HxCB	U	3.28	pg/L	3.28	19.2
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB		45.3	pg/L	2.19	19.2
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	J	14.9	pg/L	2.73	19.2
35065-30-6	170-HpCB		977	pg/L	2.46	19.2
52663-71-5	171-HpCB	C	274	pg/L	2.27	38.4
52663-74-8	172-HpCB		192	pg/L	2.32	19.2
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		1460	pg/L	2.15	19.2
40186-70-7	175-HpCB		47.7	pg/L	1.19	19.2
52663-65-7	176-HpCB		143	pg/L	0.903	19.2
52663-70-4	177-HpCB		705	pg/L	2.23	19.2
52663-67-9	178-HpCB		287	pg/L	1.29	19.2
52663-64-6	179-HpCB		534	pg/L	0.864	19.2
35065-29-3	180-HpCB	C	3730	pg/L	2.04	38.4
74472-47-2	181-HpCB	U	2.3	pg/L	2.30	19.2
60145-23-5	182-HpCB	J	2.80	pg/L	1.19	19.2
52663-69-1	183-HpCB	C	1090	pg/L	2.05	38.4
74472-48-3	184-HpCB	U	.941	pg/L	0.941	19.2
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.999	pg/L	0.999	19.2
52663-68-0	187-HpCB		2140	pg/L	1.21	19.2
74487-85-7	188-HpCB	J	2.38	pg/L	1.08	19.2
39635-31-9	189-HpCB		28.5	pg/L	2.92	19.2
41411-64-7	190-HpCB		256	pg/L	1.96	19.2
74472-50-7	191-HpCB		39.0	pg/L	1.81	19.2
74472-51-8	192-HpCB	U	2.11	pg/L	2.11	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944006**	**Date Collected:**	**10/13/2016 06:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 13:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1041.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		1210	pg/L	1.86	19.2
52663-78-2	195-OcCB		430	pg/L	1.90	19.2
42740-50-1	196-OcCB		619	pg/L	0.979	19.2
33091-17-7	197-OcCB	C	215	pg/L	0.711	38.4
68194-17-2	198-OcCB	C	1550	pg/L	1.04	38.4
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB		160	pg/L	0.672	19.2
2136-99-4	202-OcCB		273	pg/L	0.826	19.2
52663-76-0	203-OcCB		981	pg/L	1.06	19.2
74472-52-9	204-OcCB	U	.691	pg/L	0.691	19.2
74472-53-0	205-OcCB		61.5	pg/L	1.77	19.2
40186-72-9	206-NoCB		520	pg/L	2.02	19.2
52663-79-3	207-NoCB		61.3	pg/L	1.17	19.2
52663-77-1	208-NoCB		105	pg/L	1.34	19.2
2051-24-3	209-DeCB		23.6	pg/L	1.88	19.2
27323-18-8	Total Mono PCBs	J	6.53	pg/L	6.40	19.2
25512-42-9	Total Di PCBs		148	pg/L	6.40	19.2
25323-68-6	Total Tri PCBs		400	pg/L	6.40	19.2
26914-33-0	Total Tetra PCBs		913	pg/L	6.40	19.2
25429-29-2	Total Penta PCBs		2090	pg/L	6.40	19.2
26601-64-9	Total Hexa PCBs		6870	pg/L	6.40	19.2
28655-71-2	Total Hepta PCBs		11900	pg/L	6.40	19.2
55722-26-4	Total Octa PCBs		5490	pg/L	6.40	19.2
53742-07-7	Total Nona PCBs		687	pg/L	6.40	19.2
2051-24-3	Total Deca PCB		23.6	pg/L	6.40	19.2
1336-36-3	Total PCB Congeners		28500	pg/L	6.40	19.2

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-1-MoCB		1100	1920	pg/L	57.4		(15%-150%)
13C-3-MoCB		1200	1920	pg/L	62.5		(15%-150%)
13C-4-DiCB		1150	1920	pg/L	59.8		(25%-150%)
13C-15-DiCB		2240	1920	pg/L	117		(25%-150%)
13C-19-TrCB		1570	1920	pg/L	81.6		(25%-150%)
13C-37-TrCB		2330	1920	pg/L	121		(25%-150%)
13C-54-TeCB		1430	1920	pg/L	74.6		(25%-150%)
13C-77-TeCB		2860	1920	pg/L	149		(25%-150%)
13C-81-TeCB		2900	1920	pg/L	151	*	(25%-150%)
13C-104-PeCB		1760	1920	pg/L	91.8		(25%-150%)
13C-105-PeCB		2330	1920	pg/L	122		(25%-150%)
13C-114-PeCB		2340	1920	pg/L	122		(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944006**	**Date Collected:**	**10/13/2016 06:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 13:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1041.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		2340	1920	pg/L	122	(25%-150%)
13C-123-PeCB		2400	1920	pg/L	125	(25%-150%)
13C-126-PeCB		2300	1920	pg/L	120	(25%-150%)
13C-155-HxCB		1990	1920	pg/L	104	(25%-150%)
13C-156-HxCB	C	4690	3840	pg/L	122	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		2460	1920	pg/L	128	(25%-150%)
13C-169-HxCB		2280	1920	pg/L	119	(25%-150%)
13C-188-HpCB		1820	1920	pg/L	95.0	(25%-150%)
13C-189-HpCB		2230	1920	pg/L	116	(25%-150%)
13C-202-OcCB		2140	1920	pg/L	112	(25%-150%)
13C-205-OcCB		2350	1920	pg/L	122	(25%-150%)
13C-206-NoCB		2040	1920	pg/L	106	(25%-150%)
13C-208-NoCB		2040	1920	pg/L	106	(25%-150%)
13C-209-DeCB		2300	1920	pg/L	120	(25%-150%)
13C-28-TrCB		1490	1920	pg/L	77.5	(30%-135%)
13C-111-PeCB		2030	1920	pg/L	106	(30%-135%)
13C-178-HpCB		1960	1920	pg/L	102	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944007**	**Date Collected:**	**10/13/2016 06:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 14:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1047.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	2.88	pg/L	0.744	19.1
2051-61-8	2-MoCB	U	.611	pg/L	0.611	19.1
2051-62-9	3-MoCB	J	2.18	pg/L	0.783	19.1
13029-08-8	4-DiCB	J	9.31	pg/L	1.60	19.1
16605-91-7	5-DiCB	U	1.22	pg/L	1.22	19.1
25569-80-6	6-DiCB	J	2.60	pg/L	0.954	19.1
33284-50-3	7-DiCB	U	1.05	pg/L	1.05	19.1
34883-43-7	8-DiCB	J	10.5	pg/L	0.878	19.1
34883-39-1	9-DiCB	J	1.22	pg/L	1.09	19.1
33146-45-1	10-DiCB	U	.897	pg/L	0.897	19.1
2050-67-1	11-DiCB	J	46.6	pg/L	1.05	95.4
2974-92-7	12-DiCB	CJ	4.87	pg/L	1.07	38.2
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	1.01	pg/L	1.01	19.1
2050-68-2	15-DiCB	J	10.3	pg/L	1.32	19.1
38444-78-9	16-TrCB	J	5.25	pg/L	1.39	19.1
37680-66-3	17-TrCB	J	5.10	pg/L	1.24	19.1
37680-65-2	18-TrCB	CJ	12.2	pg/L	1.01	38.2
38444-73-4	19-TrCB	J	3.02	pg/L	1.57	19.1
38444-84-7	20-TrCB	CJ	19.5	pg/L	0.840	38.2
55702-46-0	21-TrCB	CJ	10.3	pg/L	0.821	38.2
38444-85-8	22-TrCB	J	8.82	pg/L	0.897	19.1
55720-44-0	23-TrCB	U	.878	pg/L	0.878	19.1
55702-45-9	24-TrCB	U	.973	pg/L	0.973	19.1
55712-37-3	25-TrCB	U	1.49	pg/L	1.49	19.1
38444-81-4	26-TrCB	CJ	3.17	pg/L	0.783	38.2
38444-76-7	27-TrCB	J	1.03	pg/L	0.859	19.1
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	J	17.3	pg/L	0.744	19.1
38444-77-8	32-TrCB	J	3.28	pg/L	0.802	19.1

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944007**	**Date Collected:**	**10/13/2016 06:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 14:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1047.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	.821	pg/L	0.821	19.1
37680-69-6	35-TrCB	J	1.91	pg/L	1.34	19.1
38444-87-0	36-TrCB	U	1.24	pg/L	1.24	19.1
38444-90-5	37-TrCB	J	10.6	pg/L	1.62	19.1
53555-66-1	38-TrCB	U	1.2	pg/L	1.20	19.1
38444-88-1	39-TrCB	U	1.28	pg/L	1.28	19.1
38444-93-8	40-TeCB	CJ	8.53	pg/L	1.36	38.2
52663-59-9	41-TeCB	J	2.86	pg/L	1.39	19.1
36559-22-5	42-TeCB	J	4.68	pg/L	1.55	19.1
70362-46-8	43-TeCB	U	1.72	pg/L	1.72	19.1
41464-39-5	44-TeCB	CJ	19.8	pg/L	1.32	57.3
70362-45-7	45-TeCB	CJ	3.15	pg/L	0.668	38.2
41464-47-5	46-TeCB	J	1.15	pg/L	0.668	19.1
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	3.38	pg/L	1.37	19.1
41464-40-8	49-TeCB	CJ	9.43	pg/L	1.24	38.2
62796-65-0	50-TeCB	CJ	2.08	pg/L	0.611	38.2
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	17.2	pg/L	1.24	19.1
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	.573	pg/L	0.573	19.1
74338-24-2	55-TeCB	U	.84	pg/L	0.840	19.1
41464-43-1	56-TeCB	J	8.11	pg/L	0.859	19.1
70424-67-8	57-TeCB	U	.725	pg/L	0.725	19.1
41464-49-7	58-TeCB	U	.763	pg/L	0.763	19.1
74472-33-6	59-TeCB	CJ	1.72	pg/L	1.01	57.3
33025-41-1	60-TeCB	J	4.33	pg/L	0.821	19.1
33284-53-6	61-TeCB	CJ	27.6	pg/L	0.783	76.3
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	.687	pg/L	0.687	19.1
52663-58-8	64-TeCB	J	9.33	pg/L	1.09	19.1

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944007**	**Date Collected:**	**10/13/2016 06:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 14:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1047.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	12.2	pg/L	0.687	19.1
73575-53-8	67-TeCB	U	.668	pg/L	0.668	19.1
73575-52-7	68-TeCB	U	.725	pg/L	0.725	19.1
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	.687	pg/L	0.687	19.1
74338-23-1	73-TeCB	U	1.15	pg/L	1.15	19.1
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	3.03	pg/L	0.916	19.1
70362-49-1	78-TeCB	U	.744	pg/L	0.744	19.1
41464-48-6	79-TeCB	U	.63	pg/L	0.630	19.1
33284-52-5	80-TeCB	U	.649	pg/L	0.649	19.1
70362-50-4	81-TeCB	U	.878	pg/L	0.878	19.1
52663-62-4	82-PeCB	J	2.08	pg/L	1.34	19.1
60145-20-2	83-PeCB	J	2.56	pg/L	1.24	19.1
52663-60-2	84-PeCB	J	8.55	pg/L	1.32	19.1
65510-45-4	85-PeCB	CJ	4.83	pg/L	0.992	57.3
55312-69-1	86-PeCB	CJ	15.8	pg/L	1.09	115
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CJ	4.66	pg/L	1.22	38.2
73575-57-2	89-PeCB	U	1.24	pg/L	1.24	19.1
68194-07-0	90-PeCB	CJ	21.3	pg/L	1.05	57.3
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	3.65	pg/L	1.18	19.1
73575-56-1	93-PeCB	CU	1.18	pg/L	1.18	38.2
73575-55-0	94-PeCB	U	1.39	pg/L	1.39	19.1
38379-99-6	95-PeCB		37.7	pg/L	1.16	19.1
73575-54-9	96-PeCB	U	.324	pg/L	0.324	19.1

Comments:

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J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944007**	**Date Collected:**	**10/13/2016 06:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 14:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1047.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	1.43	pg/L	1.43	38.2
38380-01-7	99-PeCB	J	6.60	pg/L	1.09	19.1
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	1.07	pg/L	1.07	19.1
56558-16-8	104-PeCB	U	.382	pg/L	0.382	19.1
32598-14-4	105-PeCB	J	11.4	pg/L	1.32	19.1
70424-69-0	106-PeCB	U	1.05	pg/L	1.05	19.1
70424-68-9	107-PeCB	J	1.22	pg/L	0.897	19.1
70362-41-3	108-PeCB	CU	1.05	pg/L	1.05	38.2
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	35.0	pg/L	1.03	38.2
39635-32-0	111-PeCB	U	.935	pg/L	0.935	19.1
74472-36-9	112-PeCB	U	.973	pg/L	0.973	19.1
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	1.3	pg/L	1.30	19.1
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		22.0	pg/L	1.16	19.1
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	.84	pg/L	0.840	19.1
56558-18-0	121-PeCB	U	.954	pg/L	0.954	19.1
76842-07-4	122-PeCB	U	1.09	pg/L	1.09	19.1
65510-44-3	123-PeCB	U	1.24	pg/L	1.24	19.1
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	1.51	pg/L	1.51	19.1
39635-33-1	127-PeCB	U	1.09	pg/L	1.09	19.1
38380-07-3	128-HxCB	CJ	6.22	pg/L	1.22	38.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944007**	**Date Collected:**	**10/13/2016 06:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 14:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1047.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	53.0	pg/L	1.32	57.3
52663-66-8	130-HxCB	J	3.17	pg/L	1.43	19.1
61798-70-7	131-HxCB	U	1.66	pg/L	1.66	19.1
38380-05-1	132-HxCB	J	18.9	pg/L	1.49	19.1
35694-04-3	133-HxCB	U	1.3	pg/L	1.30	19.1
52704-70-8	134-HxCB	U	2.65	pg/L	2.65	19.1
52744-13-5	135-HxCB	CJ	23.8	pg/L	0.515	38.2
38411-22-2	136-HxCB	J	12.1	pg/L	0.363	19.1
35694-06-5	137-HxCB	J	2.29	pg/L	1.37	19.1
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	1.24	pg/L	1.24	38.2
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	8.40	pg/L	1.28	19.1
41411-61-4	142-HxCB	U	1.45	pg/L	1.45	19.1
68194-15-0	143-HxCB	U	1.36	pg/L	1.36	19.1
68194-14-9	144-HxCB	J	2.98	pg/L	0.477	19.1
74472-40-5	145-HxCB	U	.42	pg/L	0.420	19.1
51908-16-8	146-HxCB	J	4.91	pg/L	1.09	19.1
68194-13-8	147-HxCB	C	42.4	pg/L	1.24	38.2
74472-41-6	148-HxCB	U	.496	pg/L	0.496	19.1
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.42	pg/L	0.420	19.1
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.363	pg/L	0.363	19.1
35065-27-1	153-HxCB	CJ	34.3	pg/L	1.05	38.2
60145-22-4	154-HxCB	J	0.687	pg/L	0.439	19.1
33979-03-2	155-HxCB	U	.401	pg/L	0.401	19.1
38380-08-4	156-HxCB	CJ	5.69	pg/L	1.32	38.2
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	4.24	pg/L	0.973	19.1
39635-35-3	159-HxCB	U	.84	pg/L	0.840	19.1
41411-62-5	160-HxCB	U	1.26	pg/L	1.26	19.1

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944007**	**Date Collected:**	**10/13/2016 06:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 14:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1047.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.01	pg/L	1.01	19.1
39635-34-2	162-HxCB	U	.916	pg/L	0.916	19.1
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	3.23	pg/L	1.05	19.1
74472-46-1	165-HxCB	U	1.11	pg/L	1.11	19.1
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	1.89	pg/L	0.973	19.1
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.13	pg/L	1.13	19.1
35065-30-6	170-HpCB	J	14.4	pg/L	1.28	19.1
52663-71-5	171-HpCB	CJ	4.37	pg/L	1.18	38.2
52663-74-8	172-HpCB	J	2.60	pg/L	1.20	19.1
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	16.0	pg/L	1.11	19.1
40186-70-7	175-HpCB	U	.897	pg/L	0.897	19.1
52663-65-7	176-HpCB	J	1.87	pg/L	0.668	19.1
52663-70-4	177-HpCB	J	8.44	pg/L	1.16	19.1
52663-67-9	178-HpCB	J	3.17	pg/L	0.973	19.1
52663-64-6	179-HpCB	J	7.67	pg/L	0.649	19.1
35065-29-3	180-HpCB	CJ	33.1	pg/L	1.05	38.2
74472-47-2	181-HpCB	U	1.18	pg/L	1.18	19.1
60145-23-5	182-HpCB	U	.897	pg/L	0.897	19.1
52663-69-1	183-HpCB	CJ	10.8	pg/L	1.07	38.2
74472-48-3	184-HpCB	U	.706	pg/L	0.706	19.1
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.744	pg/L	0.744	19.1
52663-68-0	187-HpCB		21.8	pg/L	0.897	19.1
74487-85-7	188-HpCB	U	.802	pg/L	0.802	19.1
39635-31-9	189-HpCB	J	1.07	pg/L	0.725	19.1
41411-64-7	190-HpCB	J	3.03	pg/L	1.01	19.1
74472-50-7	191-HpCB	U	.935	pg/L	0.935	19.1
74472-51-8	192-HpCB	U	1.11	pg/L	1.11	19.1

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944007**	**Date Collected:**	**10/13/2016 06:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 14:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1047.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	8.72	pg/L	1.18	19.1
52663-78-2	195-OcCB	J	3.80	pg/L	1.20	19.1
42740-50-1	196-OcCB	J	3.55	pg/L	0.878	19.1
33091-17-7	197-OcCB	CJ	1.57	pg/L	0.649	38.2
68194-17-2	198-OcCB	CJ	9.81	pg/L	0.916	38.2
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	J	0.954	pg/L	0.611	19.1
2136-99-4	202-OcCB	J	2.35	pg/L	0.763	19.1
52663-76-0	203-OcCB	J	5.34	pg/L	0.954	19.1
74472-52-9	204-OcCB	U	.611	pg/L	0.611	19.1
74472-53-0	205-OcCB	U	1.05	pg/L	1.05	19.1
40186-72-9	206-NoCB	J	4.31	pg/L	1.22	19.1
52663-79-3	207-NoCB	U	.744	pg/L	0.744	19.1
52663-77-1	208-NoCB	J	1.13	pg/L	0.897	19.1
2051-24-3	209-DeCB	J	2.40	pg/L	0.897	19.1
27323-18-8	Total Mono PCBs	J	5.06	pg/L	6.36	19.1
25512-42-9	Total Di PCBs		85.4	pg/L	6.36	19.1
25323-68-6	Total Tri PCBs		101	pg/L	6.36	19.1
26914-33-0	Total Tetra PCBs		139	pg/L	6.36	19.1
25429-29-2	Total Penta PCBs		177	pg/L	6.36	19.1
26601-64-9	Total Hexa PCBs		228	pg/L	6.36	19.1
28655-71-2	Total Hepta PCBs		128	pg/L	6.36	19.1
55722-26-4	Total Octa PCBs		36.1	pg/L	6.36	19.1
53742-07-7	Total Nona PCBs	J	5.44	pg/L	6.36	19.1
2051-24-3	Total Deca PCB	J	2.40	pg/L	6.36	19.1
1336-36-3	Total PCB Congeners		908	pg/L	6.36	19.1

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		903	1910	pg/L	47.3	(15%-150%)
13C-3-MoCB		1010	1910	pg/L	52.8	(15%-150%)
13C-4-DiCB		1020	1910	pg/L	53.2	(25%-150%)
13C-15-DiCB		2300	1910	pg/L	120	(25%-150%)
13C-19-TrCB		1450	1910	pg/L	75.9	(25%-150%)
13C-37-TrCB		2000	1910	pg/L	105	(25%-150%)
13C-54-TeCB		1150	1910	pg/L	60.2	(25%-150%)
13C-77-TeCB		2640	1910	pg/L	138	(25%-150%)
13C-81-TeCB		2660	1910	pg/L	140	(25%-150%)
13C-104-PeCB		1410	1910	pg/L	73.7	(25%-150%)
13C-105-PeCB		2090	1910	pg/L	109	(25%-150%)
13C-114-PeCB		2060	1910	pg/L	108	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944007**	**Date Collected:**	**10/13/2016 06:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 14:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1047.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		2030	1910	pg/L	106	(25%-150%)
13C-123-PeCB		2100	1910	pg/L	110	(25%-150%)
13C-126-PeCB		2100	1910	pg/L	110	(25%-150%)
13C-155-HxCB		1540	1910	pg/L	80.8	(25%-150%)
13C-156-HxCB	C	3930	3820	pg/L	103	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		2000	1910	pg/L	105	(25%-150%)
13C-169-HxCB		1970	1910	pg/L	103	(25%-150%)
13C-188-HpCB		1430	1910	pg/L	74.7	(25%-150%)
13C-189-HpCB		1830	1910	pg/L	95.6	(25%-150%)
13C-202-OcCB		1630	1910	pg/L	85.3	(25%-150%)
13C-205-OcCB		1960	1910	pg/L	103	(25%-150%)
13C-206-NoCB		1690	1910	pg/L	88.4	(25%-150%)
13C-208-NoCB		1640	1910	pg/L	86.2	(25%-150%)
13C-209-DeCB		1940	1910	pg/L	102	(25%-150%)
13C-28-TrCB		1100	1910	pg/L	57.8	(30%-135%)
13C-111-PeCB		1610	1910	pg/L	84.5	(30%-135%)
13C-178-HpCB		1510	1910	pg/L	78.9	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944008**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 15:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**899.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	6.31	pg/L	0.934	22.2
2051-61-8	2-MoCB	J	2.05	pg/L	0.778	22.2
2051-62-9	3-MoCB	J	2.82	pg/L	1.02	22.2
13029-08-8	4-DiCB	J	17.2	pg/L	2.45	22.2
16605-91-7	5-DiCB	U	1.76	pg/L	1.76	22.2
25569-80-6	6-DiCB	J	4.94	pg/L	1.38	22.2
33284-50-3	7-DiCB	J	2.09	pg/L	1.51	22.2
34883-43-7	8-DiCB	J	18.7	pg/L	1.25	22.2
34883-39-1	9-DiCB	J	2.05	pg/L	1.56	22.2
33146-45-1	10-DiCB	U	1.49	pg/L	1.49	22.2
2050-67-1	11-DiCB	J	54.2	pg/L	1.51	111
2974-92-7	12-DiCB	CJ	5.56	pg/L	1.53	44.5
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	1.47	pg/L	1.47	22.2
2050-68-2	15-DiCB		35.6	pg/L	1.96	22.2
38444-78-9	16-TrCB	J	17.7	pg/L	1.87	22.2
37680-66-3	17-TrCB	J	15.6	pg/L	1.67	22.2
37680-65-2	18-TrCB	CJ	32.6	pg/L	1.36	44.5
38444-73-4	19-TrCB	J	6.83	pg/L	1.91	22.2
38444-84-7	20-TrCB	C	74.0	pg/L	1.11	44.5
55702-46-0	21-TrCB	CJ	32.2	pg/L	1.11	44.5
38444-85-8	22-TrCB		33.7	pg/L	1.20	22.2
55720-44-0	23-TrCB	U	1.2	pg/L	1.20	22.2
55702-45-9	24-TrCB	U	1.31	pg/L	1.31	22.2
55712-37-3	25-TrCB	J	4.54	pg/L	1.07	22.2
38444-81-4	26-TrCB	CJ	9.07	pg/L	1.05	44.5
38444-76-7	27-TrCB	J	3.40	pg/L	1.13	22.2
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		46.4	pg/L	1.00	22.2
38444-77-8	32-TrCB	J	11.1	pg/L	1.07	22.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944008**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 15:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**899.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.11	pg/L	1.11	22.2
37680-69-6	35-TrCB	J	3.38	pg/L	1.82	22.2
38444-87-0	36-TrCB	U	1.71	pg/L	1.71	22.2
38444-90-5	37-TrCB		72.6	pg/L	2.29	22.2
53555-66-1	38-TrCB	U	1.65	pg/L	1.65	22.2
38444-88-1	39-TrCB	U	1.73	pg/L	1.73	22.2
38444-93-8	40-TeCB	C	80.2	pg/L	2.45	44.5
52663-59-9	41-TeCB	J	14.3	pg/L	2.51	22.2
36559-22-5	42-TeCB		41.4	pg/L	2.78	22.2
70362-46-8	43-TeCB	J	4.45	pg/L	3.11	22.2
41464-39-5	44-TeCB	C	157	pg/L	2.38	66.7
70362-45-7	45-TeCB	CJ	17.2	pg/L	0.934	44.5
41464-47-5	46-TeCB	J	7.20	pg/L	0.934	22.2
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	20.8	pg/L	2.49	22.2
41464-40-8	49-TeCB	C	70.5	pg/L	2.25	44.5
62796-65-0	50-TeCB	CJ	9.98	pg/L	0.867	44.5
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		177	pg/L	2.25	22.2
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	.756	pg/L	0.756	22.2
74338-24-2	55-TeCB	J	4.45	pg/L	2.05	22.2
41464-43-1	56-TeCB		96.1	pg/L	2.09	22.2
70424-67-8	57-TeCB	J	2.05	pg/L	1.78	22.2
41464-49-7	58-TeCB	U	1.89	pg/L	1.89	22.2
74472-33-6	59-TeCB	CJ	15.1	pg/L	1.82	66.7
33025-41-1	60-TeCB		42.1	pg/L	1.98	22.2
33284-53-6	61-TeCB	C	285	pg/L	1.89	88.9
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	J	4.56	pg/L	1.69	22.2
52663-58-8	64-TeCB		77.2	pg/L	1.96	22.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944008**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 15:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**899.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		139	pg/L	1.67	22.2
73575-53-8	67-TeCB	J	4.31	pg/L	1.65	22.2
73575-52-7	68-TeCB	U	1.76	pg/L	1.76	22.2
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.67	pg/L	1.67	22.2
74338-23-1	73-TeCB	J	3.56	pg/L	2.07	22.2
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB		42.0	pg/L	2.29	22.2
70362-49-1	78-TeCB	U	1.8	pg/L	1.80	22.2
41464-48-6	79-TeCB	J	5.85	pg/L	1.56	22.2
33284-52-5	80-TeCB	U	1.58	pg/L	1.58	22.2
70362-50-4	81-TeCB	U	2.16	pg/L	2.16	22.2
52663-62-4	82-PeCB		63.3	pg/L	3.07	22.2
60145-20-2	83-PeCB		40.4	pg/L	2.82	22.2
52663-60-2	84-PeCB		125	pg/L	3.02	22.2
65510-45-4	85-PeCB	C	96.7	pg/L	2.27	66.7
55312-69-1	86-PeCB	C	341	pg/L	2.47	133
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	C	58.3	pg/L	2.80	44.5
73575-57-2	89-PeCB	J	3.76	pg/L	2.85	22.2
68194-07-0	90-PeCB	C	391	pg/L	2.38	66.7
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB		77.1	pg/L	2.69	22.2
73575-56-1	93-PeCB	CU	2.69	pg/L	2.69	44.5
73575-55-0	94-PeCB	U	3.2	pg/L	3.20	22.2
38379-99-6	95-PeCB		311	pg/L	2.67	22.2
73575-54-9	96-PeCB	J	1.87	pg/L	0.645	22.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944008**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 15:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**899.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CJ	11.9	pg/L	3.27	44.5
38380-01-7	99-PeCB		152	pg/L	2.47	22.2
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	2.45	pg/L	2.45	22.2
56558-16-8	104-PeCB	U	.778	pg/L	0.778	22.2
32598-14-4	105-PeCB		225	pg/L	2.67	22.2
70424-69-0	106-PeCB	U	2.11	pg/L	2.11	22.2
70424-68-9	107-PeCB		28.5	pg/L	1.78	22.2
70362-41-3	108-PeCB	CJ	19.5	pg/L	2.11	44.5
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	818	pg/L	2.33	44.5
39635-32-0	111-PeCB	U	2.16	pg/L	2.16	22.2
74472-36-9	112-PeCB	U	2.22	pg/L	2.22	22.2
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	J	9.21	pg/L	2.62	22.2
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		450	pg/L	2.40	22.2
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	1.93	pg/L	1.93	22.2
56558-18-0	121-PeCB	U	2.18	pg/L	2.18	22.2
76842-07-4	122-PeCB	J	5.00	pg/L	2.16	22.2
65510-44-3	123-PeCB	J	8.25	pg/L	2.42	22.2
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	J	5.60	pg/L	3.11	22.2
39635-33-1	127-PeCB	U	2.18	pg/L	2.18	22.2
38380-07-3	128-HxCB	C	148	pg/L	2.82	44.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944008**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 15:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**899.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	902	pg/L	3.02	66.7
52663-66-8	130-HxCB		52.4	pg/L	3.29	22.2
61798-70-7	131-HxCB	J	11.0	pg/L	3.82	22.2
38380-05-1	132-HxCB		275	pg/L	3.45	22.2
35694-04-3	133-HxCB	J	8.83	pg/L	3.00	22.2
52704-70-8	134-HxCB		34.8	pg/L	3.76	22.2
52744-13-5	135-HxCB	C	163	pg/L	0.934	44.5
38411-22-2	136-HxCB		56.5	pg/L	0.689	22.2
35694-06-5	137-HxCB		48.8	pg/L	3.14	22.2
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CJ	12.0	pg/L	2.85	44.5
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		121	pg/L	2.93	22.2
41411-61-4	142-HxCB	U	3.36	pg/L	3.36	22.2
68194-15-0	143-HxCB	U	3.14	pg/L	3.14	22.2
68194-14-9	144-HxCB		26.3	pg/L	0.889	22.2
74472-40-5	145-HxCB	U	.756	pg/L	0.756	22.2
51908-16-8	146-HxCB		84.1	pg/L	2.51	22.2
68194-13-8	147-HxCB	C	451	pg/L	2.87	44.5
74472-41-6	148-HxCB	U	.889	pg/L	0.889	22.2
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.756	pg/L	0.756	22.2
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.667	pg/L	0.667	22.2
35065-27-1	153-HxCB	C	493	pg/L	2.40	44.5
60145-22-4	154-HxCB	J	3.98	pg/L	0.778	22.2
33979-03-2	155-HxCB	U	.734	pg/L	0.734	22.2
38380-08-4	156-HxCB	C	113	pg/L	2.22	44.5
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB		85.0	pg/L	2.25	22.2
39635-35-3	159-HxCB	U	1.4	pg/L	1.40	22.2
41411-62-5	160-HxCB	U	2.91	pg/L	2.91	22.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944008**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 15:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**899.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	2.33	pg/L	2.33	22.2
39635-34-2	162-HxCB	J	4.11	pg/L	1.51	22.2
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB		50.4	pg/L	2.40	22.2
74472-46-1	165-HxCB	U	2.56	pg/L	2.56	22.2
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB		41.6	pg/L	1.56	22.2
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	J	2.98	pg/L	1.93	22.2
35065-30-6	170-HpCB		166	pg/L	3.05	22.2
52663-71-5	171-HpCB	C	47.8	pg/L	2.80	44.5
52663-74-8	172-HpCB		29.4	pg/L	2.87	22.2
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		149	pg/L	2.65	22.2
40186-70-7	175-HpCB	J	5.96	pg/L	1.13	22.2
52663-65-7	176-HpCB	J	14.9	pg/L	0.867	22.2
52663-70-4	177-HpCB		85.4	pg/L	2.76	22.2
52663-67-9	178-HpCB		28.9	pg/L	1.22	22.2
52663-64-6	179-HpCB		44.3	pg/L	0.823	22.2
35065-29-3	180-HpCB	C	372	pg/L	2.51	44.5
74472-47-2	181-HpCB	U	2.85	pg/L	2.85	22.2
60145-23-5	182-HpCB	U	1.13	pg/L	1.13	22.2
52663-69-1	183-HpCB	C	109	pg/L	2.53	44.5
74472-48-3	184-HpCB	U	.889	pg/L	0.889	22.2
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.934	pg/L	0.934	22.2
52663-68-0	187-HpCB		173	pg/L	1.13	22.2
74487-85-7	188-HpCB	U	1.02	pg/L	1.02	22.2
39635-31-9	189-HpCB	J	8.40	pg/L	1.62	22.2
41411-64-7	190-HpCB		35.1	pg/L	2.42	22.2
74472-50-7	191-HpCB	J	6.74	pg/L	2.22	22.2
74472-51-8	192-HpCB	U	2.62	pg/L	2.62	22.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944008**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 15:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**899.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		81.9	pg/L	1.96	22.2
52663-78-2	195-OcCB		28.2	pg/L	2.00	22.2
42740-50-1	196-OcCB		38.1	pg/L	1.62	22.2
33091-17-7	197-OcCB	CJ	12.2	pg/L	1.18	44.5
68194-17-2	198-OcCB	C	91.0	pg/L	1.69	44.5
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	J	8.72	pg/L	1.11	22.2
2136-99-4	202-OcCB	J	15.9	pg/L	1.38	22.2
52663-76-0	203-OcCB		59.5	pg/L	1.76	22.2
74472-52-9	204-OcCB	U	1.13	pg/L	1.13	22.2
74472-53-0	205-OcCB	J	4.54	pg/L	1.80	22.2
40186-72-9	206-NoCB		44.9	pg/L	1.96	22.2
52663-79-3	207-NoCB	J	5.38	pg/L	1.18	22.2
52663-77-1	208-NoCB	J	13.0	pg/L	1.36	22.2
2051-24-3	209-DeCB	J	16.8	pg/L	1.40	22.2
27323-18-8	Total Mono PCBs	J	11.2	pg/L	7.40	22.2
25512-42-9	Total Di PCBs		140	pg/L	7.40	22.2
25323-68-6	Total Tri PCBs		363	pg/L	7.40	22.2
26914-33-0	Total Tetra PCBs		1320	pg/L	7.40	22.2
25429-29-2	Total Penta PCBs		3240	pg/L	7.40	22.2
26601-64-9	Total Hexa PCBs		3190	pg/L	7.40	22.2
28655-71-2	Total Hepta PCBs		1280	pg/L	7.40	22.2
55722-26-4	Total Octa PCBs		340	pg/L	7.40	22.2
53742-07-7	Total Nona PCBs		63.3	pg/L	7.40	22.2
2051-24-3	Total Deca PCB	J	16.8	pg/L	7.40	22.2
1336-36-3	Total PCB Congeners		9960	pg/L	7.40	22.2

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1010	2220	pg/L	45.3	(15%-150%)
13C-3-MoCB		1110	2220	pg/L	50.1	(15%-150%)
13C-4-DiCB		1060	2220	pg/L	47.7	(25%-150%)
13C-15-DiCB		2140	2220	pg/L	96.4	(25%-150%)
13C-19-TrCB		1420	2220	pg/L	63.7	(25%-150%)
13C-37-TrCB		2040	2220	pg/L	91.6	(25%-150%)
13C-54-TeCB		1240	2220	pg/L	55.9	(25%-150%)
13C-77-TeCB		2600	2220	pg/L	117	(25%-150%)
13C-81-TeCB		2650	2220	pg/L	119	(25%-150%)
13C-104-PeCB		1520	2220	pg/L	68.3	(25%-150%)
13C-105-PeCB		2140	2220	pg/L	96.2	(25%-150%)
13C-114-PeCB		2130	2220	pg/L	95.8	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944008**	**Date Collected:**	**10/13/2016 07:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/29/2016 15:39**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**899.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		2130	2220	pg/L	95.9	(25%-150%)
13C-123-PeCB		2220	2220	pg/L	99.8	(25%-150%)
13C-126-PeCB		2110	2220	pg/L	94.8	(25%-150%)
13C-155-HxCB		1620	2220	pg/L	72.8	(25%-150%)
13C-156-HxCB	C	4140	4450	pg/L	93.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		2160	2220	pg/L	97.2	(25%-150%)
13C-169-HxCB		2030	2220	pg/L	91.2	(25%-150%)
13C-188-HpCB		1470	2220	pg/L	66.2	(25%-150%)
13C-189-HpCB		1920	2220	pg/L	86.4	(25%-150%)
13C-202-OcCB		1750	2220	pg/L	78.7	(25%-150%)
13C-205-OcCB		2050	2220	pg/L	92.3	(25%-150%)
13C-206-NoCB		1770	2220	pg/L	79.7	(25%-150%)
13C-208-NoCB		1720	2220	pg/L	77.5	(25%-150%)
13C-209-DeCB		2050	2220	pg/L	92.0	(25%-150%)
13C-28-TrCB		1310	2220	pg/L	59.0	(30%-135%)
13C-111-PeCB		1850	2220	pg/L	83.1	(30%-135%)
13C-178-HpCB		1720	2220	pg/L	77.5	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944009**	**Date Collected:**	**10/13/2016 06:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**968.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		71.1	pg/L	1.49	20.7
2051-61-8	2-MoCB		28.2	pg/L	1.45	20.7
2051-62-9	3-MoCB		66.6	pg/L	1.67	20.7
13029-08-8	4-DiCB		501	pg/L	4.15	20.7
16605-91-7	5-DiCB		35.0	pg/L	4.23	20.7
25569-80-6	6-DiCB		300	pg/L	3.28	20.7
33284-50-3	7-DiCB		55.4	pg/L	3.70	20.7
34883-43-7	8-DiCB		1350	pg/L	3.04	20.7
34883-39-1	9-DiCB		80.2	pg/L	3.61	20.7
33146-45-1	10-DiCB		27.4	pg/L	2.38	20.7
2050-67-1	11-DiCB		360	pg/L	3.74	103
2974-92-7	12-DiCB	C	272	pg/L	3.84	41.3
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	3.55	pg/L	3.55	20.7
2050-68-2	15-DiCB		1960	pg/L	4.17	20.7
38444-78-9	16-TrCB		1480	pg/L	1.96	20.7
37680-66-3	17-TrCB		1020	pg/L	1.57	20.7
37680-65-2	18-TrCB	C	2260	pg/L	1.30	41.3
38444-73-4	19-TrCB		271	pg/L	1.92	20.7
38444-84-7	20-TrCB	C	6400	pg/L	1.14	41.3
55702-46-0	21-TrCB	C	3310	pg/L	1.16	41.3
38444-85-8	22-TrCB		2980	pg/L	1.26	20.7
55720-44-0	23-TrCB	J	5.70	pg/L	1.20	20.7
55702-45-9	24-TrCB	U	1.2	pg/L	1.20	20.7
55712-37-3	25-TrCB		379	pg/L	1.12	20.7
38444-81-4	26-TrCB	C	828	pg/L	1.09	41.3
38444-76-7	27-TrCB		200	pg/L	1.09	20.7
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		4250	pg/L	1.05	20.7
38444-77-8	32-TrCB		849	pg/L	1.03	20.7

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944009**	**Date Collected:**	**10/13/2016 06:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**968.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	J	12.5	pg/L	1.14	20.7
37680-69-6	35-TrCB		186	pg/L	2.83	20.7
38444-87-0	36-TrCB	U	2.52	pg/L	2.52	20.7
38444-90-5	37-TrCB		3280	pg/L	2.95	20.7
53555-66-1	38-TrCB	J	6.05	pg/L	2.64	20.7
38444-88-1	39-TrCB	U	2.71	pg/L	2.71	20.7
38444-93-8	40-TeCB	C	3580	pg/L	5.84	41.3
52663-59-9	41-TeCB		841	pg/L	7.70	20.7
36559-22-5	42-TeCB		2180	pg/L	7.29	20.7
70362-46-8	43-TeCB		322	pg/L	8.20	20.7
41464-39-5	44-TeCB	C	6620	pg/L	6.01	62.0
70362-45-7	45-TeCB	C	860	pg/L	1.20	41.3
41464-47-5	46-TeCB		312	pg/L	1.24	20.7
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB		1450	pg/L	6.59	20.7
41464-40-8	49-TeCB	C	3290	pg/L	5.58	41.3
62796-65-0	50-TeCB	C	492	pg/L	1.14	41.3
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		5290	pg/L	5.89	20.7
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	J	9.62	pg/L	0.991	20.7
74338-24-2	55-TeCB		129	pg/L	2.71	20.7
41464-43-1	56-TeCB		2220	pg/L	2.81	20.7
70424-67-8	57-TeCB		29.1	pg/L	2.40	20.7
41464-49-7	58-TeCB		22.8	pg/L	2.62	20.7
74472-33-6	59-TeCB	C	637	pg/L	4.69	62.0
33025-41-1	60-TeCB		1190	pg/L	2.68	20.7
33284-53-6	61-TeCB	C	8580	pg/L	2.56	82.6
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB		197	pg/L	2.33	20.7
52663-58-8	64-TeCB		3720	pg/L	5.20	20.7

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944009**	**Date Collected:**	**10/13/2016 06:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**968.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		4190	pg/L	2.35	20.7
73575-53-8	67-TeCB		197	pg/L	2.15	20.7
73575-52-7	68-TeCB	J	14.2	pg/L	2.33	20.7
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB		27.4	pg/L	2.21	20.7
74338-23-1	73-TeCB		110	pg/L	4.89	20.7
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB		522	pg/L	2.71	20.7
70362-49-1	78-TeCB	U	2.5	pg/L	2.50	20.7
41464-48-6	79-TeCB		55.4	pg/L	2.17	20.7
33284-52-5	80-TeCB	U	2.13	pg/L	2.13	20.7
70362-50-4	81-TeCB	J	14.6	pg/L	2.56	20.7
52663-62-4	82-PeCB		746	pg/L	2.91	20.7
60145-20-2	83-PeCB		243	pg/L	2.93	20.7
52663-60-2	84-PeCB		1290	pg/L	2.79	20.7
65510-45-4	85-PeCB	C	990	pg/L	2.17	62.0
55312-69-1	86-PeCB	C	3930	pg/L	2.35	124
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	C	696	pg/L	2.58	41.3
73575-57-2	89-PeCB		73.1	pg/L	2.64	20.7
68194-07-0	90-PeCB	C	4240	pg/L	2.29	62.0
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB		723	pg/L	2.62	20.7
73575-56-1	93-PeCB	C	43.8	pg/L	2.60	41.3
73575-55-0	94-PeCB		33.2	pg/L	2.87	20.7
38379-99-6	95-PeCB		3160	pg/L	2.40	20.7
73575-54-9	96-PeCB		44.5	pg/L	1.14	20.7

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944009**	**Date Collected:**	**10/13/2016 06:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**968.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	C	207	pg/L	2.79	41.3
38380-01-7	99-PeCB		2040	pg/L	2.52	20.7
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB		21.8	pg/L	2.27	20.7
56558-16-8	104-PeCB	U	1.28	pg/L	1.28	20.7
32598-14-4	105-PeCB		2570	pg/L	3.53	20.7
70424-69-0	106-PeCB	U	3.12	pg/L	3.12	20.7
70424-68-9	107-PeCB		298	pg/L	2.66	20.7
70362-41-3	108-PeCB	C	206	pg/L	3.12	41.3
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	7060	pg/L	2.25	41.3
39635-32-0	111-PeCB	U	2.13	pg/L	2.13	20.7
74472-36-9	112-PeCB	U	1.92	pg/L	1.92	20.7
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB		121	pg/L	3.43	20.7
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		4950	pg/L	3.24	20.7
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	J	6.75	pg/L	1.88	20.7
56558-18-0	121-PeCB	U	2.09	pg/L	2.09	20.7
76842-07-4	122-PeCB		62.8	pg/L	3.18	20.7
65510-44-3	123-PeCB		79.6	pg/L	3.28	20.7
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB		44.1	pg/L	4.05	20.7
39635-33-1	127-PeCB	J	9.17	pg/L	3.12	20.7
38380-07-3	128-HxCB	C	1120	pg/L	2.83	41.3

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944009**	**Date Collected:**	**10/13/2016 06:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**968.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	6990	pg/L	3.12	62.0
52663-66-8	130-HxCB		375	pg/L	3.41	20.7
61798-70-7	131-HxCB		86.3	pg/L	3.88	20.7
38380-05-1	132-HxCB		2110	pg/L	3.55	20.7
35694-04-3	133-HxCB		56.9	pg/L	3.14	20.7
52704-70-8	134-HxCB		307	pg/L	4.03	20.7
52744-13-5	135-HxCB	C	1280	pg/L	1.20	41.3
38411-22-2	136-HxCB		464	pg/L	0.867	20.7
35694-06-5	137-HxCB		361	pg/L	3.26	20.7
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	C	90.0	pg/L	3.02	41.3
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		1050	pg/L	3.14	20.7
41411-61-4	142-HxCB	U	3.33	pg/L	3.33	20.7
68194-15-0	143-HxCB	J	14.2	pg/L	3.08	20.7
68194-14-9	144-HxCB		204	pg/L	1.14	20.7
74472-40-5	145-HxCB	J	1.94	pg/L	0.971	20.7
51908-16-8	146-HxCB		528	pg/L	2.38	20.7
68194-13-8	147-HxCB	C	3420	pg/L	2.95	41.3
74472-41-6	148-HxCB	J	3.68	pg/L	1.09	20.7
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	J	5.41	pg/L	0.929	20.7
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	J	3.72	pg/L	0.847	20.7
35065-27-1	153-HxCB	C	4010	pg/L	2.52	41.3
60145-22-4	154-HxCB		31.1	pg/L	0.991	20.7
33979-03-2	155-HxCB	U	.785	pg/L	0.785	20.7
38380-08-4	156-HxCB	C	870	pg/L	3.59	41.3
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB		651	pg/L	2.17	20.7
39635-35-3	159-HxCB	U	2.64	pg/L	2.64	20.7
41411-62-5	160-HxCB	U	2.83	pg/L	2.83	20.7

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944009**	**Date Collected:**	**10/13/2016 06:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**968.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	2.29	pg/L	2.29	20.7
39635-34-2	162-HxCB		21.8	pg/L	2.85	20.7
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB		383	pg/L	2.40	20.7
74472-46-1	165-HxCB	U	2.77	pg/L	2.77	20.7
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB		264	pg/L	2.64	20.7
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	J	9.85	pg/L	3.18	20.7
35065-30-6	170-HpCB		1120	pg/L	2.54	20.7
52663-71-5	171-HpCB	C	338	pg/L	2.60	41.3
52663-74-8	172-HpCB		191	pg/L	2.58	20.7
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		1040	pg/L	2.50	20.7
40186-70-7	175-HpCB		45.4	pg/L	1.65	20.7
52663-65-7	176-HpCB		111	pg/L	1.26	20.7
52663-70-4	177-HpCB		592	pg/L	2.64	20.7
52663-67-9	178-HpCB		182	pg/L	1.73	20.7
52663-64-6	179-HpCB		337	pg/L	1.26	20.7
35065-29-3	180-HpCB	C	2490	pg/L	2.19	41.3
74472-47-2	181-HpCB	J	13.1	pg/L	2.71	20.7
60145-23-5	182-HpCB	J	5.76	pg/L	1.63	20.7
52663-69-1	183-HpCB	C	740	pg/L	2.48	41.3
74472-48-3	184-HpCB	J	1.90	pg/L	1.28	20.7
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	1.4	pg/L	1.40	20.7
52663-68-0	187-HpCB		1290	pg/L	1.73	20.7
74487-85-7	188-HpCB	J	2.56	pg/L	1.22	20.7
39635-31-9	189-HpCB		51.9	pg/L	1.94	20.7
41411-64-7	190-HpCB		215	pg/L	1.94	20.7
74472-50-7	191-HpCB		42.9	pg/L	1.88	20.7
74472-51-8	192-HpCB	U	2.23	pg/L	2.23	20.7

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944009**	**Date Collected:**	**10/13/2016 06:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**968.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		515	pg/L	1.96	20.7
52663-78-2	195-OcCB		173	pg/L	2.07	20.7
42740-50-1	196-OcCB		264	pg/L	1.12	20.7
33091-17-7	197-OcCB	C	85.5	pg/L	0.909	41.3
68194-17-2	198-OcCB	C	657	pg/L	1.20	41.3
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB		68.8	pg/L	0.888	20.7
2136-99-4	202-OcCB		112	pg/L	0.950	20.7
52663-76-0	203-OcCB		426	pg/L	1.16	20.7
74472-52-9	204-OcCB	U	.888	pg/L	0.888	20.7
74472-53-0	205-OcCB		24.7	pg/L	1.76	20.7
40186-72-9	206-NoCB		369	pg/L	1.47	20.7
52663-79-3	207-NoCB		41.7	pg/L	1.03	20.7
52663-77-1	208-NoCB		95.6	pg/L	1.14	20.7
2051-24-3	209-DeCB		93.5	pg/L	1.07	20.7
27323-18-8	Total Mono PCBs		166	pg/L	6.88	20.7
25512-42-9	Total Di PCBs		4950	pg/L	6.88	20.7
25323-68-6	Total Tri PCBs		27700	pg/L	6.88	20.7
26914-33-0	Total Tetra PCBs		47100	pg/L	6.88	20.7
25429-29-2	Total Penta PCBs		33900	pg/L	6.88	20.7
26601-64-9	Total Hexa PCBs		24700	pg/L	6.88	20.7
28655-71-2	Total Hepta PCBs		8800	pg/L	6.88	20.7
55722-26-4	Total Octa PCBs		2330	pg/L	6.88	20.7
53742-07-7	Total Nona PCBs		507	pg/L	6.88	20.7
2051-24-3	Total Deca PCB		93.5	pg/L	6.88	20.7
1336-36-3	Total PCB Congeners		150000	pg/L	6.88	20.7

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1090	2070	pg/L	52.9	(15%-150%)
13C-3-MoCB		1240	2070	pg/L	60.1	(15%-150%)
13C-4-DiCB		1300	2070	pg/L	63.1	(25%-150%)
13C-15-DiCB		2070	2070	pg/L	100	(25%-150%)
13C-19-TrCB		1750	2070	pg/L	84.6	(25%-150%)
13C-37-TrCB		1890	2070	pg/L	91.7	(25%-150%)
13C-54-TeCB		1320	2070	pg/L	64.0	(25%-150%)
13C-77-TeCB		2210	2070	pg/L	107	(25%-150%)
13C-81-TeCB		2210	2070	pg/L	107	(25%-150%)
13C-104-PeCB		1480	2070	pg/L	71.4	(25%-150%)
13C-105-PeCB		1880	2070	pg/L	90.8	(25%-150%)
13C-114-PeCB		1840	2070	pg/L	88.9	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944009**	**Date Collected:**	**10/13/2016 06:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**968.4 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1880	2070	pg/L	91.2	(25%-150%)
13C-123-PeCB		1900	2070	pg/L	92.0	(25%-150%)
13C-126-PeCB		1910	2070	pg/L	92.4	(25%-150%)
13C-155-HxCB		1520	2070	pg/L	73.7	(25%-150%)
13C-156-HxCB	C	3340	4130	pg/L	80.8	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1740	2070	pg/L	84.4	(25%-150%)
13C-169-HxCB		1670	2070	pg/L	81.0	(25%-150%)
13C-188-HpCB		1950	2070	pg/L	94.3	(25%-150%)
13C-189-HpCB		1790	2070	pg/L	86.8	(25%-150%)
13C-202-OcCB		2020	2070	pg/L	98.0	(25%-150%)
13C-205-OcCB		2080	2070	pg/L	101	(25%-150%)
13C-206-NoCB		2020	2070	pg/L	97.7	(25%-150%)
13C-208-NoCB		1960	2070	pg/L	94.9	(25%-150%)
13C-209-DeCB		2040	2070	pg/L	98.9	(25%-150%)
13C-28-TrCB		1390	2070	pg/L	67.3	(30%-135%)
13C-111-PeCB		1620	2070	pg/L	78.7	(30%-135%)
13C-178-HpCB		1690	2070	pg/L	81.7	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944010**	**Date Collected:**	**10/13/2016 05:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 13:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-10**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1033.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	5.61	pg/L	1.24	19.4
2051-61-8	2-MoCB	J	5.05	pg/L	1.22	19.4
2051-62-9	3-MoCB	J	5.53	pg/L	1.41	19.4
13029-08-8	4-DiCB	J	18.3	pg/L	3.43	19.4
16605-91-7	5-DiCB	U	3.79	pg/L	3.79	19.4
25569-80-6	6-DiCB	J	9.39	pg/L	2.94	19.4
33284-50-3	7-DiCB	U	3.29	pg/L	3.29	19.4
34883-43-7	8-DiCB		34.8	pg/L	2.71	19.4
34883-39-1	9-DiCB	U	3.21	pg/L	3.21	19.4
33146-45-1	10-DiCB	U	2.03	pg/L	2.03	19.4
2050-67-1	11-DiCB		149	pg/L	3.35	96.8
2974-92-7	12-DiCB	CU	3.43	pg/L	3.43	38.7
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	3.17	pg/L	3.17	19.4
2050-68-2	15-DiCB		32.9	pg/L	3.75	19.4
38444-78-9	16-TrCB		31.2	pg/L	2.03	19.4
37680-66-3	17-TrCB		19.6	pg/L	1.61	19.4
37680-65-2	18-TrCB	C	39.4	pg/L	1.35	38.7
38444-73-4	19-TrCB	J	6.15	pg/L	1.72	19.4
38444-84-7	20-TrCB	C	79.3	pg/L	1.18	38.7
55702-46-0	21-TrCB	C	60.7	pg/L	1.20	38.7
38444-85-8	22-TrCB		37.1	pg/L	1.30	19.4
55720-44-0	23-TrCB	U	1.24	pg/L	1.24	19.4
55702-45-9	24-TrCB	U	1.22	pg/L	1.22	19.4
55712-37-3	25-TrCB	J	6.68	pg/L	1.14	19.4
38444-81-4	26-TrCB	CJ	16.6	pg/L	1.12	38.7
38444-76-7	27-TrCB	J	2.77	pg/L	1.12	19.4
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		57.0	pg/L	1.06	19.4
38444-77-8	32-TrCB	J	11.4	pg/L	1.06	19.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944010**	**Date Collected:**	**10/13/2016 05:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 13:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-10**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1033.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.18	pg/L	1.18	19.4
37680-69-6	35-TrCB	J	9.73	pg/L	2.44	19.4
38444-87-0	36-TrCB	U	2.19	pg/L	2.19	19.4
38444-90-5	37-TrCB		50.8	pg/L	2.73	19.4
53555-66-1	38-TrCB	U	2.3	pg/L	2.30	19.4
38444-88-1	39-TrCB	U	2.32	pg/L	2.32	19.4
38444-93-8	40-TeCB	C	79.2	pg/L	2.88	38.7
52663-59-9	41-TeCB		19.9	pg/L	3.81	19.4
36559-22-5	42-TeCB		42.4	pg/L	3.60	19.4
70362-46-8	43-TeCB	J	11.0	pg/L	4.04	19.4
41464-39-5	44-TeCB	C	301	pg/L	2.98	58.1
70362-45-7	45-TeCB	CJ	17.6	pg/L	1.16	38.7
41464-47-5	46-TeCB	J	6.77	pg/L	1.18	19.4
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB		26.9	pg/L	3.25	19.4
41464-40-8	49-TeCB	C	140	pg/L	2.75	38.7
62796-65-0	50-TeCB	CJ	14.3	pg/L	1.08	38.7
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		661	pg/L	2.90	19.4
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	J	1.28	pg/L	0.871	19.4
74338-24-2	55-TeCB	U	2.24	pg/L	2.24	19.4
41464-43-1	56-TeCB		151	pg/L	2.32	19.4
70424-67-8	57-TeCB	J	4.63	pg/L	1.97	19.4
41464-49-7	58-TeCB	U	2.19	pg/L	2.19	19.4
74472-33-6	59-TeCB	CJ	11.1	pg/L	2.32	58.1
33025-41-1	60-TeCB		43.5	pg/L	2.23	19.4
33284-53-6	61-TeCB	C	999	pg/L	2.13	77.4
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	J	7.91	pg/L	1.94	19.4
52663-58-8	64-TeCB		169	pg/L	2.57	19.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944010**	**Date Collected:**	**10/13/2016 05:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 13:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-10**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1033.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		284	pg/L	1.95	19.4
73575-53-8	67-TeCB	J	12.2	pg/L	1.78	19.4
73575-52-7	68-TeCB	U	1.94	pg/L	1.94	19.4
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	J	4.01	pg/L	1.84	19.4
74338-23-1	73-TeCB	J	10.6	pg/L	2.42	19.4
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB		207	pg/L	2.28	19.4
70362-49-1	78-TeCB	U	2.07	pg/L	2.07	19.4
41464-48-6	79-TeCB		48.3	pg/L	1.80	19.4
33284-52-5	80-TeCB	U	1.76	pg/L	1.76	19.4
70362-50-4	81-TeCB	J	6.91	pg/L	2.23	19.4
52663-62-4	82-PeCB		551	pg/L	1.88	19.4
60145-20-2	83-PeCB		190	pg/L	1.90	19.4
52663-60-2	84-PeCB		866	pg/L	1.80	19.4
65510-45-4	85-PeCB	C	765	pg/L	1.41	58.1
55312-69-1	86-PeCB	C	3290	pg/L	1.51	116
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	C	402	pg/L	1.66	38.7
73575-57-2	89-PeCB		23.5	pg/L	1.70	19.4
68194-07-0	90-PeCB	C	4330	pg/L	1.47	58.1
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB		689	pg/L	1.68	19.4
73575-56-1	93-PeCB	CU	1.68	pg/L	1.68	38.7
73575-55-0	94-PeCB	J	10.4	pg/L	1.86	19.4
38379-99-6	95-PeCB		2340	pg/L	1.55	19.4
73575-54-9	96-PeCB	J	12.0	pg/L	0.755	19.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944010**	**Date Collected:**	**10/13/2016 05:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 13:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-10**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1033.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	C	74.3	pg/L	1.80	38.7
38380-01-7	99-PeCB		1700	pg/L	1.63	19.4
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	J	11.5	pg/L	1.47	19.4
56558-16-8	104-PeCB	U	.851	pg/L	0.851	19.4
32598-14-4	105-PeCB		2140	pg/L	3.02	19.4
70424-69-0	106-PeCB	U	2.65	pg/L	2.65	19.4
70424-68-9	107-PeCB		293	pg/L	2.24	19.4
70362-41-3	108-PeCB	C	211	pg/L	2.65	38.7
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	7940	pg/L	1.45	38.7
39635-32-0	111-PeCB	U	2.21	pg/L	2.21	19.4
74472-36-9	112-PeCB	U	1.24	pg/L	1.24	19.4
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB		68.5	pg/L	2.94	19.4
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		5130	pg/L	2.73	19.4
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	J	12.1	pg/L	1.22	19.4
56558-18-0	121-PeCB	U	1.35	pg/L	1.35	19.4
76842-07-4	122-PeCB		53.6	pg/L	2.69	19.4
65510-44-3	123-PeCB		78.3	pg/L	2.77	19.4
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB		99.1	pg/L	3.35	19.4
39635-33-1	127-PeCB	J	14.6	pg/L	2.65	19.4
38380-07-3	128-HxCB	C	1830	pg/L	2.30	38.7

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944010**	**Date Collected:**	**10/13/2016 05:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 13:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-10**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1033.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	13500	pg/L	2.54	58.1
52663-66-8	130-HxCB		660	pg/L	2.79	19.4
61798-70-7	131-HxCB		120	pg/L	3.17	19.4
38380-05-1	132-HxCB		3580	pg/L	2.90	19.4
35694-04-3	133-HxCB		103	pg/L	2.57	19.4
52704-70-8	134-HxCB		508	pg/L	3.29	19.4
52744-13-5	135-HxCB	C	2440	pg/L	0.987	38.7
38411-22-2	136-HxCB		770	pg/L	0.697	19.4
35694-06-5	137-HxCB		452	pg/L	2.67	19.4
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	C	140	pg/L	2.46	38.7
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		2170	pg/L	2.55	19.4
41411-61-4	142-HxCB	U	2.73	pg/L	2.73	19.4
68194-15-0	143-HxCB		34.8	pg/L	2.52	19.4
68194-14-9	144-HxCB		363	pg/L	0.929	19.4
74472-40-5	145-HxCB	J	2.13	pg/L	0.793	19.4
51908-16-8	146-HxCB		1070	pg/L	1.95	19.4
68194-13-8	147-HxCB	C	6230	pg/L	2.42	38.7
74472-41-6	148-HxCB	J	7.22	pg/L	0.910	19.4
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	J	12.9	pg/L	0.755	19.4
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	J	4.47	pg/L	0.697	19.4
35065-27-1	153-HxCB	C	8230	pg/L	2.05	38.7
60145-22-4	154-HxCB		71.8	pg/L	0.813	19.4
33979-03-2	155-HxCB	U	.658	pg/L	0.658	19.4
38380-08-4	156-HxCB	C	1400	pg/L	4.03	38.7
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB		1210	pg/L	1.78	19.4
39635-35-3	159-HxCB	U	2.94	pg/L	2.94	19.4
41411-62-5	160-HxCB	U	2.32	pg/L	2.32	19.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944010**	**Date Collected:**	**10/13/2016 05:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 13:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-10**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1033.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.88	pg/L	1.88	19.4
39635-34-2	162-HxCB		46.2	pg/L	3.17	19.4
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB		843	pg/L	1.95	19.4
74472-46-1	165-HxCB	U	2.26	pg/L	2.26	19.4
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB		508	pg/L	2.88	19.4
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB		26.7	pg/L	3.46	19.4
35065-30-6	170-HpCB		3140	pg/L	1.97	19.4
52663-71-5	171-HpCB	C	877	pg/L	2.03	38.7
52663-74-8	172-HpCB		516	pg/L	2.01	19.4
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		2650	pg/L	1.95	19.4
40186-70-7	175-HpCB		111	pg/L	0.968	19.4
52663-65-7	176-HpCB		253	pg/L	0.735	19.4
52663-70-4	177-HpCB		1630	pg/L	2.07	19.4
52663-67-9	178-HpCB		456	pg/L	1.03	19.4
52663-64-6	179-HpCB		760	pg/L	0.735	19.4
35065-29-3	180-HpCB	C	6580	pg/L	1.70	38.7
74472-47-2	181-HpCB		22.6	pg/L	2.11	19.4
60145-23-5	182-HpCB		19.8	pg/L	0.968	19.4
52663-69-1	183-HpCB	C	1780	pg/L	1.94	38.7
74472-48-3	184-HpCB	J	4.49	pg/L	0.755	19.4
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.832	pg/L	0.832	19.4
52663-68-0	187-HpCB		3090	pg/L	1.03	19.4
74487-85-7	188-HpCB	J	7.80	pg/L	0.735	19.4
39635-31-9	189-HpCB		131	pg/L	1.47	19.4
41411-64-7	190-HpCB		625	pg/L	1.51	19.4
74472-50-7	191-HpCB		119	pg/L	1.47	19.4
74472-51-8	192-HpCB	U	1.74	pg/L	1.74	19.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944010**	**Date Collected:**	**10/13/2016 05:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 13:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-10**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1033.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		1070	pg/L	1.32	19.4
52663-78-2	195-OcCB		431	pg/L	1.39	19.4
42740-50-1	196-OcCB		528	pg/L	0.968	19.4
33091-17-7	197-OcCB	C	151	pg/L	0.774	38.7
68194-17-2	198-OcCB	C	1070	pg/L	1.03	38.7
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB		105	pg/L	0.755	19.4
2136-99-4	202-OcCB		146	pg/L	0.832	19.4
52663-76-0	203-OcCB		694	pg/L	1.01	19.4
74472-52-9	204-OcCB	U	.755	pg/L	0.755	19.4
74472-53-0	205-OcCB		56.7	pg/L	1.16	19.4
40186-72-9	206-NoCB		251	pg/L	1.10	19.4
52663-79-3	207-NoCB		33.7	pg/L	0.755	19.4
52663-77-1	208-NoCB		49.2	pg/L	0.813	19.4
2051-24-3	209-DeCB		43.1	pg/L	0.910	19.4
27323-18-8	Total Mono PCBs	J	16.2	pg/L	6.44	19.4
25512-42-9	Total Di PCBs		244	pg/L	6.44	19.4
25323-68-6	Total Tri PCBs		428	pg/L	6.44	19.4
26914-33-0	Total Tetra PCBs		3280	pg/L	6.44	19.4
25429-29-2	Total Penta PCBs		31300	pg/L	6.44	19.4
26601-64-9	Total Hexa PCBs		46300	pg/L	6.44	19.4
28655-71-2	Total Hepta PCBs		22800	pg/L	6.44	19.4
55722-26-4	Total Octa PCBs		4250	pg/L	6.44	19.4
53742-07-7	Total Nona PCBs		334	pg/L	6.44	19.4
2051-24-3	Total Deca PCB		43.1	pg/L	6.44	19.4
1336-36-3	Total PCB Congeners		109000	pg/L	6.44	19.4

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		987	1940	pg/L	51.0	(15%-150%)
13C-3-MoCB		1020	1940	pg/L	52.8	(15%-150%)
13C-4-DiCB		1130	1940	pg/L	58.5	(25%-150%)
13C-15-DiCB		1550	1940	pg/L	80.0	(25%-150%)
13C-19-TrCB		1420	1940	pg/L	73.6	(25%-150%)
13C-37-TrCB		1420	1940	pg/L	73.2	(25%-150%)
13C-54-TeCB		1140	1940	pg/L	58.8	(25%-150%)
13C-77-TeCB		1710	1940	pg/L	88.2	(25%-150%)
13C-81-TeCB		1730	1940	pg/L	89.6	(25%-150%)
13C-104-PeCB		1250	1940	pg/L	64.4	(25%-150%)
13C-105-PeCB		1590	1940	pg/L	82.3	(25%-150%)
13C-114-PeCB		1550	1940	pg/L	80.3	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944010**	**Date Collected:**	**10/13/2016 05:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 13:43**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-10**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1033.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1600	1940	pg/L	82.5	(25%-150%)
13C-123-PeCB		1610	1940	pg/L	83.4	(25%-150%)
13C-126-PeCB		1630	1940	pg/L	84.4	(25%-150%)
13C-155-HxCB		1200	1940	pg/L	62.3	(25%-150%)
13C-156-HxCB	C	2820	3870	pg/L	72.8	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1480	1940	pg/L	76.5	(25%-150%)
13C-169-HxCB		1430	1940	pg/L	74.0	(25%-150%)
13C-188-HpCB		1490	1940	pg/L	76.8	(25%-150%)
13C-189-HpCB		1480	1940	pg/L	76.7	(25%-150%)
13C-202-OcCB		1600	1940	pg/L	82.7	(25%-150%)
13C-205-OcCB		1740	1940	pg/L	89.9	(25%-150%)
13C-206-NoCB		1640	1940	pg/L	84.9	(25%-150%)
13C-208-NoCB		1600	1940	pg/L	82.7	(25%-150%)
13C-209-DeCB		1740	1940	pg/L	89.8	(25%-150%)
13C-28-TrCB		1120	1940	pg/L	57.9	(30%-135%)
13C-111-PeCB		1360	1940	pg/L	70.1	(30%-135%)
13C-178-HpCB		1420	1940	pg/L	73.3	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944011**	**Date Collected:**	**10/13/2016 05:42**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 14:49**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1025.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	3.32	pg/L	3.32	19.5
2051-61-8	2-MoCB	U	1.07	pg/L	1.07	19.5
2051-62-9	3-MoCB	U	1.27	pg/L	1.27	19.5
13029-08-8	4-DiCB	U	3.74	pg/L	3.74	19.5
16605-91-7	5-DiCB	U	4.49	pg/L	4.49	19.5
25569-80-6	6-DiCB	U	3.49	pg/L	3.49	19.5
33284-50-3	7-DiCB	U	3.92	pg/L	3.92	19.5
34883-43-7	8-DiCB	J	10.1	pg/L	3.22	19.5
34883-39-1	9-DiCB	U	3.82	pg/L	3.82	19.5
33146-45-1	10-DiCB	U	2.28	pg/L	2.28	19.5
2050-67-1	11-DiCB	J	76.9	pg/L	3.96	97.5
2974-92-7	12-DiCB	CU	4.06	pg/L	4.06	39.0
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	3.76	pg/L	3.76	19.5
2050-68-2	15-DiCB	U	4.52	pg/L	4.52	19.5
38444-78-9	16-TrCB	J	6.69	pg/L	2.26	19.5
37680-66-3	17-TrCB	J	5.21	pg/L	1.79	19.5
37680-65-2	18-TrCB	CJ	10.4	pg/L	1.50	39.0
38444-73-4	19-TrCB	J	3.14	pg/L	1.95	19.5
38444-84-7	20-TrCB	CJ	16.4	pg/L	1.33	39.0
55702-46-0	21-TrCB	CJ	11.2	pg/L	1.35	39.0
38444-85-8	22-TrCB	J	7.27	pg/L	1.44	19.5
55720-44-0	23-TrCB	U	1.38	pg/L	1.38	19.5
55702-45-9	24-TrCB	U	1.37	pg/L	1.37	19.5
55712-37-3	25-TrCB	U	1.29	pg/L	1.29	19.5
38444-81-4	26-TrCB	CJ	3.37	pg/L	1.25	39.0
38444-76-7	27-TrCB	U	1.25	pg/L	1.25	19.5
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	J	13.5	pg/L	1.21	19.5
38444-77-8	32-TrCB	J	3.10	pg/L	1.19	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944011**	**Date Collected:**	**10/13/2016 05:42**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 14:49**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1025.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.33	pg/L	1.33	19.5
37680-69-6	35-TrCB	U	1.81	pg/L	1.81	19.5
38444-87-0	36-TrCB	U	1.64	pg/L	1.64	19.5
38444-90-5	37-TrCB	J	6.22	pg/L	2.03	19.5
53555-66-1	38-TrCB	U	1.72	pg/L	1.72	19.5
38444-88-1	39-TrCB	U	1.74	pg/L	1.74	19.5
38444-93-8	40-TeCB	CJ	4.29	pg/L	2.07	39.0
52663-59-9	41-TeCB	U	2.73	pg/L	2.73	19.5
36559-22-5	42-TeCB	J	3.16	pg/L	2.59	19.5
70362-46-8	43-TeCB	U	2.91	pg/L	2.91	19.5
41464-39-5	44-TeCB	CJ	12.6	pg/L	2.15	58.5
70362-45-7	45-TeCB	CJ	3.84	pg/L	1.27	39.0
41464-47-5	46-TeCB	U	1.29	pg/L	1.29	19.5
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	2.46	pg/L	2.34	19.5
41464-40-8	49-TeCB	CJ	5.40	pg/L	1.99	39.0
62796-65-0	50-TeCB	CJ	2.05	pg/L	1.19	39.0
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	10.1	pg/L	2.09	19.5
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	.995	pg/L	0.995	19.5
74338-24-2	55-TeCB	U	1.52	pg/L	1.52	19.5
41464-43-1	56-TeCB	J	4.37	pg/L	1.58	19.5
70424-67-8	57-TeCB	U	1.35	pg/L	1.35	19.5
41464-49-7	58-TeCB	U	1.48	pg/L	1.48	19.5
74472-33-6	59-TeCB	CJ	2.07	pg/L	1.68	58.5
33025-41-1	60-TeCB	J	2.24	pg/L	1.50	19.5
33284-53-6	61-TeCB	CJ	15.3	pg/L	1.44	78.0
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	1.31	pg/L	1.31	19.5
52663-58-8	64-TeCB	J	4.66	pg/L	1.85	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944011**	**Date Collected:**	**10/13/2016 05:42**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 14:49**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1025.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	5.62	pg/L	1.33	19.5
73575-53-8	67-TeCB	U	1.21	pg/L	1.21	19.5
73575-52-7	68-TeCB	U	1.31	pg/L	1.31	19.5
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.25	pg/L	1.25	19.5
74338-23-1	73-TeCB	U	1.74	pg/L	1.74	19.5
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	1.58	pg/L	1.52	19.5
70362-49-1	78-TeCB	U	1.4	pg/L	1.40	19.5
41464-48-6	79-TeCB	U	1.23	pg/L	1.23	19.5
33284-52-5	80-TeCB	U	1.19	pg/L	1.19	19.5
70362-50-4	81-TeCB	U	1.48	pg/L	1.48	19.5
52663-62-4	82-PeCB	U	2.22	pg/L	2.22	19.5
60145-20-2	83-PeCB	U	2.22	pg/L	2.22	19.5
52663-60-2	84-PeCB	U	4.9	pg/L	4.90	19.5
65510-45-4	85-PeCB	CU	1.66	pg/L	1.66	58.5
55312-69-1	86-PeCB	CJ	11.0	pg/L	1.79	117
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	1.95	pg/L	1.95	39.0
73575-57-2	89-PeCB	U	2.01	pg/L	2.01	19.5
68194-07-0	90-PeCB	CJ	10.7	pg/L	1.74	58.5
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	1.99	pg/L	1.99	19.5
73575-56-1	93-PeCB	CU	1.97	pg/L	1.97	39.0
73575-55-0	94-PeCB	U	2.18	pg/L	2.18	19.5
38379-99-6	95-PeCB	J	10.5	pg/L	1.81	19.5
73575-54-9	96-PeCB	U	.858	pg/L	0.858	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944011**	**Date Collected:**	**10/13/2016 05:42**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 14:49**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1025.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	2.13	pg/L	2.13	39.0
38380-01-7	99-PeCB	J	2.69	pg/L	1.91	19.5
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	1.74	pg/L	1.74	19.5
56558-16-8	104-PeCB	U	.917	pg/L	0.917	19.5
32598-14-4	105-PeCB	J	6.65	pg/L	2.09	19.5
70424-69-0	106-PeCB	U	1.83	pg/L	1.83	19.5
70424-68-9	107-PeCB	U	1.56	pg/L	1.56	19.5
70362-41-3	108-PeCB	CU	1.83	pg/L	1.83	39.0
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	19.0	pg/L	1.72	39.0
39635-32-0	111-PeCB	U	1.62	pg/L	1.62	19.5
74472-36-9	112-PeCB	U	1.46	pg/L	1.46	19.5
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	2.03	pg/L	2.03	19.5
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	J	11.5	pg/L	1.89	19.5
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	1.42	pg/L	1.42	19.5
56558-18-0	121-PeCB	U	1.58	pg/L	1.58	19.5
76842-07-4	122-PeCB	U	1.87	pg/L	1.87	19.5
65510-44-3	123-PeCB	U	1.99	pg/L	1.99	19.5
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	2.38	pg/L	2.38	19.5
39635-33-1	127-PeCB	U	1.83	pg/L	1.83	19.5
38380-07-3	128-HxCB	CJ	3.76	pg/L	1.72	39.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944011**	**Date Collected:**	**10/13/2016 05:42**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 14:49**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1025.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	21.1	pg/L	1.89	58.5
52663-66-8	130-HxCB	U	2.09	pg/L	2.09	19.5
61798-70-7	131-HxCB	U	2.36	pg/L	2.36	19.5
38380-05-1	132-HxCB	J	6.83	pg/L	2.16	19.5
35694-04-3	133-HxCB	U	1.91	pg/L	1.91	19.5
52704-70-8	134-HxCB	U	2.46	pg/L	2.46	19.5
52744-13-5	135-HxCB	CJ	6.81	pg/L	1.25	39.0
38411-22-2	136-HxCB	J	2.73	pg/L	0.897	19.5
35694-06-5	137-HxCB	U	1.99	pg/L	1.99	19.5
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	1.83	pg/L	1.83	39.0
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	3.82	pg/L	1.91	19.5
41411-61-4	142-HxCB	U	2.03	pg/L	2.03	19.5
68194-15-0	143-HxCB	U	1.87	pg/L	1.87	19.5
68194-14-9	144-HxCB	J	1.21	pg/L	1.19	19.5
74472-40-5	145-HxCB	U	1.01	pg/L	1.01	19.5
51908-16-8	146-HxCB	J	1.83	pg/L	1.46	19.5
68194-13-8	147-HxCB	CJ	13.2	pg/L	1.79	39.0
74472-41-6	148-HxCB	U	1.15	pg/L	1.15	19.5
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.975	pg/L	0.975	19.5
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.878	pg/L	0.878	19.5
35065-27-1	153-HxCB	CJ	12.8	pg/L	1.54	39.0
60145-22-4	154-HxCB	U	1.05	pg/L	1.05	19.5
33979-03-2	155-HxCB	U	.819	pg/L	0.819	19.5
38380-08-4	156-HxCB	CJ	3.32	pg/L	1.76	39.0
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	2.11	pg/L	1.33	19.5
39635-35-3	159-HxCB	U	1.27	pg/L	1.27	19.5
41411-62-5	160-HxCB	U	1.74	pg/L	1.74	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944011**	**Date Collected:**	**10/13/2016 05:42**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 14:49**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1025.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.4	pg/L	1.40	19.5
39635-34-2	162-HxCB	U	1.37	pg/L	1.37	19.5
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	1.46	pg/L	1.46	19.5
74472-46-1	165-HxCB	U	1.68	pg/L	1.68	19.5
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	1.27	pg/L	1.27	19.5
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.5	pg/L	1.50	19.5
35065-30-6	170-HpCB	J	4.72	pg/L	1.72	19.5
52663-71-5	171-HpCB	CU	1.76	pg/L	1.76	39.0
52663-74-8	172-HpCB	U	1.74	pg/L	1.74	19.5
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	5.11	pg/L	1.70	19.5
40186-70-7	175-HpCB	U	1.17	pg/L	1.17	19.5
52663-65-7	176-HpCB	U	.897	pg/L	0.897	19.5
52663-70-4	177-HpCB	J	2.40	pg/L	1.79	19.5
52663-67-9	178-HpCB	U	1.23	pg/L	1.23	19.5
52663-64-6	179-HpCB	J	2.09	pg/L	0.897	19.5
35065-29-3	180-HpCB	CJ	10.4	pg/L	1.48	39.0
74472-47-2	181-HpCB	U	1.81	pg/L	1.81	19.5
60145-23-5	182-HpCB	U	1.17	pg/L	1.17	19.5
52663-69-1	183-HpCB	CJ	3.51	pg/L	1.68	39.0
74472-48-3	184-HpCB	U	.897	pg/L	0.897	19.5
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.995	pg/L	0.995	19.5
52663-68-0	187-HpCB	J	5.97	pg/L	1.23	19.5
74487-85-7	188-HpCB	U	.878	pg/L	0.878	19.5
39635-31-9	189-HpCB	U	1.46	pg/L	1.46	19.5
41411-64-7	190-HpCB	U	1.31	pg/L	1.31	19.5
74472-50-7	191-HpCB	U	1.27	pg/L	1.27	19.5
74472-51-8	192-HpCB	U	1.5	pg/L	1.50	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944011**	**Date Collected:**	**10/13/2016 05:42**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 14:49**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1025.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	U	2.38	pg/L	2.38	19.5
52663-78-2	195-OcCB	U	1.38	pg/L	1.38	19.5
42740-50-1	196-OcCB	U	1.85	pg/L	1.85	19.5
33091-17-7	197-OcCB	CU	.995	pg/L	0.995	39.0
68194-17-2	198-OcCB	CJ	3.06	pg/L	1.33	39.0
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	.975	pg/L	0.975	19.5
2136-99-4	202-OcCB	J	1.52	pg/L	1.03	19.5
52663-76-0	203-OcCB	J	2.36	pg/L	1.27	19.5
74472-52-9	204-OcCB	U	.975	pg/L	0.975	19.5
74472-53-0	205-OcCB	U	1.19	pg/L	1.19	19.5
40186-72-9	206-NoCB	J	1.52	pg/L	1.40	19.5
52663-79-3	207-NoCB	U	.995	pg/L	0.995	19.5
52663-77-1	208-NoCB	U	1.09	pg/L	1.09	19.5
2051-24-3	209-DeCB	U	1.68	pg/L	1.68	19.5
27323-18-8	Total Mono PCBs	U	0	pg/L	6.49	19.5
25512-42-9	Total Di PCBs		87.0	pg/L	6.49	19.5
25323-68-6	Total Tri PCBs		86.6	pg/L	6.49	19.5
26914-33-0	Total Tetra PCBs		79.7	pg/L	6.49	19.5
25429-29-2	Total Penta PCBs		72.0	pg/L	6.49	19.5
26601-64-9	Total Hexa PCBs		79.5	pg/L	6.49	19.5
28655-71-2	Total Hepta PCBs		34.2	pg/L	6.49	19.5
55722-26-4	Total Octa PCBs	J	6.94	pg/L	6.49	19.5
53742-07-7	Total Nona PCBs	J	1.52	pg/L	6.49	19.5
2051-24-3	Total Deca PCB	U	0	pg/L	6.49	19.5
1336-36-3	Total PCB Congeners		447	pg/L	6.49	19.5

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		936	1950	pg/L	48.0	(15%-150%)
13C-3-MoCB		994	1950	pg/L	51.0	(15%-150%)
13C-4-DiCB		1130	1950	pg/L	57.8	(25%-150%)
13C-15-DiCB		1520	1950	pg/L	77.8	(25%-150%)
13C-19-TrCB		1390	1950	pg/L	71.1	(25%-150%)
13C-37-TrCB		1390	1950	pg/L	71.4	(25%-150%)
13C-54-TeCB		1090	1950	pg/L	56.1	(25%-150%)
13C-77-TeCB		1630	1950	pg/L	83.8	(25%-150%)
13C-81-TeCB		1630	1950	pg/L	83.7	(25%-150%)
13C-104-PeCB		1220	1950	pg/L	62.8	(25%-150%)
13C-105-PeCB		1460	1950	pg/L	75.1	(25%-150%)
13C-114-PeCB		1440	1950	pg/L	73.7	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944011**	**Date Collected:**	**10/13/2016 05:42**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 14:49**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_2-11**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1025.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1460	1950	pg/L	74.9	(25%-150%)
13C-123-PeCB		1480	1950	pg/L	75.6	(25%-150%)
13C-126-PeCB		1480	1950	pg/L	76.1	(25%-150%)
13C-155-HxCB		1230	1950	pg/L	63.2	(25%-150%)
13C-156-HxCB	C	2680	3900	pg/L	68.8	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1400	1950	pg/L	71.6	(25%-150%)
13C-169-HxCB		1350	1950	pg/L	69.2	(25%-150%)
13C-188-HpCB		1520	1950	pg/L	78.1	(25%-150%)
13C-189-HpCB		1430	1950	pg/L	73.4	(25%-150%)
13C-202-OcCB		1610	1950	pg/L	82.4	(25%-150%)
13C-205-OcCB		1700	1950	pg/L	87.0	(25%-150%)
13C-206-NoCB		1650	1950	pg/L	84.4	(25%-150%)
13C-208-NoCB		1550	1950	pg/L	79.6	(25%-150%)
13C-209-DeCB		1630	1950	pg/L	83.4	(25%-150%)
13C-28-TrCB		1150	1950	pg/L	58.9	(30%-135%)
13C-111-PeCB		1330	1950	pg/L	68.0	(30%-135%)
13C-178-HpCB		1390	1950	pg/L	71.5	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944012**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 18:20**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**972.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	2.98	pg/L	1.25	20.6
2051-61-8	2-MoCB	U	1.23	pg/L	1.23	20.6
2051-62-9	3-MoCB	J	2.34	pg/L	1.30	20.6
13029-08-8	4-DiCB	J	5.80	pg/L	2.26	20.6
16605-91-7	5-DiCB	U	2.32	pg/L	2.32	20.6
25569-80-6	6-DiCB	U	1.83	pg/L	1.83	20.6
33284-50-3	7-DiCB	U	2.04	pg/L	2.04	20.6
34883-43-7	8-DiCB	J	10.9	pg/L	1.73	20.6
34883-39-1	9-DiCB	U	2.04	pg/L	2.04	20.6
33146-45-1	10-DiCB	U	1.23	pg/L	1.23	20.6
2050-67-1	11-DiCB	J	87.5	pg/L	2.04	103
2974-92-7	12-DiCB	CU	2.12	pg/L	2.12	41.1
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	1.93	pg/L	1.93	20.6
2050-68-2	15-DiCB	J	8.51	pg/L	2.22	20.6
38444-78-9	16-TrCB	J	6.91	pg/L	1.60	20.6
37680-66-3	17-TrCB	J	5.72	pg/L	1.38	20.6
37680-65-2	18-TrCB	CJ	12.1	pg/L	1.15	41.1
38444-73-4	19-TrCB	J	2.59	pg/L	1.67	20.6
38444-84-7	20-TrCB	CJ	18.5	pg/L	1.01	41.1
55702-46-0	21-TrCB	CJ	10.3	pg/L	0.987	41.1
38444-85-8	22-TrCB	J	8.04	pg/L	1.07	20.6
55720-44-0	23-TrCB	U	1.05	pg/L	1.05	20.6
55702-45-9	24-TrCB	U	1.11	pg/L	1.11	20.6
55712-37-3	25-TrCB	J	1.50	pg/L	0.987	20.6
38444-81-4	26-TrCB	CJ	3.21	pg/L	0.925	41.1
38444-76-7	27-TrCB	J	1.58	pg/L	0.966	20.6
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	J	13.1	pg/L	0.884	20.6
38444-77-8	32-TrCB	J	3.56	pg/L	0.905	20.6

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944012**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 18:20**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**972.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	.966	pg/L	0.966	20.6
37680-69-6	35-TrCB	J	1.89	pg/L	1.05	20.6
38444-87-0	36-TrCB	U	.946	pg/L	0.946	20.6
38444-90-5	37-TrCB	J	8.06	pg/L	1.11	20.6
53555-66-1	38-TrCB	U	.987	pg/L	0.987	20.6
38444-88-1	39-TrCB	U	1.01	pg/L	1.01	20.6
38444-93-8	40-TeCB	CJ	9.58	pg/L	1.09	41.1
52663-59-9	41-TeCB	J	2.73	pg/L	1.34	20.6
36559-22-5	42-TeCB	J	5.57	pg/L	1.38	20.6
70362-46-8	43-TeCB	U	1.6	pg/L	1.60	20.6
41464-39-5	44-TeCB	CJ	27.1	pg/L	1.11	61.7
70362-45-7	45-TeCB	CJ	5.70	pg/L	0.679	41.1
41464-47-5	46-TeCB	J	2.34	pg/L	0.740	20.6
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	3.58	pg/L	1.21	20.6
41464-40-8	49-TeCB	CJ	11.7	pg/L	1.05	41.1
62796-65-0	50-TeCB	CJ	3.72	pg/L	0.658	41.1
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		34.1	pg/L	1.09	20.6
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	J	0.843	pg/L	0.596	20.6
74338-24-2	55-TeCB	U	1.19	pg/L	1.19	20.6
41464-43-1	56-TeCB	J	8.29	pg/L	1.21	20.6
70424-67-8	57-TeCB	U	1.05	pg/L	1.05	20.6
41464-49-7	58-TeCB	U	1.11	pg/L	1.11	20.6
74472-33-6	59-TeCB	CJ	3.48	pg/L	0.864	61.7
33025-41-1	60-TeCB	J	4.11	pg/L	1.17	20.6
33284-53-6	61-TeCB	CJ	38.2	pg/L	1.11	82.3
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	J	1.19	pg/L	0.987	20.6
52663-58-8	64-TeCB	J	10.1	pg/L	0.966	20.6

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944012**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 18:20**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**972.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	11.4	pg/L	0.987	20.6
73575-53-8	67-TeCB	J	1.17	pg/L	0.946	20.6
73575-52-7	68-TeCB	U	1.03	pg/L	1.03	20.6
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.01	pg/L	1.01	20.6
74338-23-1	73-TeCB	J	1.34	pg/L	0.925	20.6
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	3.87	pg/L	1.17	20.6
70362-49-1	78-TeCB	U	1.07	pg/L	1.07	20.6
41464-48-6	79-TeCB	U	.925	pg/L	0.925	20.6
33284-52-5	80-TeCB	U	.925	pg/L	0.925	20.6
70362-50-4	81-TeCB	U	1.11	pg/L	1.11	20.6
52663-62-4	82-PeCB	J	9.27	pg/L	1.19	20.6
60145-20-2	83-PeCB	J	5.70	pg/L	1.17	20.6
52663-60-2	84-PeCB		32.0	pg/L	1.17	20.6
65510-45-4	85-PeCB	CJ	11.8	pg/L	0.884	61.7
55312-69-1	86-PeCB	CJ	55.7	pg/L	0.966	123
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CJ	14.7	pg/L	1.09	41.1
73575-57-2	89-PeCB	J	1.71	pg/L	1.11	20.6
68194-07-0	90-PeCB	C	71.0	pg/L	0.946	61.7
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	14.9	pg/L	1.07	20.6
73575-56-1	93-PeCB	CJ	1.52	pg/L	1.07	41.1
73575-55-0	94-PeCB	U	1.23	pg/L	1.23	20.6
38379-99-6	95-PeCB		96.2	pg/L	1.01	20.6
73575-54-9	96-PeCB	J	1.19	pg/L	0.473	20.6

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944012**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 18:20**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**972.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CJ	3.60	pg/L	1.21	41.1
38380-01-7	99-PeCB		25.7	pg/L	0.987	20.6
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	J	1.21	pg/L	0.946	20.6
56558-16-8	104-PeCB	J	0.946	pg/L	0.555	20.6
32598-14-4	105-PeCB		26.2	pg/L	1.17	20.6
70424-69-0	106-PeCB	U	1.03	pg/L	1.03	20.6
70424-68-9	107-PeCB	J	3.19	pg/L	0.864	20.6
70362-41-3	108-PeCB	CJ	3.50	pg/L	1.03	41.1
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	135	pg/L	0.925	41.1
39635-32-0	111-PeCB	U	.843	pg/L	0.843	20.6
74472-36-9	112-PeCB	U	.823	pg/L	0.823	20.6
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	J	1.71	pg/L	1.11	20.6
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		58.1	pg/L	1.05	20.6
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	.74	pg/L	0.740	20.6
56558-18-0	121-PeCB	U	.864	pg/L	0.864	20.6
76842-07-4	122-PeCB	J	1.21	pg/L	1.03	20.6
65510-44-3	123-PeCB	U	1.11	pg/L	1.11	20.6
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	1.27	pg/L	1.27	20.6
39635-33-1	127-PeCB	U	1.01	pg/L	1.01	20.6
38380-07-3	128-HxCB	CJ	20.4	pg/L	0.843	41.1

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944012**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 18:20**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**972.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	136	pg/L	0.905	61.7
52663-66-8	130-HxCB	J	8.76	pg/L	1.01	20.6
61798-70-7	131-HxCB	J	3.17	pg/L	1.19	20.6
38380-05-1	132-HxCB		55.3	pg/L	1.09	20.6
35694-04-3	133-HxCB	J	1.99	pg/L	0.946	20.6
52704-70-8	134-HxCB	J	9.15	pg/L	1.21	20.6
52744-13-5	135-HxCB	C	49.7	pg/L	0.720	41.1
38411-22-2	136-HxCB	J	19.3	pg/L	0.514	20.6
35694-06-5	137-HxCB	J	6.17	pg/L	0.946	20.6
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CJ	2.92	pg/L	0.905	41.1
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		23.8	pg/L	0.925	20.6
41411-61-4	142-HxCB	U	1.01	pg/L	1.01	20.6
68194-15-0	143-HxCB	U	.966	pg/L	0.966	20.6
68194-14-9	144-HxCB	J	6.99	pg/L	0.679	20.6
74472-40-5	145-HxCB	U	.596	pg/L	0.596	20.6
51908-16-8	146-HxCB	J	13.2	pg/L	0.720	20.6
68194-13-8	147-HxCB	C	112	pg/L	0.905	41.1
74472-41-6	148-HxCB	U	.679	pg/L	0.679	20.6
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.576	pg/L	0.576	20.6
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.514	pg/L	0.514	20.6
35065-27-1	153-HxCB	C	83.6	pg/L	0.740	41.1
60145-22-4	154-HxCB	J	1.27	pg/L	0.596	20.6
33979-03-2	155-HxCB	U	.514	pg/L	0.514	20.6
38380-08-4	156-HxCB	CJ	12.8	pg/L	0.864	41.1
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	13.0	pg/L	0.637	20.6
39635-35-3	159-HxCB	U	.637	pg/L	0.637	20.6
41411-62-5	160-HxCB	U	.843	pg/L	0.843	20.6

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944012**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 18:20**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**972.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	.679	pg/L	0.679	20.6
39635-34-2	162-HxCB	U	.679	pg/L	0.679	20.6
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	10.1	pg/L	0.720	20.6
74472-46-1	165-HxCB	U	.802	pg/L	0.802	20.6
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	4.79	pg/L	0.637	20.6
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	.72	pg/L	0.720	20.6
35065-30-6	170-HpCB	J	17.4	pg/L	0.617	20.6
52663-71-5	171-HpCB	CJ	8.29	pg/L	0.637	41.1
52663-74-8	172-HpCB	J	3.80	pg/L	0.637	20.6
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		26.5	pg/L	0.637	20.6
40186-70-7	175-HpCB	J	1.60	pg/L	0.535	20.6
52663-65-7	176-HpCB	J	4.07	pg/L	0.411	20.6
52663-70-4	177-HpCB	J	14.2	pg/L	0.658	20.6
52663-67-9	178-HpCB	J	5.16	pg/L	0.555	20.6
52663-64-6	179-HpCB	J	11.7	pg/L	0.411	20.6
35065-29-3	180-HpCB	C	41.9	pg/L	0.535	41.1
74472-47-2	181-HpCB	U	.658	pg/L	0.658	20.6
60145-23-5	182-HpCB	U	.535	pg/L	0.535	20.6
52663-69-1	183-HpCB	CJ	19.2	pg/L	0.617	41.1
74472-48-3	184-HpCB	U	.411	pg/L	0.411	20.6
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.452	pg/L	0.452	20.6
52663-68-0	187-HpCB		32.1	pg/L	0.555	20.6
74487-85-7	188-HpCB	U	.411	pg/L	0.411	20.6
39635-31-9	189-HpCB	U	.987	pg/L	0.987	20.6
41411-64-7	190-HpCB	J	3.52	pg/L	0.473	20.6
74472-50-7	191-HpCB	J	1.09	pg/L	0.452	20.6
74472-51-8	192-HpCB	U	.535	pg/L	0.535	20.6

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944012**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 18:20**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**972.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	5.80	pg/L	0.535	20.6
52663-78-2	195-OcCB	J	2.47	pg/L	0.576	20.6
42740-50-1	196-OcCB	J	3.78	pg/L	0.494	20.6
33091-17-7	197-OcCB	CJ	2.57	pg/L	0.411	41.1
68194-17-2	198-OcCB	CJ	9.15	pg/L	0.514	41.1
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	J	1.75	pg/L	0.391	20.6
2136-99-4	202-OcCB	J	2.20	pg/L	0.432	20.6
52663-76-0	203-OcCB	J	5.33	pg/L	0.514	20.6
74472-52-9	204-OcCB	U	.391	pg/L	0.391	20.6
74472-53-0	205-OcCB	J	0.658	pg/L	0.494	20.6
40186-72-9	206-NoCB	J	3.15	pg/L	0.658	20.6
52663-79-3	207-NoCB	J	0.946	pg/L	0.473	20.6
52663-77-1	208-NoCB	J	1.21	pg/L	0.514	20.6
2051-24-3	209-DeCB	J	2.20	pg/L	0.658	20.6
27323-18-8	Total Mono PCBs	J	5.33	pg/L	6.85	20.6
25512-42-9	Total Di PCBs		113	pg/L	6.85	20.6
25323-68-6	Total Tri PCBs		97.0	pg/L	6.85	20.6
26914-33-0	Total Tetra PCBs		190	pg/L	6.85	20.6
25429-29-2	Total Penta PCBs		576	pg/L	6.85	20.6
26601-64-9	Total Hexa PCBs		595	pg/L	6.85	20.6
28655-71-2	Total Hepta PCBs		190	pg/L	6.85	20.6
55722-26-4	Total Octa PCBs		33.7	pg/L	6.85	20.6
53742-07-7	Total Nona PCBs	J	5.31	pg/L	6.85	20.6
2051-24-3	Total Deca PCB	J	2.20	pg/L	6.85	20.6
1336-36-3	Total PCB Congeners		1810	pg/L	6.85	20.6

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1040	2060	pg/L	50.4	(15%-150%)
13C-3-MoCB		1130	2060	pg/L	54.7	(15%-150%)
13C-4-DiCB		1270	2060	pg/L	61.6	(25%-150%)
13C-15-DiCB		1970	2060	pg/L	96.0	(25%-150%)
13C-19-TrCB		1650	2060	pg/L	80.3	(25%-150%)
13C-37-TrCB		1660	2060	pg/L	80.9	(25%-150%)
13C-54-TeCB		1160	2060	pg/L	56.6	(25%-150%)
13C-77-TeCB		2090	2060	pg/L	102	(25%-150%)
13C-81-TeCB		2100	2060	pg/L	102	(25%-150%)
13C-104-PeCB		1330	2060	pg/L	64.9	(25%-150%)
13C-105-PeCB		1790	2060	pg/L	87.3	(25%-150%)
13C-114-PeCB		1750	2060	pg/L	85.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944012**	**Date Collected:**	**10/13/2016 05:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 18:20**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-3**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**972.6 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1790	2060	pg/L	87.0	(25%-150%)
13C-123-PeCB		1800	2060	pg/L	87.7	(25%-150%)
13C-126-PeCB		1910	2060	pg/L	93.0	(25%-150%)
13C-155-HxCB		1280	2060	pg/L	62.4	(25%-150%)
13C-156-HxCB	C	3160	4110	pg/L	76.9	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1640	2060	pg/L	79.8	(25%-150%)
13C-169-HxCB		1640	2060	pg/L	79.7	(25%-150%)
13C-188-HpCB		1560	2060	pg/L	75.7	(25%-150%)
13C-189-HpCB		1620	2060	pg/L	78.9	(25%-150%)
13C-202-OcCB		1790	2060	pg/L	86.9	(25%-150%)
13C-205-OcCB		1950	2060	pg/L	94.9	(25%-150%)
13C-206-NoCB		1920	2060	pg/L	93.5	(25%-150%)
13C-208-NoCB		1780	2060	pg/L	86.8	(25%-150%)
13C-209-DeCB		1910	2060	pg/L	93.0	(25%-150%)
13C-28-TrCB		1300	2060	pg/L	63.0	(30%-135%)
13C-111-PeCB		1600	2060	pg/L	77.7	(30%-135%)
13C-178-HpCB		1660	2060	pg/L	80.7	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944013**	**Date Collected:**	**10/13/2016 06:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 19:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1030.7 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	3.32	pg/L	0.970	19.4
2051-61-8	2-MoCB	U	.99	pg/L	0.990	19.4
2051-62-9	3-MoCB	U	1.07	pg/L	1.07	19.4
13029-08-8	4-DiCB	J	8.03	pg/L	2.70	19.4
16605-91-7	5-DiCB	U	3.38	pg/L	3.38	19.4
25569-80-6	6-DiCB	U	4.62	pg/L	4.62	19.4
33284-50-3	7-DiCB	U	2.95	pg/L	2.95	19.4
34883-43-7	8-DiCB	J	13.3	pg/L	2.50	19.4
34883-39-1	9-DiCB	U	2.95	pg/L	2.95	19.4
33146-45-1	10-DiCB	U	1.67	pg/L	1.67	19.4
2050-67-1	11-DiCB	J	72.7	pg/L	2.97	97.0
2974-92-7	12-DiCB	CU	3.09	pg/L	3.09	38.8
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	2.81	pg/L	2.81	19.4
2050-68-2	15-DiCB	J	8.83	pg/L	3.42	19.4
38444-78-9	16-TrCB	J	9.29	pg/L	1.65	19.4
37680-66-3	17-TrCB	J	6.75	pg/L	1.44	19.4
37680-65-2	18-TrCB	CJ	12.9	pg/L	1.20	38.8
38444-73-4	19-TrCB	J	2.97	pg/L	1.55	19.4
38444-84-7	20-TrCB	CJ	18.0	pg/L	1.03	38.8
55702-46-0	21-TrCB	CJ	11.3	pg/L	1.03	38.8
38444-85-8	22-TrCB	J	8.65	pg/L	1.11	19.4
55720-44-0	23-TrCB	U	1.09	pg/L	1.09	19.4
55702-45-9	24-TrCB	U	1.14	pg/L	1.14	19.4
55712-37-3	25-TrCB	J	1.47	pg/L	1.03	19.4
38444-81-4	26-TrCB	CJ	3.18	pg/L	0.970	38.8
38444-76-7	27-TrCB	J	1.51	pg/L	1.01	19.4
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	J	13.8	pg/L	0.931	19.4
38444-77-8	32-TrCB	J	3.86	pg/L	0.951	19.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944013**	**Date Collected:**	**10/13/2016 06:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 19:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1030.7 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.01	pg/L	1.01	19.4
37680-69-6	35-TrCB	U	1.65	pg/L	1.65	19.4
38444-87-0	36-TrCB	U	1.49	pg/L	1.49	19.4
38444-90-5	37-TrCB	J	6.25	pg/L	1.82	19.4
53555-66-1	38-TrCB	U	1.53	pg/L	1.53	19.4
38444-88-1	39-TrCB	U	1.57	pg/L	1.57	19.4
38444-93-8	40-TeCB	CJ	6.21	pg/L	1.69	38.8
52663-59-9	41-TeCB	J	2.12	pg/L	2.08	19.4
36559-22-5	42-TeCB	J	4.02	pg/L	2.15	19.4
70362-46-8	43-TeCB	U	2.48	pg/L	2.48	19.4
41464-39-5	44-TeCB	CJ	15.4	pg/L	1.73	58.2
70362-45-7	45-TeCB	CJ	3.49	pg/L	1.32	38.8
41464-47-5	46-TeCB	U	1.46	pg/L	1.46	19.4
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	3.09	pg/L	1.88	19.4
41464-40-8	49-TeCB	CJ	6.42	pg/L	1.63	38.8
62796-65-0	50-TeCB	CU	2.1	pg/L	2.10	38.8
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		22.1	pg/L	1.69	19.4
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	1.01	pg/L	1.01	19.4
74338-24-2	55-TeCB	U	1.44	pg/L	1.44	19.4
41464-43-1	56-TeCB	J	4.93	pg/L	1.46	19.4
70424-67-8	57-TeCB	U	1.26	pg/L	1.26	19.4
41464-49-7	58-TeCB	U	1.34	pg/L	1.34	19.4
74472-33-6	59-TeCB	CJ	1.71	pg/L	1.36	58.2
33025-41-1	60-TeCB	J	2.79	pg/L	1.40	19.4
33284-53-6	61-TeCB	CJ	16.6	pg/L	1.34	77.6
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	1.16	pg/L	1.16	19.4
52663-58-8	64-TeCB	J	5.72	pg/L	1.51	19.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944013**	**Date Collected:**	**10/13/2016 06:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 19:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1030.7 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	6.71	pg/L	1.18	19.4
73575-53-8	67-TeCB	U	1.14	pg/L	1.14	19.4
73575-52-7	68-TeCB	U	1.24	pg/L	1.24	19.4
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.2	pg/L	1.20	19.4
74338-23-1	73-TeCB	U	1.42	pg/L	1.42	19.4
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	2.19	pg/L	1.47	19.4
70362-49-1	78-TeCB	U	1.3	pg/L	1.30	19.4
41464-48-6	79-TeCB	U	1.11	pg/L	1.11	19.4
33284-52-5	80-TeCB	U	1.11	pg/L	1.11	19.4
70362-50-4	81-TeCB	U	1.38	pg/L	1.38	19.4
52663-62-4	82-PeCB	U	1.63	pg/L	1.63	19.4
60145-20-2	83-PeCB	U	1.61	pg/L	1.61	19.4
52663-60-2	84-PeCB	J	3.57	pg/L	1.63	19.4
65510-45-4	85-PeCB	CJ	2.13	pg/L	1.20	58.2
55312-69-1	86-PeCB	CJ	10.1	pg/L	1.34	116
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	1.49	pg/L	1.49	38.8
73575-57-2	89-PeCB	U	1.51	pg/L	1.51	19.4
68194-07-0	90-PeCB	CJ	11.4	pg/L	1.30	58.2
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	2.10	pg/L	1.46	19.4
73575-56-1	93-PeCB	CU	1.47	pg/L	1.47	38.8
73575-55-0	94-PeCB	U	1.71	pg/L	1.71	19.4
38379-99-6	95-PeCB	J	9.43	pg/L	1.40	19.4
73575-54-9	96-PeCB	U	.834	pg/L	0.834	19.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944013**	**Date Collected:**	**10/13/2016 06:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 19:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1030.7 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	1.65	pg/L	1.65	38.8
38380-01-7	99-PeCB	J	3.78	pg/L	1.36	19.4
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	1.3	pg/L	1.30	19.4
56558-16-8	104-PeCB	U	.873	pg/L	0.873	19.4
32598-14-4	105-PeCB	J	5.61	pg/L	1.55	19.4
70424-69-0	106-PeCB	U	1.34	pg/L	1.34	19.4
70424-68-9	107-PeCB	U	1.14	pg/L	1.14	19.4
70362-41-3	108-PeCB	CU	1.36	pg/L	1.36	38.8
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	16.4	pg/L	1.26	38.8
39635-32-0	111-PeCB	U	1.18	pg/L	1.18	19.4
74472-36-9	112-PeCB	U	1.14	pg/L	1.14	19.4
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	1.49	pg/L	1.49	19.4
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	J	10.5	pg/L	1.40	19.4
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	1.03	pg/L	1.03	19.4
56558-18-0	121-PeCB	U	1.18	pg/L	1.18	19.4
76842-07-4	122-PeCB	U	1.36	pg/L	1.36	19.4
65510-44-3	123-PeCB	U	1.47	pg/L	1.47	19.4
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	1.73	pg/L	1.73	19.4
39635-33-1	127-PeCB	U	1.32	pg/L	1.32	19.4
38380-07-3	128-HxCB	CJ	3.22	pg/L	1.36	38.8

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944013**	**Date Collected:**	**10/13/2016 06:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 19:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1030.7 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	17.6	pg/L	1.47	58.2
52663-66-8	130-HxCB	U	1.63	pg/L	1.63	19.4
61798-70-7	131-HxCB	U	1.94	pg/L	1.94	19.4
38380-05-1	132-HxCB	J	6.15	pg/L	1.75	19.4
35694-04-3	133-HxCB	U	1.53	pg/L	1.53	19.4
52704-70-8	134-HxCB	U	1.96	pg/L	1.96	19.4
52744-13-5	135-HxCB	CJ	4.72	pg/L	1.18	38.8
38411-22-2	136-HxCB	J	1.67	pg/L	0.854	19.4
35694-06-5	137-HxCB	U	1.53	pg/L	1.53	19.4
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	1.46	pg/L	1.46	38.8
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	3.05	pg/L	1.49	19.4
41411-61-4	142-HxCB	U	1.63	pg/L	1.63	19.4
68194-15-0	143-HxCB	U	1.55	pg/L	1.55	19.4
68194-14-9	144-HxCB	U	1.09	pg/L	1.09	19.4
74472-40-5	145-HxCB	U	.97	pg/L	0.970	19.4
51908-16-8	146-HxCB	J	1.61	pg/L	1.16	19.4
68194-13-8	147-HxCB	CJ	9.80	pg/L	1.47	38.8
74472-41-6	148-HxCB	U	1.09	pg/L	1.09	19.4
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.931	pg/L	0.931	19.4
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.854	pg/L	0.854	19.4
35065-27-1	153-HxCB	CJ	10.8	pg/L	1.18	38.8
60145-22-4	154-HxCB	U	.97	pg/L	0.970	19.4
33979-03-2	155-HxCB	U	.776	pg/L	0.776	19.4
38380-08-4	156-HxCB	CJ	2.44	pg/L	1.32	38.8
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	1.94	pg/L	1.94	19.4
39635-35-3	159-HxCB	U	.931	pg/L	0.931	19.4
41411-62-5	160-HxCB	U	1.36	pg/L	1.36	19.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944013**	**Date Collected:**	**10/13/2016 06:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 19:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1030.7 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.11	pg/L	1.11	19.4
39635-34-2	162-HxCB	U	1.01	pg/L	1.01	19.4
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	1.42	pg/L	1.16	19.4
74472-46-1	165-HxCB	U	1.32	pg/L	1.32	19.4
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	1.03	pg/L	0.931	19.4
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.09	pg/L	1.09	19.4
35065-30-6	170-HpCB	J	3.43	pg/L	1.26	19.4
52663-71-5	171-HpCB	CJ	1.44	pg/L	1.32	38.8
52663-74-8	172-HpCB	U	1.28	pg/L	1.28	19.4
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	4.31	pg/L	1.28	19.4
40186-70-7	175-HpCB	U	1.07	pg/L	1.07	19.4
52663-65-7	176-HpCB	U	.834	pg/L	0.834	19.4
52663-70-4	177-HpCB	J	2.35	pg/L	1.32	19.4
52663-67-9	178-HpCB	J	1.24	pg/L	1.14	19.4
52663-64-6	179-HpCB	J	1.98	pg/L	0.815	19.4
35065-29-3	180-HpCB	CJ	8.42	pg/L	1.09	38.8
74472-47-2	181-HpCB	U	1.34	pg/L	1.34	19.4
60145-23-5	182-HpCB	U	1.07	pg/L	1.07	19.4
52663-69-1	183-HpCB	CJ	3.65	pg/L	1.22	38.8
74472-48-3	184-HpCB	U	.854	pg/L	0.854	19.4
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.931	pg/L	0.931	19.4
52663-68-0	187-HpCB	J	5.47	pg/L	1.11	19.4
74487-85-7	188-HpCB	U	.834	pg/L	0.834	19.4
39635-31-9	189-HpCB	U	1.14	pg/L	1.14	19.4
41411-64-7	190-HpCB	J	0.970	pg/L	0.951	19.4
74472-50-7	191-HpCB	U	.931	pg/L	0.931	19.4
74472-51-8	192-HpCB	U	1.11	pg/L	1.11	19.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944013**	**Date Collected:**	**10/13/2016 06:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 19:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1030.7 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	2.23	pg/L	1.07	19.4
52663-78-2	195-OcCB	U	1.14	pg/L	1.14	19.4
42740-50-1	196-OcCB	J	1.47	pg/L	1.01	19.4
33091-17-7	197-OcCB	CJ	1.14	pg/L	0.834	38.8
68194-17-2	198-OcCB	CJ	2.93	pg/L	1.09	38.8
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	.815	pg/L	0.815	19.4
2136-99-4	202-OcCB	J	1.38	pg/L	0.873	19.4
52663-76-0	203-OcCB	J	1.63	pg/L	1.07	19.4
74472-52-9	204-OcCB	U	.815	pg/L	0.815	19.4
74472-53-0	205-OcCB	U	.97	pg/L	0.970	19.4
40186-72-9	206-NoCB	U	1.79	pg/L	1.79	19.4
52663-79-3	207-NoCB	U	.854	pg/L	0.854	19.4
52663-77-1	208-NoCB	J	1.03	pg/L	0.912	19.4
2051-24-3	209-DeCB	J	1.96	pg/L	1.18	19.4
27323-18-8	Total Mono PCBs	J	3.32	pg/L	6.46	19.4
25512-42-9	Total Di PCBs		103	pg/L	6.46	19.4
25323-68-6	Total Tri PCBs		99.9	pg/L	6.46	19.4
26914-33-0	Total Tetra PCBs		103	pg/L	6.46	19.4
25429-29-2	Total Penta PCBs		75.2	pg/L	6.46	19.4
26601-64-9	Total Hexa PCBs		63.5	pg/L	6.46	19.4
28655-71-2	Total Hepta PCBs		33.3	pg/L	6.46	19.4
55722-26-4	Total Octa PCBs	J	10.8	pg/L	6.46	19.4
53742-07-7	Total Nona PCBs	J	1.03	pg/L	6.46	19.4
2051-24-3	Total Deca PCB	J	1.96	pg/L	6.46	19.4
1336-36-3	Total PCB Congeners		495	pg/L	6.46	19.4

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1020	1940	pg/L	52.5	(15%-150%)
13C-3-MoCB		1090	1940	pg/L	56.2	(15%-150%)
13C-4-DiCB		1240	1940	pg/L	64.1	(25%-150%)
13C-15-DiCB		1690	1940	pg/L	86.9	(25%-150%)
13C-19-TrCB		1520	1940	pg/L	78.3	(25%-150%)
13C-37-TrCB		1520	1940	pg/L	78.5	(25%-150%)
13C-54-TeCB		1150	1940	pg/L	59.3	(25%-150%)
13C-77-TeCB		1790	1940	pg/L	92.3	(25%-150%)
13C-81-TeCB		1800	1940	pg/L	92.8	(25%-150%)
13C-104-PeCB		1290	1940	pg/L	66.5	(25%-150%)
13C-105-PeCB		1570	1940	pg/L	81.1	(25%-150%)
13C-114-PeCB		1530	1940	pg/L	78.9	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944013**	**Date Collected:**	**10/13/2016 06:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 19:26**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1030.7 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1560	1940	pg/L	80.5	(25%-150%)
13C-123-PeCB		1570	1940	pg/L	81.2	(25%-150%)
13C-126-PeCB		1600	1940	pg/L	82.6	(25%-150%)
13C-155-HxCB		1310	1940	pg/L	67.4	(25%-150%)
13C-156-HxCB	C	2860	3880	pg/L	73.7	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1480	1940	pg/L	76.4	(25%-150%)
13C-169-HxCB		1470	1940	pg/L	75.9	(25%-150%)
13C-188-HpCB		1590	1940	pg/L	81.9	(25%-150%)
13C-189-HpCB		1510	1940	pg/L	78.0	(25%-150%)
13C-202-OcCB		1700	1940	pg/L	87.4	(25%-150%)
13C-205-OcCB		1790	1940	pg/L	92.4	(25%-150%)
13C-206-NoCB		1750	1940	pg/L	90.0	(25%-150%)
13C-208-NoCB		1670	1940	pg/L	86.0	(25%-150%)
13C-209-DeCB		1690	1940	pg/L	87.3	(25%-150%)
13C-28-TrCB		1220	1940	pg/L	62.8	(30%-135%)
13C-111-PeCB		1430	1940	pg/L	73.7	(30%-135%)
13C-178-HpCB		1480	1940	pg/L	76.4	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944014**	**Date Collected:**	**10/13/2016 08:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-OF**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 20:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1040.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	1.98	pg/L	1.98	19.2
2051-61-8	2-MoCB	U	1.94	pg/L	1.94	19.2
2051-62-9	3-MoCB	J	2.60	pg/L	1.81	19.2
13029-08-8	4-DiCB		21.6	pg/L	3.58	19.2
16605-91-7	5-DiCB	U	3.27	pg/L	3.27	19.2
25569-80-6	6-DiCB	J	6.82	pg/L	2.58	19.2
33284-50-3	7-DiCB	U	2.85	pg/L	2.85	19.2
34883-43-7	8-DiCB		29.2	pg/L	2.40	19.2
34883-39-1	9-DiCB	U	2.85	pg/L	2.85	19.2
33146-45-1	10-DiCB	U	1.52	pg/L	1.52	19.2
2050-67-1	11-DiCB	J	91.6	pg/L	2.86	96.1
2974-92-7	12-DiCB	CJ	11.2	pg/L	2.96	38.5
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	2.71	pg/L	2.71	19.2
2050-68-2	15-DiCB		79.0	pg/L	2.63	19.2
38444-78-9	16-TrCB		57.5	pg/L	1.42	19.2
37680-66-3	17-TrCB		44.7	pg/L	1.23	19.2
37680-65-2	18-TrCB	C	98.3	pg/L	1.02	38.5
38444-73-4	19-TrCB	J	15.4	pg/L	1.65	19.2
38444-84-7	20-TrCB	C	230	pg/L	0.884	38.5
55702-46-0	21-TrCB	C	66.6	pg/L	0.884	38.5
38444-85-8	22-TrCB		79.3	pg/L	0.942	19.2
55720-44-0	23-TrCB	U	.942	pg/L	0.942	19.2
55702-45-9	24-TrCB	U	.98	pg/L	0.980	19.2
55712-37-3	25-TrCB	J	11.7	pg/L	0.865	19.2
38444-81-4	26-TrCB	CJ	27.7	pg/L	0.827	38.5
38444-76-7	27-TrCB	J	9.21	pg/L	0.865	19.2
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		139	pg/L	0.788	19.2
38444-77-8	32-TrCB		36.0	pg/L	0.807	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944014**	**Date Collected:**	**10/13/2016 08:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-OF**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 20:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1040.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	.865	pg/L	0.865	19.2
37680-69-6	35-TrCB	J	7.29	pg/L	1.79	19.2
38444-87-0	36-TrCB	U	1.63	pg/L	1.63	19.2
38444-90-5	37-TrCB		116	pg/L	1.77	19.2
53555-66-1	38-TrCB	U	1.67	pg/L	1.67	19.2
38444-88-1	39-TrCB	U	1.71	pg/L	1.71	19.2
38444-93-8	40-TeCB	C	149	pg/L	0.731	38.5
52663-59-9	41-TeCB		31.6	pg/L	0.904	19.2
36559-22-5	42-TeCB		87.7	pg/L	0.923	19.2
70362-46-8	43-TeCB	J	14.9	pg/L	1.08	19.2
41464-39-5	44-TeCB	C	324	pg/L	0.750	57.7
70362-45-7	45-TeCB	C	39.8	pg/L	0.731	38.5
41464-47-5	46-TeCB	J	16.1	pg/L	0.788	19.2
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB		51.5	pg/L	0.807	19.2
41464-40-8	49-TeCB	C	161	pg/L	0.711	38.5
62796-65-0	50-TeCB	CJ	26.2	pg/L	0.711	38.5
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		372	pg/L	0.731	19.2
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	J	0.884	pg/L	0.634	19.2
74338-24-2	55-TeCB	J	5.31	pg/L	1.36	19.2
41464-43-1	56-TeCB		92.0	pg/L	1.40	19.2
70424-67-8	57-TeCB	J	1.75	pg/L	1.19	19.2
41464-49-7	58-TeCB	J	1.92	pg/L	1.29	19.2
74472-33-6	59-TeCB	CJ	25.4	pg/L	0.577	57.7
33025-41-1	60-TeCB		44.4	pg/L	1.35	19.2
33284-53-6	61-TeCB	C	449	pg/L	1.29	76.9
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	J	7.40	pg/L	1.12	19.2
52663-58-8	64-TeCB		160	pg/L	0.654	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944014**	**Date Collected:**	**10/13/2016 08:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-OF**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 20:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1040.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		172	pg/L	1.13	19.2
73575-53-8	67-TeCB	J	8.56	pg/L	1.10	19.2
73575-52-7	68-TeCB	J	1.46	pg/L	1.19	19.2
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	J	2.00	pg/L	1.15	19.2
74338-23-1	73-TeCB	J	5.83	pg/L	0.615	19.2
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB		27.5	pg/L	1.33	19.2
70362-49-1	78-TeCB	U	1.23	pg/L	1.23	19.2
41464-48-6	79-TeCB	J	6.94	pg/L	1.06	19.2
33284-52-5	80-TeCB	U	1.06	pg/L	1.06	19.2
70362-50-4	81-TeCB	U	1.29	pg/L	1.29	19.2
52663-62-4	82-PeCB		85.1	pg/L	1.40	19.2
60145-20-2	83-PeCB		36.4	pg/L	1.38	19.2
52663-60-2	84-PeCB		197	pg/L	1.40	19.2
65510-45-4	85-PeCB	C	110	pg/L	1.04	57.7
55312-69-1	86-PeCB	C	526	pg/L	1.15	115
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	C	92.8	pg/L	1.29	38.5
73575-57-2	89-PeCB	J	6.63	pg/L	1.31	19.2
68194-07-0	90-PeCB	C	662	pg/L	1.12	57.7
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB		121	pg/L	1.27	19.2
73575-56-1	93-PeCB	CJ	1.69	pg/L	1.29	38.5
73575-55-0	94-PeCB	J	3.25	pg/L	1.46	19.2
38379-99-6	95-PeCB		553	pg/L	1.21	19.2
73575-54-9	96-PeCB	J	4.25	pg/L	0.481	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944014**	**Date Collected:**	**10/13/2016 08:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-OF**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 20:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1040.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CJ	18.3	pg/L	1.42	38.5
38380-01-7	99-PeCB		257	pg/L	1.17	19.2
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	J	3.10	pg/L	1.12	19.2
56558-16-8	104-PeCB	U	.519	pg/L	0.519	19.2
32598-14-4	105-PeCB		277	pg/L	1.73	19.2
70424-69-0	106-PeCB	U	1.5	pg/L	1.50	19.2
70424-68-9	107-PeCB		35.1	pg/L	1.27	19.2
70362-41-3	108-PeCB	CJ	27.2	pg/L	1.50	38.5
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	1120	pg/L	1.10	38.5
39635-32-0	111-PeCB	U	1.02	pg/L	1.02	19.2
74472-36-9	112-PeCB	U	.98	pg/L	0.980	19.2
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	J	11.6	pg/L	1.65	19.2
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		617	pg/L	1.58	19.2
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	J	1.25	pg/L	0.884	19.2
56558-18-0	121-PeCB	U	1.02	pg/L	1.02	19.2
76842-07-4	122-PeCB	J	7.19	pg/L	1.50	19.2
65510-44-3	123-PeCB	J	10.4	pg/L	1.61	19.2
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	J	4.75	pg/L	1.90	19.2
39635-33-1	127-PeCB	U	1.48	pg/L	1.48	19.2
38380-07-3	128-HxCB	C	179	pg/L	1.25	38.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944014**	**Date Collected:**	**10/13/2016 08:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-OF**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 20:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1040.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	1090	pg/L	1.36	57.7
52663-66-8	130-HxCB		60.9	pg/L	1.48	19.2
61798-70-7	131-HxCB	J	17.0	pg/L	1.77	19.2
38380-05-1	132-HxCB		354	pg/L	1.61	19.2
35694-04-3	133-HxCB	J	9.65	pg/L	1.40	19.2
52704-70-8	134-HxCB		59.8	pg/L	1.81	19.2
52744-13-5	135-HxCB	C	215	pg/L	0.711	38.5
38411-22-2	136-HxCB		84.9	pg/L	0.519	19.2
35694-06-5	137-HxCB		54.8	pg/L	1.42	19.2
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CJ	15.1	pg/L	1.33	38.5
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		158	pg/L	1.36	19.2
41411-61-4	142-HxCB	U	1.5	pg/L	1.50	19.2
68194-15-0	143-HxCB	J	9.61	pg/L	1.42	19.2
68194-14-9	144-HxCB		33.1	pg/L	0.654	19.2
74472-40-5	145-HxCB	U	.577	pg/L	0.577	19.2
51908-16-8	146-HxCB		87.7	pg/L	1.08	19.2
68194-13-8	147-HxCB	C	583	pg/L	1.35	38.5
74472-41-6	148-HxCB	U	.654	pg/L	0.654	19.2
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	J	0.846	pg/L	0.577	19.2
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	J	0.711	pg/L	0.519	19.2
35065-27-1	153-HxCB	C	609	pg/L	1.10	38.5
60145-22-4	154-HxCB	J	5.17	pg/L	0.577	19.2
33979-03-2	155-HxCB	U	.481	pg/L	0.481	19.2
38380-08-4	156-HxCB	C	122	pg/L	1.40	38.5
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB		99.4	pg/L	0.961	19.2
39635-35-3	159-HxCB	U	1	pg/L	1.00	19.2
41411-62-5	160-HxCB	U	1.25	pg/L	1.25	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944014**	**Date Collected:**	**10/13/2016 08:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-OF**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 20:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1040.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.02	pg/L	1.02	19.2
39635-34-2	162-HxCB	J	4.15	pg/L	1.08	19.2
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB		63.7	pg/L	1.06	19.2
74472-46-1	165-HxCB	U	1.21	pg/L	1.21	19.2
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB		39.1	pg/L	1.02	19.2
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.15	pg/L	1.15	19.2
35065-30-6	170-HpCB		149	pg/L	0.942	19.2
52663-71-5	171-HpCB	C	46.7	pg/L	0.980	38.5
52663-74-8	172-HpCB		25.6	pg/L	0.961	19.2
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		146	pg/L	0.961	19.2
40186-70-7	175-HpCB	J	6.88	pg/L	0.750	19.2
52663-65-7	176-HpCB	J	15.5	pg/L	0.596	19.2
52663-70-4	177-HpCB		79.5	pg/L	0.980	19.2
52663-67-9	178-HpCB		25.1	pg/L	0.807	19.2
52663-64-6	179-HpCB		47.2	pg/L	0.577	19.2
35065-29-3	180-HpCB	C	316	pg/L	0.807	38.5
74472-47-2	181-HpCB	J	2.23	pg/L	1.00	19.2
60145-23-5	182-HpCB	J	1.23	pg/L	0.769	19.2
52663-69-1	183-HpCB	C	94.7	pg/L	0.923	38.5
74472-48-3	184-HpCB	U	.596	pg/L	0.596	19.2
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.654	pg/L	0.654	19.2
52663-68-0	187-HpCB		167	pg/L	0.788	19.2
74487-85-7	188-HpCB	U	.577	pg/L	0.577	19.2
39635-31-9	189-HpCB	J	6.42	pg/L	1.02	19.2
41411-64-7	190-HpCB		27.7	pg/L	0.711	19.2
74472-50-7	191-HpCB	J	6.34	pg/L	0.692	19.2
74472-51-8	192-HpCB	U	.827	pg/L	0.827	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944014**	**Date Collected:**	**10/13/2016 08:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-OF**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 20:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1040.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		55.9	pg/L	0.654	19.2
52663-78-2	195-OcCB		20.8	pg/L	0.692	19.2
42740-50-1	196-OcCB		30.0	pg/L	0.615	19.2
33091-17-7	197-OcCB	CJ	10.5	pg/L	0.500	38.5
68194-17-2	198-OcCB	C	70.3	pg/L	0.654	38.5
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	J	8.27	pg/L	0.500	19.2
2136-99-4	202-OcCB	J	12.3	pg/L	0.519	19.2
52663-76-0	203-OcCB		44.9	pg/L	0.634	19.2
74472-52-9	204-OcCB	U	.5	pg/L	0.500	19.2
74472-53-0	205-OcCB	J	2.79	pg/L	0.596	19.2
40186-72-9	206-NoCB		33.0	pg/L	1.00	19.2
52663-79-3	207-NoCB	J	4.09	pg/L	0.711	19.2
52663-77-1	208-NoCB	J	8.82	pg/L	0.788	19.2
2051-24-3	209-DeCB	J	8.27	pg/L	0.692	19.2
27323-18-8	Total Mono PCBs	J	2.60	pg/L	6.40	19.2
25512-42-9	Total Di PCBs		239	pg/L	6.40	19.2
25323-68-6	Total Tri PCBs		938	pg/L	6.40	19.2
26914-33-0	Total Tetra PCBs		2290	pg/L	6.40	19.2
25429-29-2	Total Penta PCBs		4790	pg/L	6.40	19.2
26601-64-9	Total Hexa PCBs		3960	pg/L	6.40	19.2
28655-71-2	Total Hepta PCBs		1160	pg/L	6.40	19.2
55722-26-4	Total Octa PCBs		256	pg/L	6.40	19.2
53742-07-7	Total Nona PCBs		45.9	pg/L	6.40	19.2
2051-24-3	Total Deca PCB	J	8.27	pg/L	6.40	19.2
1336-36-3	Total PCB Congeners		13700	pg/L	6.40	19.2

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		845	1920	pg/L	44.0	(15%-150%)
13C-3-MoCB		951	1920	pg/L	49.4	(15%-150%)
13C-4-DiCB		1020	1920	pg/L	53.2	(25%-150%)
13C-15-DiCB		1690	1920	pg/L	88.0	(25%-150%)
13C-19-TrCB		1410	1920	pg/L	73.4	(25%-150%)
13C-37-TrCB		1540	1920	pg/L	80.0	(25%-150%)
13C-54-TeCB		1020	1920	pg/L	52.9	(25%-150%)
13C-77-TeCB		1910	1920	pg/L	99.2	(25%-150%)
13C-81-TeCB		1910	1920	pg/L	99.3	(25%-150%)
13C-104-PeCB		1200	1920	pg/L	62.2	(25%-150%)
13C-105-PeCB		1590	1920	pg/L	82.9	(25%-150%)
13C-114-PeCB		1560	1920	pg/L	81.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**9944014**	**Date Collected:**	**10/13/2016 08:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**10/20/2016 10:25**		
Client ID:	**B18-OF**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/05/2016 20:32**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a_3-5**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1040.3 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1590	1920	pg/L	82.9	(25%-150%)
13C-123-PeCB		1600	1920	pg/L	83.0	(25%-150%)
13C-126-PeCB		1670	1920	pg/L	86.7	(25%-150%)
13C-155-HxCB		1220	1920	pg/L	63.5	(25%-150%)
13C-156-HxCB	C	2880	3850	pg/L	74.9	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1490	1920	pg/L	77.6	(25%-150%)
13C-169-HxCB		1500	1920	pg/L	78.0	(25%-150%)
13C-188-HpCB		1490	1920	pg/L	77.6	(25%-150%)
13C-189-HpCB		1500	1920	pg/L	78.1	(25%-150%)
13C-202-OcCB		1620	1920	pg/L	84.4	(25%-150%)
13C-205-OcCB		1780	1920	pg/L	92.5	(25%-150%)
13C-206-NoCB		1710	1920	pg/L	89.2	(25%-150%)
13C-208-NoCB		1620	1920	pg/L	84.1	(25%-150%)
13C-209-DeCB		1720	1920	pg/L	89.4	(25%-150%)
13C-28-TrCB		1210	1920	pg/L	63.1	(30%-135%)
13C-111-PeCB		1520	1920	pg/L	78.9	(30%-135%)
13C-178-HpCB		1550	1920	pg/L	80.7	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

PCB Congeners

Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017182	LCS for batch 33131	13C-1-MoCB		43.2	(15%-140%)
		13C-3-MoCB		49.1	(15%-140%)
		13C-4-DiCB		49.9	(30%-140%)
		13C-15-DiCB		87.7	(30%-140%)
		13C-19-TrCB		68.3	(30%-140%)
		13C-37-TrCB		95.2	(30%-140%)
		13C-54-TeCB		72.6	(30%-140%)
		13C-77-TeCB		108	(30%-140%)
		13C-81-TeCB		113	(30%-140%)
		13C-104-PeCB		76.7	(30%-140%)
		13C-105-PeCB		96.7	(30%-140%)
		13C-114-PeCB		97.4	(30%-140%)
		13C-118-PeCB		95.2	(30%-140%)
		13C-123-PeCB		103	(30%-140%)
		13C-126-PeCB		90.2	(30%-140%)
		13C-155-HxCB		86.4	(30%-140%)
		13C-156-HxCB	C	96.7	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		100	(30%-140%)
		13C-169-HxCB		92.8	(30%-140%)
		13C-188-HpCB		80.8	(30%-140%)
		13C-189-HpCB		89.6	(30%-140%)
		13C-202-OcCB		87.2	(30%-140%)
		13C-205-OcCB		103	(30%-140%)
		13C-206-NoCB		93.5	(30%-140%)
		13C-208-NoCB		89.2	(30%-140%)
		13C-209-DeCB		115	(30%-140%)
		13C-28-TrCB		54.3	(40%-125%)
		13C-111-PeCB		66.9	(40%-125%)
		13C-178-HpCB		71.3	(40%-125%)
12017183	LCSD for batch 33131	13C-1-MoCB		48.0	(15%-140%)
		13C-3-MoCB		52.8	(15%-140%)
		13C-4-DiCB		53.9	(30%-140%)
		13C-15-DiCB		91.3	(30%-140%)
		13C-19-TrCB		68.1	(30%-140%)
		13C-37-TrCB		88.0	(30%-140%)
		13C-54-TeCB		67.9	(30%-140%)
		13C-77-TeCB		99.9	(30%-140%)
		13C-81-TeCB		104	(30%-140%)
		13C-104-PeCB		71.2	(30%-140%)
		13C-105-PeCB		87.0	(30%-140%)
		13C-114-PeCB		86.5	(30%-140%)
		13C-118-PeCB		86.5	(30%-140%)
		13C-123-PeCB		92.5	(30%-140%)
		13C-126-PeCB		82.1	(30%-140%)
		13C-155-HxCB		78.7	(30%-140%)
		13C-156-HxCB	C	84.4	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		88.5	(30%-140%)
		13C-169-HxCB		81.9	(30%-140%)
		13C-188-HpCB		70.3	(30%-140%)
		13C-189-HpCB		78.2	(30%-140%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017183	LCSD for batch 33131	13C-202-OcCB		76.1	(30%-140%)
		13C-205-OcCB		90.3	(30%-140%)
		13C-206-NoCB		82.5	(30%-140%)
		13C-208-NoCB		78.0	(30%-140%)
		13C-209-DeCB		100	(30%-140%)
		13C-28-TrCB		65.7	(40%-125%)
		13C-111-PeCB		79.1	(40%-125%)
		13C-178-HpCB		81.6	(40%-125%)
12017181	MB for batch 33131	13C-1-MoCB		51.5	(15%-150%)
		13C-3-MoCB		55.9	(15%-150%)
		13C-4-DiCB		53.9	(25%-150%)
		13C-15-DiCB		105	(25%-150%)
		13C-19-TrCB		74.4	(25%-150%)
		13C-37-TrCB		101	(25%-150%)
		13C-54-TeCB		73.7	(25%-150%)
		13C-77-TeCB		116	(25%-150%)
		13C-81-TeCB		117	(25%-150%)
		13C-104-PeCB		81.6	(25%-150%)
		13C-105-PeCB		103	(25%-150%)
		13C-114-PeCB		102	(25%-150%)
		13C-118-PeCB		101	(25%-150%)
		13C-123-PeCB		108	(25%-150%)
		13C-126-PeCB		99.3	(25%-150%)
		13C-155-HxCB		86.8	(25%-150%)
		13C-156-HxCB	C	101	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		104	(25%-150%)
		13C-169-HxCB		97.5	(25%-150%)
		13C-188-HpCB		80.0	(25%-150%)
		13C-189-HpCB		92.8	(25%-150%)
		13C-202-OcCB		87.8	(25%-150%)
		13C-205-OcCB		105	(25%-150%)
		13C-206-NoCB		96.9	(25%-150%)
		13C-208-NoCB		88.1	(25%-150%)
		13C-209-DeCB		117	(25%-150%)
		13C-28-TrCB		69.1	(30%-135%)
		13C-111-PeCB		87.3	(30%-135%)
		13C-178-HpCB		88.5	(30%-135%)
9944001	B18-D-CB1	13C-1-MoCB		52.5	(15%-150%)
		13C-3-MoCB		54.0	(15%-150%)
		13C-4-DiCB		54.7	(25%-150%)
		13C-15-DiCB		113	(25%-150%)
		13C-19-TrCB		75.2	(25%-150%)
		13C-37-TrCB		98.0	(25%-150%)
		13C-54-TeCB		64.5	(25%-150%)
		13C-77-TeCB		123	(25%-150%)
		13C-81-TeCB		124	(25%-150%)
		13C-104-PeCB		75.3	(25%-150%)
		13C-105-PeCB		103	(25%-150%)
		13C-114-PeCB		100	(25%-150%)
		13C-118-PeCB		100	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9944001	B18-D-CB1	13C-123-PeCB		107	(25%-150%)
		13C-126-PeCB		98.9	(25%-150%)
		13C-155-HxCB		79.8	(25%-150%)
		13C-156-HxCB	C	98.5	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		101	(25%-150%)
		13C-169-HxCB		99.4	(25%-150%)
		13C-188-HpCB		72.6	(25%-150%)
		13C-189-HpCB		92.1	(25%-150%)
		13C-202-OcCB		81.3	(25%-150%)
		13C-205-OcCB		98.8	(25%-150%)
		13C-206-NoCB		86.6	(25%-150%)
		13C-208-NoCB		84.3	(25%-150%)
		13C-209-DeCB		102	(25%-150%)
		13C-28-TrCB		61.7	(30%-135%)
		13C-111-PeCB		83.2	(30%-135%)
		13C-178-HpCB		79.6	(30%-135%)
9944002	B18-D-CB2	13C-1-MoCB		49.1	(15%-150%)
		13C-3-MoCB		54.5	(15%-150%)
		13C-4-DiCB		53.7	(25%-150%)
		13C-15-DiCB		107	(25%-150%)
		13C-19-TrCB		74.6	(25%-150%)
		13C-37-TrCB		98.7	(25%-150%)
		13C-54-TeCB		61.6	(25%-150%)
		13C-77-TeCB		119	(25%-150%)
		13C-81-TeCB		121	(25%-150%)
		13C-104-PeCB		77.6	(25%-150%)
		13C-105-PeCB		99.1	(25%-150%)
		13C-114-PeCB		97.8	(25%-150%)
		13C-118-PeCB		98.5	(25%-150%)
		13C-123-PeCB		103	(25%-150%)
		13C-126-PeCB		95.0	(25%-150%)
		13C-155-HxCB		86.6	(25%-150%)
		13C-156-HxCB	C	102	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		106	(25%-150%)
		13C-169-HxCB		99.7	(25%-150%)
		13C-188-HpCB		74.5	(25%-150%)
		13C-189-HpCB		93.5	(25%-150%)
		13C-202-OcCB		86.2	(25%-150%)
		13C-205-OcCB		102	(25%-150%)
		13C-206-NoCB		90.2	(25%-150%)
		13C-208-NoCB		86.7	(25%-150%)
		13C-209-DeCB		105	(25%-150%)
		13C-28-TrCB		64.4	(30%-135%)
		13C-111-PeCB		87.3	(30%-135%)
		13C-178-HpCB		86.5	(30%-135%)
9944004	B18-F-1	13C-1-MoCB		56.9	(15%-150%)
		13C-3-MoCB		60.1	(15%-150%)
		13C-4-DiCB		57.1	(25%-150%)
		13C-15-DiCB		108	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9944004	B18-F-1	13C-19-TrCB		73.4	(25%-150%)
		13C-37-TrCB		104	(25%-150%)
		13C-54-TeCB		69.0	(25%-150%)
		13C-77-TeCB		123	(25%-150%)
		13C-81-TeCB		124	(25%-150%)
		13C-104-PeCB		83.7	(25%-150%)
		13C-105-PeCB		101	(25%-150%)
		13C-114-PeCB		96.0	(25%-150%)
		13C-118-PeCB		106	(25%-150%)
		13C-123-PeCB		110	(25%-150%)
		13C-126-PeCB		97.8	(25%-150%)
		13C-155-HxCB		91.3	(25%-150%)
		13C-156-HxCB	C	98.9	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		106	(25%-150%)
		13C-169-HxCB		94.5	(25%-150%)
		13C-188-HpCB		86.1	(25%-150%)
		13C-189-HpCB		95.4	(25%-150%)
		13C-202-OcCB		101	(25%-150%)
		13C-205-OcCB		106	(25%-150%)
		13C-206-NoCB		88.6	(25%-150%)
		13C-208-NoCB		92.8	(25%-150%)
		13C-209-DeCB		110	(25%-150%)
		13C-28-TrCB		67.8	(30%-135%)
		13C-111-PeCB		92.2	(30%-135%)
		13C-178-HpCB		89.8	(30%-135%)
9944005	B18-F-2	13C-1-MoCB		48.7	(15%-150%)
		13C-3-MoCB		51.5	(15%-150%)
		13C-4-DiCB		50.1	(25%-150%)
		13C-15-DiCB		104	(25%-150%)
		13C-19-TrCB		69.6	(25%-150%)
		13C-37-TrCB		101	(25%-150%)
		13C-54-TeCB		64.2	(25%-150%)
		13C-77-TeCB		124	(25%-150%)
		13C-81-TeCB		126	(25%-150%)
		13C-104-PeCB		76.8	(25%-150%)
		13C-105-PeCB		101	(25%-150%)
		13C-114-PeCB		102	(25%-150%)
		13C-118-PeCB		99.6	(25%-150%)
		13C-123-PeCB		104	(25%-150%)
		13C-126-PeCB		97.0	(25%-150%)
		13C-155-HxCB		83.6	(25%-150%)
		13C-156-HxCB	C	98.1	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		102	(25%-150%)
		13C-169-HxCB		93.0	(25%-150%)
		13C-188-HpCB		80.3	(25%-150%)
		13C-189-HpCB		94.3	(25%-150%)
		13C-202-OcCB		90.3	(25%-150%)
		13C-205-OcCB		98.7	(25%-150%)
		13C-206-NoCB		90.6	(25%-150%)
		13C-208-NoCB		86.7	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9944005	B18-F-2	13C-209-DeCB		101	(25%-150%)
		13C-28-TrCB		66.1	(30%-135%)
		13C-111-PeCB		88.7	(30%-135%)
		13C-178-HpCB		84.5	(30%-135%)
9944006	B18-F-3	13C-1-MoCB		57.4	(15%-150%)
		13C-3-MoCB		62.5	(15%-150%)
		13C-4-DiCB		59.8	(25%-150%)
		13C-15-DiCB		117	(25%-150%)
		13C-19-TrCB		81.6	(25%-150%)
		13C-37-TrCB		121	(25%-150%)
		13C-54-TeCB		74.6	(25%-150%)
		13C-77-TeCB		149	(25%-150%)
		13C-81-TeCB		151 *	(25%-150%)
		13C-104-PeCB		91.8	(25%-150%)
		13C-105-PeCB		122	(25%-150%)
		13C-114-PeCB		122	(25%-150%)
		13C-118-PeCB		122	(25%-150%)
		13C-123-PeCB		125	(25%-150%)
		13C-126-PeCB		120	(25%-150%)
		13C-155-HxCB		104	(25%-150%)
		13C-156-HxCB	C	122	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		128	(25%-150%)
		13C-169-HxCB		119	(25%-150%)
		13C-188-HpCB		95.0	(25%-150%)
		13C-189-HpCB		116	(25%-150%)
		13C-202-OcCB		112	(25%-150%)
		13C-205-OcCB		122	(25%-150%)
		13C-206-NoCB		106	(25%-150%)
		13C-208-NoCB		106	(25%-150%)
		13C-209-DeCB		120	(25%-150%)
		13C-28-TrCB		77.5	(30%-135%)
		13C-111-PeCB		106	(30%-135%)
		13C-178-HpCB		102	(30%-135%)
9944007	B18-F-4	13C-1-MoCB		47.3	(15%-150%)
		13C-3-MoCB		52.8	(15%-150%)
		13C-4-DiCB		53.2	(25%-150%)
		13C-15-DiCB		120	(25%-150%)
		13C-19-TrCB		75.9	(25%-150%)
		13C-37-TrCB		105	(25%-150%)
		13C-54-TeCB		60.2	(25%-150%)
		13C-77-TeCB		138	(25%-150%)
		13C-81-TeCB		140	(25%-150%)
		13C-104-PeCB		73.7	(25%-150%)
		13C-105-PeCB		109	(25%-150%)
		13C-114-PeCB		108	(25%-150%)
		13C-118-PeCB		106	(25%-150%)
		13C-123-PeCB		110	(25%-150%)
		13C-126-PeCB		110	(25%-150%)
		13C-155-HxCB		80.8	(25%-150%)
		13C-156-HxCB	C	103	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)		Acceptance Limits
9944007	B18-F-4	13C-157-HxCB	C156L			
		13C-167-HxCB		105		(25%-150%)
		13C-169-HxCB		103		(25%-150%)
		13C-188-HpCB		74.7		(25%-150%)
		13C-189-HpCB		95.6		(25%-150%)
		13C-202-OcCB		85.3		(25%-150%)
		13C-205-OcCB		103		(25%-150%)
		13C-206-NoCB		88.4		(25%-150%)
		13C-208-NoCB		86.2		(25%-150%)
		13C-209-DeCB		102		(25%-150%)
		13C-28-TrCB		57.8		(30%-135%)
		13C-111-PeCB		84.5		(30%-135%)
		13C-178-HpCB		78.9		(30%-135%)
9944008	B18-F-5	13C-1-MoCB		45.3		(15%-150%)
		13C-3-MoCB		50.1		(15%-150%)
		13C-4-DiCB		47.7		(25%-150%)
		13C-15-DiCB		96.4		(25%-150%)
		13C-19-TrCB		63.7		(25%-150%)
		13C-37-TrCB		91.6		(25%-150%)
		13C-54-TeCB		55.9		(25%-150%)
		13C-77-TeCB		117		(25%-150%)
		13C-81-TeCB		119		(25%-150%)
		13C-104-PeCB		68.3		(25%-150%)
		13C-105-PeCB		96.2		(25%-150%)
		13C-114-PeCB		95.8		(25%-150%)
		13C-118-PeCB		95.9		(25%-150%)
		13C-123-PeCB		99.8		(25%-150%)
		13C-126-PeCB		94.8		(25%-150%)
		13C-155-HxCB		72.8		(25%-150%)
		13C-156-HxCB	C	93.2		(25%-150%)
		13C-157-HxCB	C156L			
		13C-167-HxCB		97.2		(25%-150%)
		13C-169-HxCB		91.2		(25%-150%)
		13C-188-HpCB		66.2		(25%-150%)
		13C-189-HpCB		86.4		(25%-150%)
		13C-202-OcCB		78.7		(25%-150%)
		13C-205-OcCB		92.3		(25%-150%)
		13C-206-NoCB		79.7		(25%-150%)
		13C-208-NoCB		77.5		(25%-150%)
		13C-209-DeCB		92.0		(25%-150%)
		13C-28-TrCB		59.0		(30%-135%)
		13C-111-PeCB		83.1		(30%-135%)
		13C-178-HpCB		77.5		(30%-135%)
9944003	B18-D-CB3	13C-1-MoCB		63.7	D	(15%-150%)
		13C-3-MoCB		65.2	D	(15%-150%)
		13C-4-DiCB		67.7	D	(25%-150%)
		13C-15-DiCB		85.1	D	(25%-150%)
		13C-19-TrCB		78.3	D	(25%-150%)
		13C-37-TrCB		94.7	D	(25%-150%)
		13C-54-TeCB		85.9	D	(25%-150%)
		13C-77-TeCB		111	D	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)		Acceptance Limits
9944003	B18-D-CB3	13C-81-TeCB		115	D	(25%-150%)
		13C-104-PeCB		81.9	D	(25%-150%)
		13C-105-PeCB		94.0	D	(25%-150%)
		13C-114-PeCB		94.2	D	(25%-150%)
		13C-118-PeCB		94.9	D	(25%-150%)
		13C-123-PeCB		99.0	D	(25%-150%)
		13C-126-PeCB		90.4	D	(25%-150%)
		13C-155-HxCB		80.0	D	(25%-150%)
		13C-156-HxCB	C	89.1	D	(25%-150%)
		13C-157-HxCB	C156L			
		13C-167-HxCB		92.7	D	(25%-150%)
		13C-169-HxCB		84.6	D	(25%-150%)
		13C-188-HpCB		85.1	D	(25%-150%)
		13C-189-HpCB		84.0	D	(25%-150%)
		13C-202-OcCB		89.9	D	(25%-150%)
		13C-205-OcCB		92.6	D	(25%-150%)
		13C-206-NoCB		84.9	D	(25%-150%)
		13C-208-NoCB		87.4	D	(25%-150%)
		13C-209-DeCB		105	D	(25%-150%)
		13C-28-TrCB		79.1	D	(30%-135%)
		13C-111-PeCB		87.6	D	(30%-135%)
		13C-178-HpCB		94.6	D	(30%-135%)
12017235	LCS for batch 33181	13C-1-MoCB		54.4		(15%-140%)
		13C-3-MoCB		60.8		(15%-140%)
		13C-4-DiCB		61.6		(30%-140%)
		13C-15-DiCB		90.1		(30%-140%)
		13C-19-TrCB		79.8		(30%-140%)
		13C-37-TrCB		87.6		(30%-140%)
		13C-54-TeCB		68.0		(30%-140%)
		13C-77-TeCB		99.3		(30%-140%)
		13C-81-TeCB		101		(30%-140%)
		13C-104-PeCB		67.8		(30%-140%)
		13C-105-PeCB		87.3		(30%-140%)
		13C-114-PeCB		86.0		(30%-140%)
		13C-118-PeCB		87.4		(30%-140%)
		13C-123-PeCB		87.7		(30%-140%)
		13C-126-PeCB		87.5		(30%-140%)
		13C-155-HxCB		75.0		(30%-140%)
		13C-156-HxCB	C	79.8		(30%-140%)
		13C-157-HxCB	C156L			
		13C-167-HxCB		83.4		(30%-140%)
		13C-169-HxCB		79.6		(30%-140%)
		13C-188-HpCB		88.3		(30%-140%)
		13C-189-HpCB		85.2		(30%-140%)
		13C-202-OcCB		91.9		(30%-140%)
		13C-205-OcCB		99.5		(30%-140%)
		13C-206-NoCB		96.8		(30%-140%)
		13C-208-NoCB		92.6		(30%-140%)
		13C-209-DeCB		99.2		(30%-140%)
		13C-28-TrCB		66.1		(40%-125%)
		13C-111-PeCB		73.3		(40%-125%)
		13C-178-HpCB		76.5		(40%-125%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017236	LCSD for batch 33181	13C-1-MoCB		42.4	(15%-140%)
		13C-3-MoCB		46.5	(15%-140%)
		13C-4-DiCB		47.1	(30%-140%)
		13C-15-DiCB		66.0	(30%-140%)
		13C-19-TrCB		60.6	(30%-140%)
		13C-37-TrCB		61.1	(30%-140%)
		13C-54-TeCB		51.0	(30%-140%)
		13C-77-TeCB		65.9	(30%-140%)
		13C-81-TeCB		67.5	(30%-140%)
		13C-104-PeCB		49.9	(30%-140%)
		13C-105-PeCB		59.6	(30%-140%)
		13C-114-PeCB		59.2	(30%-140%)
		13C-118-PeCB		60.3	(30%-140%)
		13C-123-PeCB		61.0	(30%-140%)
		13C-126-PeCB		59.0	(30%-140%)
		13C-155-HxCB		52.9	(30%-140%)
		13C-156-HxCB	C	54.7	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		57.0	(30%-140%)
		13C-169-HxCB		53.5	(30%-140%)
		13C-188-HpCB		60.9	(30%-140%)
		13C-189-HpCB		58.6	(30%-140%)
		13C-202-OcCB		64.2	(30%-140%)
		13C-205-OcCB		67.8	(30%-140%)
		13C-206-NoCB		66.1	(30%-140%)
		13C-208-NoCB		64.3	(30%-140%)
		13C-209-DeCB		68.1	(30%-140%)
		13C-28-TrCB		51.7	(40%-125%)
		13C-111-PeCB		53.7	(40%-125%)
		13C-178-HpCB		55.2	(40%-125%)
12017234	MB for batch 33181	13C-1-MoCB		55.1	(15%-150%)
		13C-3-MoCB		60.8	(15%-150%)
		13C-4-DiCB		63.0	(25%-150%)
		13C-15-DiCB		90.9	(25%-150%)
		13C-19-TrCB		83.1	(25%-150%)
		13C-37-TrCB		88.5	(25%-150%)
		13C-54-TeCB		67.9	(25%-150%)
		13C-77-TeCB		97.9	(25%-150%)
		13C-81-TeCB		99.4	(25%-150%)
		13C-104-PeCB		70.4	(25%-150%)
		13C-105-PeCB		87.6	(25%-150%)
		13C-114-PeCB		86.6	(25%-150%)
		13C-118-PeCB		88.1	(25%-150%)
		13C-123-PeCB		88.8	(25%-150%)
		13C-126-PeCB		87.3	(25%-150%)
		13C-155-HxCB		74.4	(25%-150%)
		13C-156-HxCB	C	79.1	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		83.0	(25%-150%)
		13C-169-HxCB		79.0	(25%-150%)
		13C-188-HpCB		89.7	(25%-150%)
		13C-189-HpCB		84.7	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017234	MB for batch 33181	13C-202-OcCB		94.9	(25%-150%)
		13C-205-OcCB		100	(25%-150%)
		13C-206-NoCB		98.1	(25%-150%)
		13C-208-NoCB		94.2	(25%-150%)
		13C-209-DeCB		101	(25%-150%)
		13C-28-TrCB		53.2	(30%-135%)
		13C-111-PeCB		61.9	(30%-135%)
		13C-178-HpCB		64.3	(30%-135%)
9944009	B18-F-6	13C-1-MoCB		52.9	(15%-150%)
		13C-3-MoCB		60.1	(15%-150%)
		13C-4-DiCB		63.1	(25%-150%)
		13C-15-DiCB		100	(25%-150%)
		13C-19-TrCB		84.6	(25%-150%)
		13C-37-TrCB		91.7	(25%-150%)
		13C-54-TeCB		64.0	(25%-150%)
		13C-77-TeCB		107	(25%-150%)
		13C-81-TeCB		107	(25%-150%)
		13C-104-PeCB		71.4	(25%-150%)
		13C-105-PeCB		90.8	(25%-150%)
		13C-114-PeCB		88.9	(25%-150%)
		13C-118-PeCB		91.2	(25%-150%)
		13C-123-PeCB		92.0	(25%-150%)
		13C-126-PeCB		92.4	(25%-150%)
		13C-155-HxCB		73.7	(25%-150%)
		13C-156-HxCB	C	80.8	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		84.4	(25%-150%)
		13C-169-HxCB		81.0	(25%-150%)
		13C-188-HpCB		94.3	(25%-150%)
		13C-189-HpCB		86.8	(25%-150%)
		13C-202-OcCB		98.0	(25%-150%)
		13C-205-OcCB		101	(25%-150%)
		13C-206-NoCB		97.7	(25%-150%)
		13C-208-NoCB		94.9	(25%-150%)
		13C-209-DeCB		98.9	(25%-150%)
		13C-28-TrCB		67.3	(30%-135%)
		13C-111-PeCB		78.7	(30%-135%)
		13C-178-HpCB		81.7	(30%-135%)
9944010	B18-F-7	13C-1-MoCB		51.0	(15%-150%)
		13C-3-MoCB		52.8	(15%-150%)
		13C-4-DiCB		58.5	(25%-150%)
		13C-15-DiCB		80.0	(25%-150%)
		13C-19-TrCB		73.6	(25%-150%)
		13C-37-TrCB		73.2	(25%-150%)
		13C-54-TeCB		58.8	(25%-150%)
		13C-77-TeCB		88.2	(25%-150%)
		13C-81-TeCB		89.6	(25%-150%)
		13C-104-PeCB		64.4	(25%-150%)
		13C-105-PeCB		82.3	(25%-150%)
		13C-114-PeCB		80.3	(25%-150%)
		13C-118-PeCB		82.5	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9944010	B18-F-7	13C-123-PeCB		83.4	(25%-150%)
		13C-126-PeCB		84.4	(25%-150%)
		13C-155-HxCB		62.3	(25%-150%)
		13C-156-HxCB	C	72.8	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		76.5	(25%-150%)
		13C-169-HxCB		74.0	(25%-150%)
		13C-188-HpCB		76.8	(25%-150%)
		13C-189-HpCB		76.7	(25%-150%)
		13C-202-OcCB		82.7	(25%-150%)
		13C-205-OcCB		89.9	(25%-150%)
		13C-206-NoCB		84.9	(25%-150%)
		13C-208-NoCB		82.7	(25%-150%)
		13C-209-DeCB		89.8	(25%-150%)
		13C-28-TrCB		57.9	(30%-135%)
		13C-111-PeCB		70.1	(30%-135%)
		13C-178-HpCB		73.3	(30%-135%)
9944011	B18-F-R1	13C-1-MoCB		48.0	(15%-150%)
		13C-3-MoCB		51.0	(15%-150%)
		13C-4-DiCB		57.8	(25%-150%)
		13C-15-DiCB		77.8	(25%-150%)
		13C-19-TrCB		71.1	(25%-150%)
		13C-37-TrCB		71.4	(25%-150%)
		13C-54-TeCB		56.1	(25%-150%)
		13C-77-TeCB		83.8	(25%-150%)
		13C-81-TeCB		83.7	(25%-150%)
		13C-104-PeCB		62.8	(25%-150%)
		13C-105-PeCB		75.1	(25%-150%)
		13C-114-PeCB		73.7	(25%-150%)
		13C-118-PeCB		74.9	(25%-150%)
		13C-123-PeCB		75.6	(25%-150%)
		13C-126-PeCB		76.1	(25%-150%)
		13C-155-HxCB		63.2	(25%-150%)
		13C-156-HxCB	C	68.8	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		71.6	(25%-150%)
		13C-169-HxCB		69.2	(25%-150%)
		13C-188-HpCB		78.1	(25%-150%)
		13C-189-HpCB		73.4	(25%-150%)
		13C-202-OcCB		82.4	(25%-150%)
		13C-205-OcCB		87.0	(25%-150%)
		13C-206-NoCB		84.4	(25%-150%)
		13C-208-NoCB		79.6	(25%-150%)
		13C-209-DeCB		83.4	(25%-150%)
		13C-28-TrCB		58.9	(30%-135%)
		13C-111-PeCB		68.0	(30%-135%)
		13C-178-HpCB		71.5	(30%-135%)
9944012	B18-F-R2	13C-1-MoCB		50.4	(15%-150%)
		13C-3-MoCB		54.7	(15%-150%)
		13C-4-DiCB		61.6	(25%-150%)
		13C-15-DiCB		96.0	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9944012	B18-F-R2	13C-19-TrCB		80.3	(25%-150%)
		13C-37-TrCB		80.9	(25%-150%)
		13C-54-TeCB		56.6	(25%-150%)
		13C-77-TeCB		102	(25%-150%)
		13C-81-TeCB		102	(25%-150%)
		13C-104-PeCB		64.9	(25%-150%)
		13C-105-PeCB		87.3	(25%-150%)
		13C-114-PeCB		85.0	(25%-150%)
		13C-118-PeCB		87.0	(25%-150%)
		13C-123-PeCB		87.7	(25%-150%)
		13C-126-PeCB		93.0	(25%-150%)
		13C-155-HxCB		62.4	(25%-150%)
		13C-156-HxCB	C	76.9	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		79.8	(25%-150%)
		13C-169-HxCB		79.7	(25%-150%)
		13C-188-HpCB		75.7	(25%-150%)
		13C-189-HpCB		78.9	(25%-150%)
		13C-202-OcCB		86.9	(25%-150%)
		13C-205-OcCB		94.9	(25%-150%)
		13C-206-NoCB		93.5	(25%-150%)
		13C-208-NoCB		86.8	(25%-150%)
		13C-209-DeCB		93.0	(25%-150%)
		13C-28-TrCB		63.0	(30%-135%)
		13C-111-PeCB		77.7	(30%-135%)
		13C-178-HpCB		80.7	(30%-135%)
9944013	B18-F-R3	13C-1-MoCB		52.5	(15%-150%)
		13C-3-MoCB		56.2	(15%-150%)
		13C-4-DiCB		64.1	(25%-150%)
		13C-15-DiCB		86.9	(25%-150%)
		13C-19-TrCB		78.3	(25%-150%)
		13C-37-TrCB		78.5	(25%-150%)
		13C-54-TeCB		59.3	(25%-150%)
		13C-77-TeCB		92.3	(25%-150%)
		13C-81-TeCB		92.8	(25%-150%)
		13C-104-PeCB		66.5	(25%-150%)
		13C-105-PeCB		81.1	(25%-150%)
		13C-114-PeCB		78.9	(25%-150%)
		13C-118-PeCB		80.5	(25%-150%)
		13C-123-PeCB		81.2	(25%-150%)
		13C-126-PeCB		82.6	(25%-150%)
		13C-155-HxCB		67.4	(25%-150%)
		13C-156-HxCB	C	73.7	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		76.4	(25%-150%)
		13C-169-HxCB		75.9	(25%-150%)
		13C-188-HpCB		81.9	(25%-150%)
		13C-189-HpCB		78.0	(25%-150%)
		13C-202-OcCB		87.4	(25%-150%)
		13C-205-OcCB		92.4	(25%-150%)
		13C-206-NoCB		90.0	(25%-150%)
		13C-208-NoCB		86.0	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6J0588

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
9944013	B18-F-R3	13C-209-DeCB		87.3	(25%-150%)
		13C-28-TrCB		62.8	(30%-135%)
		13C-111-PeCB		73.7	(30%-135%)
		13C-178-HpCB		76.4	(30%-135%)
9944014	B18-OF	13C-1-MoCB		44.0	(15%-150%)
		13C-3-MoCB		49.4	(15%-150%)
		13C-4-DiCB		53.2	(25%-150%)
		13C-15-DiCB		88.0	(25%-150%)
		13C-19-TrCB		73.4	(25%-150%)
		13C-37-TrCB		80.0	(25%-150%)
		13C-54-TeCB		52.9	(25%-150%)
		13C-77-TeCB		99.2	(25%-150%)
		13C-81-TeCB		99.3	(25%-150%)
		13C-104-PeCB		62.2	(25%-150%)
		13C-105-PeCB		82.9	(25%-150%)
		13C-114-PeCB		81.0	(25%-150%)
		13C-118-PeCB		82.9	(25%-150%)
		13C-123-PeCB		83.0	(25%-150%)
		13C-126-PeCB		86.7	(25%-150%)
		13C-155-HxCB		63.5	(25%-150%)
		13C-156-HxCB	C	74.9	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		77.6	(25%-150%)
		13C-169-HxCB		78.0	(25%-150%)
		13C-188-HpCB		77.6	(25%-150%)
		13C-189-HpCB		78.1	(25%-150%)
		13C-202-OcCB		84.4	(25%-150%)
		13C-205-OcCB		92.5	(25%-150%)
		13C-206-NoCB		89.2	(25%-150%)
		13C-208-NoCB		84.1	(25%-150%)
		13C-209-DeCB		89.4	(25%-150%)
		13C-28-TrCB		63.1	(30%-135%)
		13C-111-PeCB		78.9	(30%-135%)
		13C-178-HpCB		80.7	(30%-135%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: A6J0588 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 33131 **Matrix:** WATER

Lab Sample ID: 12017182

Instrument: HRP875 **Analysis Date:** 10/28/2016 10:24 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 33131

Batch ID: 33134

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits
2051-60-7	LCS	1-MoCB	500		496	99.2	50-150
2051-62-9	LCS	3-MoCB	500		563	113	50-150
13029-08-8	LCS	4-DiCB	500		423	84.6	50-150
2050-68-2	LCS	15-DiCB	500		574	115	50-150
38444-73-4	LCS	19-TrCB	500		470	94.1	50-150
38444-90-5	LCS	37-TrCB	500		494	98.8	50-150
15968-05-5	LCS	54-TeCB	1000		903	90.3	50-150
32598-13-3	LCS	77-TeCB	1000		930	93	50-150
70362-50-4	LCS	81-TeCB	1000		1090	109	50-150
56558-16-8	LCS	104-PeCB	1000		947	94.7	50-150
32598-14-4	LCS	105-PeCB	1000		1200	120	50-150
74472-37-0	LCS	114-PeCB	1000		1050	105	50-150
31508-00-6	LCS	118-PeCB	1000		977	97.7	50-150
65510-44-3	LCS	123-PeCB	1000		926	92.6	50-150
57465-28-8	LCS	126-PeCB	1000		1150	115	50-150
33979-03-2	LCS	155-HxCB	1000		1010	101	50-150
38380-08-4	LCS	156-HxCB	2000	C	2220	111	50-150
69782-90-7	LCS	157-HxCB		C156			
52663-72-6	LCS	167-HxCB	1000		1160	116	50-150
32774-16-6	LCS	169-HxCB	1000		1030	103	50-150
74487-85-7	LCS	188-HpCB	1000		927	92.7	50-150
39635-31-9	LCS	189-HpCB	1000		978	97.8	50-150
2136-99-4	LCS	202-OcCB	1500		1330	88.8	50-150
74472-53-0	LCS	205-OcCB	1500		1380	91.9	50-150
40186-72-9	LCS	206-NoCB	1500		1360	90.6	50-150
52663-77-1	LCS	208-NoCB	1500		1450	96.4	50-150
2051-24-3	LCS	209-DeCB	1500		1280	85.6	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: A6J0588 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 33131 **Matrix:** WATER

Lab Sample ID: 12017183

Instrument: HRP875 **Analysis Date:** 10/28/2016 11:30 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 33131

Batch ID: 33134

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	1-MoCB	500		502	100	50-150	1.20	0-20
2051-62-9	LCSD	3-MoCB	500		563	113	50-150	0.0995	0-20
13029-08-8	LCSD	4-DiCB	500		423	84.6	50-150	0.0331	0-20
2050-68-2	LCSD	15-DiCB	500		552	110	50-150	3.93	0-20
38444-73-4	LCSD	19-TrCB	500		469	93.8	50-150	0.285	0-20
38444-90-5	LCSD	37-TrCB	500		497	99.3	50-150	0.537	0-20
15968-05-5	LCSD	54-TeCB	1000		906	90.6	50-150	0.285	0-20
32598-13-3	LCSD	77-TeCB	1000		923	92.3	50-150	0.699	0-20
70362-50-4	LCSD	81-TeCB	1000		1100	110	50-150	1.27	0-20
56558-16-8	LCSD	104-PeCB	1000		974	97.4	50-150	2.80	0-20
32598-14-4	LCSD	105-PeCB	1000		1210	121	50-150	1.14	0-20
74472-37-0	LCSD	114-PeCB	1000		1070	107	50-150	1.88	0-20
31508-00-6	LCSD	118-PeCB	1000		990	99	50-150	1.25	0-20
65510-44-3	LCSD	123-PeCB	1000		940	94	50-150	1.44	0-20
57465-28-8	LCSD	126-PeCB	1000		1150	115	50-150	0.162	0-20
33979-03-2	LCSD	155-HxCB	1000		1010	101	50-150	0.129	0-20
38380-08-4	LCSD	156-HxCB	2000	C	2260	113	50-150	1.80	0-20
69782-90-7	LCSD	157-HxCB		C156					
52663-72-6	LCSD	167-HxCB	1000		1190	119	50-150	2.54	0-20
32774-16-6	LCSD	169-HxCB	1000		1080	108	50-150	4.31	0-20
74487-85-7	LCSD	188-HpCB	1000		938	93.8	50-150	1.19	0-20
39635-31-9	LCSD	189-HpCB	1000		988	98.8	50-150	1.04	0-20
2136-99-4	LCSD	202-OcCB	1500		1360	91	50-150	2.39	0-20
74472-53-0	LCSD	205-OcCB	1500		1410	93.7	50-150	1.98	0-20
40186-72-9	LCSD	206-NoCB	1500		1370	91.4	50-150	0.957	0-20
52663-77-1	LCSD	208-NoCB	1500		1460	97.1	50-150	0.775	0-20
2051-24-3	LCSD	209-DeCB	1500		1290	86.2	50-150	0.658	0-20

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: A6J0588 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 33181 **Matrix:** WATER

Lab Sample ID: 12017235

Instrument: HRP791 **Analysis Date:** 11/04/2016 16:34 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 33181

Batch ID: 33183

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits
2051-60-7	LCS	1-MoCB	500		501	100	50-150
2051-62-9	LCS	3-MoCB	500		524	105	50-150
13029-08-8	LCS	4-DiCB	500		445	89.1	50-150
2050-68-2	LCS	15-DiCB	500		517	103	50-150
38444-73-4	LCS	19-TrCB	500		471	94.1	50-150
38444-90-5	LCS	37-TrCB	500		452	90.3	50-150
15968-05-5	LCS	54-TeCB	1000		923	92.3	50-150
32598-13-3	LCS	77-TeCB	1000		882	88.2	50-150
70362-50-4	LCS	81-TeCB	1000		1040	104	50-150
56558-16-8	LCS	104-PeCB	1000		1010	101	50-150
32598-14-4	LCS	105-PeCB	1000		1140	114	50-150
74472-37-0	LCS	114-PeCB	1000		991	99.1	50-150
31508-00-6	LCS	118-PeCB	1000		931	93.1	50-150
65510-44-3	LCS	123-PeCB	1000		888	88.8	50-150
57465-28-8	LCS	126-PeCB	1000		1010	101	50-150
33979-03-2	LCS	155-HxCB	1000		952	95.2	50-150
38380-08-4	LCS	156-HxCB	2000	C	2100	105	50-150
69782-90-7	LCS	157-HxCB		C156			
52663-72-6	LCS	167-HxCB	1000		1090	109	50-150
32774-16-6	LCS	169-HxCB	1000		938	93.8	50-150
74487-85-7	LCS	188-HpCB	1000		925	92.5	50-150
39635-31-9	LCS	189-HpCB	1000		928	92.8	50-150
2136-99-4	LCS	202-OcCB	1500		1360	90.8	50-150
74472-53-0	LCS	205-OcCB	1500		1240	82.7	50-150
40186-72-9	LCS	206-NoCB	1500		1330	88.7	50-150
52663-77-1	LCS	208-NoCB	1500		1430	95.1	50-150
2051-24-3	LCS	209-DeCB	1500		1330	88.6	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: A6J0588 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 33181 **Matrix:** WATER

Lab Sample ID: 12017236

Instrument: HRP791 **Analysis Date:** 11/04/2016 17:40 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 33181

Batch ID: 33183

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	1-MoCB	500		468	93.6	50-150	6.91	0-20
2051-62-9	LCSD	3-MoCB	500		514	103	50-150	1.97	0-20
13029-08-8	LCSD	4-DiCB	500		447	89.3	50-150	0.309	0-20
2050-68-2	LCSD	15-DiCB	500		509	102	50-150	1.57	0-20
38444-73-4	LCSD	19-TrCB	500		462	92.4	50-150	1.86	0-20
38444-90-5	LCSD	37-TrCB	500		446	89.2	50-150	1.27	0-20
15968-05-5	LCSD	54-TeCB	1000		944	94.4	50-150	2.30	0-20
32598-13-3	LCSD	77-TeCB	1000		874	87.4	50-150	0.893	0-20
70362-50-4	LCSD	81-TeCB	1000		1020	102	50-150	1.68	0-20
56558-16-8	LCSD	104-PeCB	1000		973	97.3	50-150	3.25	0-20
32598-14-4	LCSD	105-PeCB	1000		1120	112	50-150	1.82	0-20
74472-37-0	LCSD	114-PeCB	1000		982	98.2	50-150	0.858	0-20
31508-00-6	LCSD	118-PeCB	1000		914	91.4	50-150	1.79	0-20
65510-44-3	LCSD	123-PeCB	1000		875	87.5	50-150	1.54	0-20
57465-28-8	LCSD	126-PeCB	1000		1010	101	50-150	0.600	0-20
33979-03-2	LCSD	155-HxCB	1000		938	93.8	50-150	1.50	0-20
38380-08-4	LCSD	156-HxCB	2000	C	2060	103	50-150	1.81	0-20
69782-90-7	LCSD	157-HxCB		C156					
52663-72-6	LCSD	167-HxCB	1000		1090	109	50-150	0.575	0-20
32774-16-6	LCSD	169-HxCB	1000		933	93.3	50-150	0.539	0-20
74487-85-7	LCSD	188-HpCB	1000		935	93.5	50-150	1.15	0-20
39635-31-9	LCSD	189-HpCB	1000		913	91.3	50-150	1.65	0-20
2136-99-4	LCSD	202-OcCB	1500		1360	90.4	50-150	0.421	0-20
74472-53-0	LCSD	205-OcCB	1500		1250	83.3	50-150	0.798	0-20
40186-72-9	LCSD	206-NoCB	1500		1350	89.9	50-150	1.36	0-20
52663-77-1	LCSD	208-NoCB	1500		1430	95.1	50-150	0.0042	0-20
2051-24-3	LCSD	209-DeCB	1500		1320	88	50-150	0.640	0-20

Method Blank Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 33131**	**Instrument ID:**	**HRP875**	**Data File:**	**d28oct16a-4**
Lab Sample ID:	**12017181**	**Prep Date:**	**26-OCT-16**	**Analyzed:**	**10/28/16 12:37**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 33131	12017182	d28oct16a-2	10/28/16	1024
02	LCSD for batch 33131	12017183	d28oct16a-3	10/28/16	1130
03	B18-D-CB1	9944001	d28oct16a_2-8	10/29/16	0527
04	B18-D-CB2	9944002	d28oct16a_2-9	10/29/16	0634
05	B18-F-1	9944004	d28oct16a_2-11	10/29/16	0847
06	B18-F-2	9944005	d28oct16a_3-3	10/29/16	1219
07	B18-F-3	9944006	d28oct16a_3-4	10/29/16	1326
08	B18-F-4	9944007	d28oct16a_3-5	10/29/16	1432
09	B18-F-5	9944008	d28oct16a_3-6	10/29/16	1539
10	B18-D-CB3	9944003	d03nov16a-3	11/03/16	1643

Method Blank Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 33181**	**Instrument ID:**	**HRP791**	**Data File:**	**c04nov16a-4**
Lab Sample ID:	**12017234**	**Prep Date:**	**03-NOV-16**	**Analyzed:**	**11/04/16 18:46**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 33181	12017235	c04nov16a-2	11/04/16	1634
02	LCSD for batch 33181	12017236	c04nov16a-3	11/04/16	1740
03	B18-F-6	9944009	c04nov16a_2-9	11/05/16	1237
04	B18-F-7	9944010	c04nov16a_2-10	11/05/16	1343
05	B18-F-R1	9944011	c04nov16a_2-11	11/05/16	1449
06	B18-F-R2	9944012	c04nov16a_3-3	11/05/16	1820
07	B18-F-R3	9944013	c04nov16a_3-4	11/05/16	1926
08	B18-OF	9944014	c04nov16a_3-5	11/05/16	2032

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017181**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33131**				
Client ID:	**MB for batch 33131**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/28/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	1.2	pg/L	1.20	20.0
2051-61-8	2-MoCB	U	1	pg/L	1.00	20.0
2051-62-9	3-MoCB	U	1.28	pg/L	1.28	20.0
13029-08-8	4-DiCB	U	4.04	pg/L	4.04	20.0
16605-91-7	5-DiCB	U	2.76	pg/L	2.76	20.0
25569-80-6	6-DiCB	U	2.22	pg/L	2.22	20.0
33284-50-3	7-DiCB	U	2.5	pg/L	2.50	20.0
34883-43-7	8-DiCB	U	2.06	pg/L	2.06	20.0
34883-39-1	9-DiCB	U	2.46	pg/L	2.46	20.0
33146-45-1	10-DiCB	U	2.48	pg/L	2.48	20.0
2050-67-1	11-DiCB	J	29.5	pg/L	2.54	100
2974-92-7	12-DiCB	CU	2.54	pg/L	2.54	40.0
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	2.4	pg/L	2.40	20.0
2050-68-2	15-DiCB	U	3.22	pg/L	3.22	20.0
38444-78-9	16-TrCB	U	2.28	pg/L	2.28	20.0
37680-66-3	17-TrCB	U	1.78	pg/L	1.78	20.0
37680-65-2	18-TrCB	CU	2.16	pg/L	2.16	40.0
38444-73-4	19-TrCB	U	2.04	pg/L	2.04	20.0
38444-84-7	20-TrCB	CJ	4.22	pg/L	1.32	40.0
55702-46-0	21-TrCB	CJ	2.32	pg/L	1.34	40.0
38444-85-8	22-TrCB	J	1.80	pg/L	1.46	20.0
55720-44-0	23-TrCB	U	1.4	pg/L	1.40	20.0
55702-45-9	24-TrCB	U	1.38	pg/L	1.38	20.0
55712-37-3	25-TrCB	U	1.36	pg/L	1.36	20.0
38444-81-4	26-TrCB	CU	1.26	pg/L	1.26	40.0
38444-76-7	27-TrCB	U	1.24	pg/L	1.24	20.0
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	3.46	pg/L	3.46	20.0
38444-77-8	32-TrCB	U	1.16	pg/L	1.16	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017181**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33131**				
Client ID:	**MB for batch 33131**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/28/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.3	pg/L	1.30	20.0
37680-69-6	35-TrCB	U	1.94	pg/L	1.94	20.0
38444-87-0	36-TrCB	U	1.68	pg/L	1.68	20.0
38444-90-5	37-TrCB	U	2.38	pg/L	2.38	20.0
53555-66-1	38-TrCB	U	1.76	pg/L	1.76	20.0
38444-88-1	39-TrCB	U	1.86	pg/L	1.86	20.0
38444-93-8	40-TeCB	CU	2.3	pg/L	2.30	40.0
52663-59-9	41-TeCB	U	2.58	pg/L	2.58	20.0
36559-22-5	42-TeCB	U	2.82	pg/L	2.82	20.0
70362-46-8	43-TeCB	U	3.3	pg/L	3.30	20.0
41464-39-5	44-TeCB	CU	3.64	pg/L	3.64	60.0
70362-45-7	45-TeCB	CU	1.34	pg/L	1.34	40.0
41464-47-5	46-TeCB	U	1.42	pg/L	1.42	20.0
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	2.48	pg/L	2.48	20.0
41464-40-8	49-TeCB	CU	2.14	pg/L	2.14	40.0
62796-65-0	50-TeCB	CU	1.26	pg/L	1.26	40.0
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	3.28	pg/L	2.04	20.0
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	.98	pg/L	0.980	20.0
74338-24-2	55-TeCB	U	1.88	pg/L	1.88	20.0
41464-43-1	56-TeCB	U	1.86	pg/L	1.86	20.0
70424-67-8	57-TeCB	U	1.58	pg/L	1.58	20.0
41464-49-7	58-TeCB	U	1.64	pg/L	1.64	20.0
74472-33-6	59-TeCB	CU	1.78	pg/L	1.78	60.0
33025-41-1	60-TeCB	U	1.74	pg/L	1.74	20.0
33284-53-6	61-TeCB	CJ	6.74	pg/L	1.66	80.0
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	1.46	pg/L	1.46	20.0
52663-58-8	64-TeCB	U	1.98	pg/L	1.98	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017181**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33131**				
Client ID:	**MB for batch 33131**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/28/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	2.38	pg/L	1.42	20.0
73575-53-8	67-TeCB	U	1.46	pg/L	1.46	20.0
73575-52-7	68-TeCB	U	1.56	pg/L	1.56	20.0
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.46	pg/L	1.46	20.0
74338-23-1	73-TeCB	U	1.94	pg/L	1.94	20.0
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	1.94	pg/L	1.94	20.0
70362-49-1	78-TeCB	U	1.64	pg/L	1.64	20.0
41464-48-6	79-TeCB	U	1.4	pg/L	1.40	20.0
33284-52-5	80-TeCB	U	1.38	pg/L	1.38	20.0
70362-50-4	81-TeCB	U	1.88	pg/L	1.88	20.0
52663-62-4	82-PeCB	U	2.04	pg/L	2.04	20.0
60145-20-2	83-PeCB	U	1.92	pg/L	1.92	20.0
52663-60-2	84-PeCB	U	1.98	pg/L	1.98	20.0
65510-45-4	85-PeCB	CU	1.48	pg/L	1.48	60.0
55312-69-1	86-PeCB	CJ	2.44	pg/L	1.62	120
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	1.86	pg/L	1.86	40.0
73575-57-2	89-PeCB	U	1.88	pg/L	1.88	20.0
68194-07-0	90-PeCB	CU	2.26	pg/L	2.26	60.0
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	1.78	pg/L	1.78	20.0
73575-56-1	93-PeCB	CU	1.74	pg/L	1.74	40.0
73575-55-0	94-PeCB	U	2.08	pg/L	2.08	20.0
38379-99-6	95-PeCB	U	1.74	pg/L	1.74	20.0
73575-54-9	96-PeCB	U	.88	pg/L	0.880	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017181**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33131**				
Client ID:	**MB for batch 33131**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/28/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	2.14	pg/L	2.14	40.0
38380-01-7	99-PeCB	U	1.64	pg/L	1.64	20.0
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	1.64	pg/L	1.64	20.0
56558-16-8	104-PeCB	U	.94	pg/L	0.940	20.0
32598-14-4	105-PeCB	J	1.58	pg/L	1.54	20.0
70424-69-0	106-PeCB	U	1.3	pg/L	1.30	20.0
70424-68-9	107-PeCB	U	1.02	pg/L	1.02	20.0
70362-41-3	108-PeCB	CU	1.26	pg/L	1.26	40.0
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	2.58	pg/L	1.62	40.0
39635-32-0	111-PeCB	U	1.44	pg/L	1.44	20.0
74472-36-9	112-PeCB	U	1.46	pg/L	1.46	20.0
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	1.6	pg/L	1.60	20.0
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	J	2.44	pg/L	1.40	20.0
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	1.3	pg/L	1.30	20.0
56558-18-0	121-PeCB	U	1.46	pg/L	1.46	20.0
76842-07-4	122-PeCB	U	1.26	pg/L	1.26	20.0
65510-44-3	123-PeCB	U	1.44	pg/L	1.44	20.0
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	1.9	pg/L	1.90	20.0
39635-33-1	127-PeCB	U	1.16	pg/L	1.16	20.0
38380-07-3	128-HxCB	CU	1.7	pg/L	1.70	40.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017181**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33131**				
Client ID:	**MB for batch 33131**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/28/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CU	2.36	pg/L	2.36	60.0
52663-66-8	130-HxCB	U	2.1	pg/L	2.10	20.0
61798-70-7	131-HxCB	U	2.42	pg/L	2.42	20.0
38380-05-1	132-HxCB	U	2.24	pg/L	2.24	20.0
35694-04-3	133-HxCB	U	1.94	pg/L	1.94	20.0
52704-70-8	134-HxCB	U	2.76	pg/L	2.76	20.0
52744-13-5	135-HxCB	CU	1.08	pg/L	1.08	40.0
38411-22-2	136-HxCB	U	.78	pg/L	0.780	20.0
35694-06-5	137-HxCB	U	1.86	pg/L	1.86	20.0
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	1.86	pg/L	1.86	40.0
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	2	pg/L	2.00	20.0
41411-61-4	142-HxCB	U	2.26	pg/L	2.26	20.0
68194-15-0	143-HxCB	U	2.16	pg/L	2.16	20.0
68194-14-9	144-HxCB	U	1	pg/L	1.00	20.0
74472-40-5	145-HxCB	U	.86	pg/L	0.860	20.0
51908-16-8	146-HxCB	U	1.42	pg/L	1.42	20.0
68194-13-8	147-HxCB	CU	2.12	pg/L	2.12	40.0
74472-41-6	148-HxCB	U	.98	pg/L	0.980	20.0
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.88	pg/L	0.880	20.0
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.76	pg/L	0.760	20.0
35065-27-1	153-HxCB	CU	1.88	pg/L	1.88	40.0
60145-22-4	154-HxCB	U	.9	pg/L	0.900	20.0
33979-03-2	155-HxCB	U	.74	pg/L	0.740	20.0
38380-08-4	156-HxCB	CU	1.62	pg/L	1.62	40.0
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	1.34	pg/L	1.34	20.0
39635-35-3	159-HxCB	U	.98	pg/L	0.980	20.0
41411-62-5	160-HxCB	U	1.84	pg/L	1.84	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017181**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33131**				
Client ID:	**MB for batch 33131**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/28/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.52	pg/L	1.52	20.0
39635-34-2	162-HxCB	U	1.06	pg/L	1.06	20.0
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	1.58	pg/L	1.58	20.0
74472-46-1	165-HxCB	U	1.72	pg/L	1.72	20.0
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	1.06	pg/L	1.06	20.0
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.4	pg/L	1.40	20.0
35065-30-6	170-HpCB	U	1.3	pg/L	1.30	20.0
52663-71-5	171-HpCB	CU	1.26	pg/L	1.26	40.0
52663-74-8	172-HpCB	U	1.24	pg/L	1.24	20.0
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	1.24	pg/L	1.24	20.0
40186-70-7	175-HpCB	U	.98	pg/L	0.980	20.0
52663-65-7	176-HpCB	U	.76	pg/L	0.760	20.0
52663-70-4	177-HpCB	U	1.26	pg/L	1.26	20.0
52663-67-9	178-HpCB	U	1.04	pg/L	1.04	20.0
52663-64-6	179-HpCB	U	.76	pg/L	0.760	20.0
35065-29-3	180-HpCB	CJ	1.60	pg/L	1.08	40.0
74472-47-2	181-HpCB	U	1.26	pg/L	1.26	20.0
60145-23-5	182-HpCB	U	.98	pg/L	0.980	20.0
52663-69-1	183-HpCB	CU	1.18	pg/L	1.18	40.0
74472-48-3	184-HpCB	U	.76	pg/L	0.760	20.0
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.84	pg/L	0.840	20.0
52663-68-0	187-HpCB	U	1	pg/L	1.00	20.0
74487-85-7	188-HpCB	U	.84	pg/L	0.840	20.0
39635-31-9	189-HpCB	U	1.3	pg/L	1.30	20.0
41411-64-7	190-HpCB	U	1	pg/L	1.00	20.0
74472-50-7	191-HpCB	U	.96	pg/L	0.960	20.0
74472-51-8	192-HpCB	U	1.12	pg/L	1.12	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017181**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33131**				
Client ID:	**MB for batch 33131**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/28/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	1.12	pg/L	1.06	20.0
52663-78-2	195-OcCB	U	1.14	pg/L	1.14	20.0
42740-50-1	196-OcCB	U	.96	pg/L	0.960	20.0
33091-17-7	197-OcCB	CU	.74	pg/L	0.740	40.0
68194-17-2	198-OcCB	CU	1.04	pg/L	1.04	40.0
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	.72	pg/L	0.720	20.0
2136-99-4	202-OcCB	U	.84	pg/L	0.840	20.0
52663-76-0	203-OcCB	U	1.04	pg/L	1.04	20.0
74472-52-9	204-OcCB	U	.72	pg/L	0.720	20.0
74472-53-0	205-OcCB	U	1.06	pg/L	1.06	20.0
40186-72-9	206-NoCB	U	1.56	pg/L	1.56	20.0
52663-79-3	207-NoCB	U	1.06	pg/L	1.06	20.0
52663-77-1	208-NoCB	U	1.22	pg/L	1.22	20.0
2051-24-3	209-DeCB	U	1.38	pg/L	1.38	20.0
27323-18-8	Total Mono PCBs	U	0	pg/L	6.66	20.0
25512-42-9	Total Di PCBs		29.5	pg/L	6.66	20.0
25323-68-6	Total Tri PCBs	J	8.34	pg/L	6.66	20.0
26914-33-0	Total Tetra PCBs	J	12.4	pg/L	6.66	20.0
25429-29-2	Total Penta PCBs	J	9.04	pg/L	6.66	20.0
26601-64-9	Total Hexa PCBs	U	0	pg/L	6.66	20.0
28655-71-2	Total Hepta PCBs	J	1.60	pg/L	6.66	20.0
55722-26-4	Total Octa PCBs	J	1.12	pg/L	6.66	20.0
53742-07-7	Total Nona PCBs	U	0	pg/L	6.66	20.0
2051-24-3	Total Deca PCB	U	0	pg/L	6.66	20.0
1336-36-3	Total PCB Congeners		62.0	pg/L	6.66	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1030	2000	pg/L	51.5	(15%-150%)
13C-3-MoCB		1120	2000	pg/L	55.9	(15%-150%)
13C-4-DiCB		1080	2000	pg/L	53.9	(25%-150%)
13C-15-DiCB		2110	2000	pg/L	105	(25%-150%)
13C-19-TrCB		1490	2000	pg/L	74.4	(25%-150%)
13C-37-TrCB		2010	2000	pg/L	101	(25%-150%)
13C-54-TeCB		1470	2000	pg/L	73.7	(25%-150%)
13C-77-TeCB		2330	2000	pg/L	116	(25%-150%)
13C-81-TeCB		2340	2000	pg/L	117	(25%-150%)
13C-104-PeCB		1630	2000	pg/L	81.6	(25%-150%)
13C-105-PeCB		2060	2000	pg/L	103	(25%-150%)
13C-114-PeCB		2040	2000	pg/L	102	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017181**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33131**				
Client ID:	**MB for batch 33131**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/28/2016 12:37**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a-4**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		2030	2000	pg/L	101	(25%-150%)
13C-123-PeCB		2160	2000	pg/L	108	(25%-150%)
13C-126-PeCB		1990	2000	pg/L	99.3	(25%-150%)
13C-155-HxCB		1740	2000	pg/L	86.8	(25%-150%)
13C-156-HxCB	C	4050	4000	pg/L	101	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		2080	2000	pg/L	104	(25%-150%)
13C-169-HxCB		1950	2000	pg/L	97.5	(25%-150%)
13C-188-HpCB		1600	2000	pg/L	80.0	(25%-150%)
13C-189-HpCB		1860	2000	pg/L	92.8	(25%-150%)
13C-202-OcCB		1760	2000	pg/L	87.8	(25%-150%)
13C-205-OcCB		2100	2000	pg/L	105	(25%-150%)
13C-206-NoCB		1940	2000	pg/L	96.9	(25%-150%)
13C-208-NoCB		1760	2000	pg/L	88.1	(25%-150%)
13C-209-DeCB		2340	2000	pg/L	117	(25%-150%)
13C-28-TrCB		1380	2000	pg/L	69.1	(30%-135%)
13C-111-PeCB		1750	2000	pg/L	87.3	(30%-135%)
13C-178-HpCB		1770	2000	pg/L	88.5	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017182**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33131**				
Client ID:	**LCS for batch 33131**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/28/2016 10:24**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a-2**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		496	pg/L	2.76	20.0
2051-62-9	3-MoCB		563	pg/L	3.00	20.0
13029-08-8	4-DiCB		423	pg/L	5.62	20.0
2050-68-2	15-DiCB		574	pg/L	5.70	20.0
38444-73-4	19-TrCB		470	pg/L	2.52	20.0
38444-90-5	37-TrCB		494	pg/L	2.94	20.0
15968-05-5	54-TeCB		903	pg/L	1.32	20.0
32598-13-3	77-TeCB		930	pg/L	7.26	20.0
70362-50-4	81-TeCB		1090	pg/L	6.52	20.0
56558-16-8	104-PeCB		947	pg/L	0.920	20.0
32598-14-4	105-PeCB		1200	pg/L	9.56	20.0
74472-37-0	114-PeCB		1050	pg/L	9.32	20.0
31508-00-6	118-PeCB		977	pg/L	8.62	20.0
65510-44-3	123-PeCB		926	pg/L	8.58	20.0
57465-28-8	126-PeCB		1150	pg/L	12.3	20.0
33979-03-2	155-HxCB		1010	pg/L	0.780	20.0
38380-08-4	156-HxCB	C	2220	pg/L	8.78	40.0
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1160	pg/L	6.20	20.0
32774-16-6	169-HxCB		1030	pg/L	8.06	20.0
74487-85-7	188-HpCB		927	pg/L	1.06	20.0
39635-31-9	189-HpCB		978	pg/L	2.58	20.0
2136-99-4	202-OcCB		1330	pg/L	1.42	20.0
74472-53-0	205-OcCB		1380	pg/L	3.12	20.0
40186-72-9	206-NoCB		1360	pg/L	2.48	20.0
52663-77-1	208-NoCB		1450	pg/L	1.88	20.0
2051-24-3	209-DeCB		1280	pg/L	0.920	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		864	2000	pg/L	43.2	(15%-140%)
13C-3-MoCB		983	2000	pg/L	49.1	(15%-140%)
13C-4-DiCB		998	2000	pg/L	49.9	(30%-140%)
13C-15-DiCB		1750	2000	pg/L	87.7	(30%-140%)
13C-19-TrCB		1370	2000	pg/L	68.3	(30%-140%)
13C-37-TrCB		1900	2000	pg/L	95.2	(30%-140%)
13C-54-TeCB		1450	2000	pg/L	72.6	(30%-140%)
13C-77-TeCB		2160	2000	pg/L	108	(30%-140%)
13C-81-TeCB		2250	2000	pg/L	113	(30%-140%)
13C-104-PeCB		1530	2000	pg/L	76.7	(30%-140%)
13C-105-PeCB		1930	2000	pg/L	96.7	(30%-140%)
13C-114-PeCB		1950	2000	pg/L	97.4	(30%-140%)
13C-118-PeCB		1900	2000	pg/L	95.2	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017182**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33131**				
Client ID:	**LCS for batch 33131**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/28/2016 10:24**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a-2**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		2070	2000	pg/L	103	(30%-140%)
13C-126-PeCB		1800	2000	pg/L	90.2	(30%-140%)
13C-155-HxCB		1730	2000	pg/L	86.4	(30%-140%)
13C-156-HxCB	C	3870	4000	pg/L	96.7	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		2010	2000	pg/L	100	(30%-140%)
13C-169-HxCB		1860	2000	pg/L	92.8	(30%-140%)
13C-188-HpCB		1620	2000	pg/L	80.8	(30%-140%)
13C-189-HpCB		1790	2000	pg/L	89.6	(30%-140%)
13C-202-OcCB		1740	2000	pg/L	87.2	(30%-140%)
13C-205-OcCB		2070	2000	pg/L	103	(30%-140%)
13C-206-NoCB		1870	2000	pg/L	93.5	(30%-140%)
13C-208-NoCB		1780	2000	pg/L	89.2	(30%-140%)
13C-209-DeCB		2310	2000	pg/L	115	(30%-140%)
13C-28-TrCB		1090	2000	pg/L	54.3	(40%-125%)
13C-111-PeCB		1340	2000	pg/L	66.9	(40%-125%)
13C-178-HpCB		1430	2000	pg/L	71.3	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017183**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33131**				
Client ID:	**LCSD for batch 33131**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/28/2016 11:30**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a-3**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		502	pg/L	1.78	20.0
2051-62-9	3-MoCB		563	pg/L	1.88	20.0
13029-08-8	4-DiCB		423	pg/L	3.72	20.0
2050-68-2	15-DiCB		552	pg/L	4.22	20.0
38444-73-4	19-TrCB		469	pg/L	2.78	20.0
38444-90-5	37-TrCB		497	pg/L	2.24	20.0
15968-05-5	54-TeCB		906	pg/L	1.26	20.0
32598-13-3	77-TeCB		923	pg/L	9.28	20.0
70362-50-4	81-TeCB		1100	pg/L	8.66	20.0
56558-16-8	104-PeCB		974	pg/L	1.36	20.0
32598-14-4	105-PeCB		1210	pg/L	6.16	20.0
74472-37-0	114-PeCB		1070	pg/L	6.14	20.0
31508-00-6	118-PeCB		990	pg/L	5.58	20.0
65510-44-3	123-PeCB		940	pg/L	5.74	20.0
57465-28-8	126-PeCB		1150	pg/L	7.72	20.0
33979-03-2	155-HxCB		1010	pg/L	0.720	20.0
38380-08-4	156-HxCB	C	2260	pg/L	9.28	40.0
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1190	pg/L	6.46	20.0
32774-16-6	169-HxCB		1080	pg/L	8.34	20.0
74487-85-7	188-HpCB		938	pg/L	1.20	20.0
39635-31-9	189-HpCB		988	pg/L	2.82	20.0
2136-99-4	202-OcCB		1360	pg/L	1.38	20.0
74472-53-0	205-OcCB		1410	pg/L	3.18	20.0
40186-72-9	206-NoCB		1370	pg/L	2.20	20.0
52663-77-1	208-NoCB		1460	pg/L	1.66	20.0
2051-24-3	209-DeCB		1290	pg/L	0.820	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		960	2000	pg/L	48.0	(15%-140%)
13C-3-MoCB		1060	2000	pg/L	52.8	(15%-140%)
13C-4-DiCB		1080	2000	pg/L	53.9	(30%-140%)
13C-15-DiCB		1830	2000	pg/L	91.3	(30%-140%)
13C-19-TrCB		1360	2000	pg/L	68.1	(30%-140%)
13C-37-TrCB		1760	2000	pg/L	88.0	(30%-140%)
13C-54-TeCB		1360	2000	pg/L	67.9	(30%-140%)
13C-77-TeCB		2000	2000	pg/L	99.9	(30%-140%)
13C-81-TeCB		2070	2000	pg/L	104	(30%-140%)
13C-104-PeCB		1420	2000	pg/L	71.2	(30%-140%)
13C-105-PeCB		1740	2000	pg/L	87.0	(30%-140%)
13C-114-PeCB		1730	2000	pg/L	86.5	(30%-140%)
13C-118-PeCB		1730	2000	pg/L	86.5	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017183**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33131**				
Client ID:	**LCSD for batch 33131**			**Prep Basis:**	**As Received**
Batch ID:	**33134**	**Method:**	**EPA Method 1668A**		
Run Date:	**10/28/2016 11:30**	**Analyst:**	**MJC**	**Instrument:**	**HRP875**
Data File:	**d28oct16a-3**			**Dilution:**	**1**
Prep Batch:	**33131**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**26-OCT-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		1850	2000	pg/L	92.5	(30%-140%)
13C-126-PeCB		1640	2000	pg/L	82.1	(30%-140%)
13C-155-HxCB		1570	2000	pg/L	78.7	(30%-140%)
13C-156-HxCB	C	3380	4000	pg/L	84.4	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		1770	2000	pg/L	88.5	(30%-140%)
13C-169-HxCB		1640	2000	pg/L	81.9	(30%-140%)
13C-188-HpCB		1410	2000	pg/L	70.3	(30%-140%)
13C-189-HpCB		1560	2000	pg/L	78.2	(30%-140%)
13C-202-OcCB		1520	2000	pg/L	76.1	(30%-140%)
13C-205-OcCB		1810	2000	pg/L	90.3	(30%-140%)
13C-206-NoCB		1650	2000	pg/L	82.5	(30%-140%)
13C-208-NoCB		1560	2000	pg/L	78.0	(30%-140%)
13C-209-DeCB		2010	2000	pg/L	100	(30%-140%)
13C-28-TrCB		1310	2000	pg/L	65.7	(40%-125%)
13C-111-PeCB		1580	2000	pg/L	79.1	(40%-125%)
13C-178-HpCB		1630	2000	pg/L	81.6	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017234**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33181**				
Client ID:	**MB for batch 33181**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/04/2016 18:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	1.28	pg/L	1.28	20.0
2051-61-8	2-MoCB	U	1.24	pg/L	1.24	20.0
2051-62-9	3-MoCB	U	1.42	pg/L	1.42	20.0
13029-08-8	4-DiCB	U	5.96	pg/L	5.96	20.0
16605-91-7	5-DiCB	U	6.2	pg/L	6.20	20.0
25569-80-6	6-DiCB	U	4.68	pg/L	4.68	20.0
33284-50-3	7-DiCB	U	5.3	pg/L	5.30	20.0
34883-43-7	8-DiCB	U	4.3	pg/L	4.30	20.0
34883-39-1	9-DiCB	U	5.14	pg/L	5.14	20.0
33146-45-1	10-DiCB	U	3.6	pg/L	3.60	20.0
2050-67-1	11-DiCB	J	81.2	pg/L	5.42	100
2974-92-7	12-DiCB	CU	5.68	pg/L	5.68	40.0
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	5.14	pg/L	5.14	20.0
2050-68-2	15-DiCB	U	6.44	pg/L	6.44	20.0
38444-78-9	16-TrCB	U	3.14	pg/L	3.14	20.0
37680-66-3	17-TrCB	U	2.52	pg/L	2.52	20.0
37680-65-2	18-TrCB	CJ	4.58	pg/L	2.12	40.0
38444-73-4	19-TrCB	U	2.9	pg/L	2.90	20.0
38444-84-7	20-TrCB	CJ	8.24	pg/L	1.90	40.0
55702-46-0	21-TrCB	CJ	4.78	pg/L	1.88	40.0
38444-85-8	22-TrCB	J	2.84	pg/L	2.10	20.0
55720-44-0	23-TrCB	U	1.96	pg/L	1.96	20.0
55702-45-9	24-TrCB	U	1.98	pg/L	1.98	20.0
55712-37-3	25-TrCB	U	1.88	pg/L	1.88	20.0
38444-81-4	26-TrCB	CU	1.8	pg/L	1.80	40.0
38444-76-7	27-TrCB	U	1.82	pg/L	1.82	20.0
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	U	5.62	pg/L	5.62	20.0
38444-77-8	32-TrCB	U	1.7	pg/L	1.70	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017234**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33181**				
Client ID:	**MB for batch 33181**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/04/2016 18:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.86	pg/L	1.86	20.0
37680-69-6	35-TrCB	U	2.3	pg/L	2.30	20.0
38444-87-0	36-TrCB	U	2.08	pg/L	2.08	20.0
38444-90-5	37-TrCB	U	2.62	pg/L	2.62	20.0
53555-66-1	38-TrCB	U	2.2	pg/L	2.20	20.0
38444-88-1	39-TrCB	U	2.22	pg/L	2.22	20.0
38444-93-8	40-TeCB	CU	2.36	pg/L	2.36	40.0
52663-59-9	41-TeCB	U	2.7	pg/L	2.70	20.0
36559-22-5	42-TeCB	U	2.78	pg/L	2.78	20.0
70362-46-8	43-TeCB	U	3.14	pg/L	3.14	20.0
41464-39-5	44-TeCB	CJ	6.30	pg/L	2.38	60.0
70362-45-7	45-TeCB	CU	1.62	pg/L	1.62	40.0
41464-47-5	46-TeCB	U	1.66	pg/L	1.66	20.0
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	2.64	pg/L	2.64	20.0
41464-40-8	49-TeCB	CU	2.22	pg/L	2.22	40.0
62796-65-0	50-TeCB	CU	1.56	pg/L	1.56	40.0
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	U	6.6	pg/L	6.60	20.0
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	1.2	pg/L	1.20	20.0
74338-24-2	55-TeCB	U	1.7	pg/L	1.70	20.0
41464-43-1	56-TeCB	U	1.78	pg/L	1.78	20.0
70424-67-8	57-TeCB	U	1.54	pg/L	1.54	20.0
41464-49-7	58-TeCB	U	1.66	pg/L	1.66	20.0
74472-33-6	59-TeCB	CU	1.86	pg/L	1.86	60.0
33025-41-1	60-TeCB	U	1.7	pg/L	1.70	20.0
33284-53-6	61-TeCB	CJ	7.00	pg/L	1.62	80.0
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	1.46	pg/L	1.46	20.0
52663-58-8	64-TeCB	U	2.02	pg/L	2.02	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017234**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33181**				
Client ID:	**MB for batch 33181**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/04/2016 18:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	U	2.68	pg/L	2.68	20.0
73575-53-8	67-TeCB	U	1.38	pg/L	1.38	20.0
73575-52-7	68-TeCB	U	1.52	pg/L	1.52	20.0
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.46	pg/L	1.46	20.0
74338-23-1	73-TeCB	U	1.98	pg/L	1.98	20.0
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	1.86	pg/L	1.86	20.0
70362-49-1	78-TeCB	U	1.6	pg/L	1.60	20.0
41464-48-6	79-TeCB	U	1.4	pg/L	1.40	20.0
33284-52-5	80-TeCB	U	1.36	pg/L	1.36	20.0
70362-50-4	81-TeCB	U	1.8	pg/L	1.80	20.0
52663-62-4	82-PeCB	U	2.58	pg/L	2.58	20.0
60145-20-2	83-PeCB	U	2.72	pg/L	2.72	20.0
52663-60-2	84-PeCB	U	2.56	pg/L	2.56	20.0
65510-45-4	85-PeCB	CU	1.98	pg/L	1.98	60.0
55312-69-1	86-PeCB	CU	2.14	pg/L	2.14	120
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	2.44	pg/L	2.44	40.0
73575-57-2	89-PeCB	U	2.44	pg/L	2.44	20.0
68194-07-0	90-PeCB	CU	2.1	pg/L	2.10	60.0
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	2.36	pg/L	2.36	20.0
73575-56-1	93-PeCB	CU	2.5	pg/L	2.50	40.0
73575-55-0	94-PeCB	U	2.72	pg/L	2.72	20.0
38379-99-6	95-PeCB	U	2.26	pg/L	2.26	20.0
73575-54-9	96-PeCB	U	1.5	pg/L	1.50	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017234**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33181**				
Client ID:	**MB for batch 33181**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/04/2016 18:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	2.58	pg/L	2.58	40.0
38380-01-7	99-PeCB	U	2.24	pg/L	2.24	20.0
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	2.16	pg/L	2.16	20.0
56558-16-8	104-PeCB	U	1.5	pg/L	1.50	20.0
32598-14-4	105-PeCB	U	2.46	pg/L	2.46	20.0
70424-69-0	106-PeCB	U	2.02	pg/L	2.02	20.0
70424-68-9	107-PeCB	U	1.82	pg/L	1.82	20.0
70362-41-3	108-PeCB	CU	2.12	pg/L	2.12	40.0
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	2.72	pg/L	2.02	40.0
39635-32-0	111-PeCB	U	1.88	pg/L	1.88	20.0
74472-36-9	112-PeCB	U	1.78	pg/L	1.78	20.0
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	2.36	pg/L	2.36	20.0
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	U	2.22	pg/L	2.22	20.0
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	1.66	pg/L	1.66	20.0
56558-18-0	121-PeCB	U	1.94	pg/L	1.94	20.0
76842-07-4	122-PeCB	U	2.12	pg/L	2.12	20.0
65510-44-3	123-PeCB	U	2.34	pg/L	2.34	20.0
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	2.92	pg/L	2.92	20.0
39635-33-1	127-PeCB	U	1.98	pg/L	1.98	20.0
38380-07-3	128-HxCB	CU	1.44	pg/L	1.44	40.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017234**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33181**				
Client ID:	**MB for batch 33181**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/04/2016 18:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CU	1.62	pg/L	1.62	60.0
52663-66-8	130-HxCB	U	1.7	pg/L	1.70	20.0
61798-70-7	131-HxCB	U	2.14	pg/L	2.14	20.0
38380-05-1	132-HxCB	U	1.9	pg/L	1.90	20.0
35694-04-3	133-HxCB	U	1.68	pg/L	1.68	20.0
52704-70-8	134-HxCB	U	2.2	pg/L	2.20	20.0
52744-13-5	135-HxCB	CU	1.32	pg/L	1.32	40.0
38411-22-2	136-HxCB	U	.98	pg/L	0.980	20.0
35694-06-5	137-HxCB	U	1.66	pg/L	1.66	20.0
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	1.62	pg/L	1.62	40.0
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	1.58	pg/L	1.58	20.0
41411-61-4	142-HxCB	U	1.76	pg/L	1.76	20.0
68194-15-0	143-HxCB	U	1.62	pg/L	1.62	20.0
68194-14-9	144-HxCB	U	1.24	pg/L	1.24	20.0
74472-40-5	145-HxCB	U	1.1	pg/L	1.10	20.0
51908-16-8	146-HxCB	U	1.38	pg/L	1.38	20.0
68194-13-8	147-HxCB	CU	1.58	pg/L	1.58	40.0
74472-41-6	148-HxCB	U	1.24	pg/L	1.24	20.0
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	1.06	pg/L	1.06	20.0
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.96	pg/L	0.960	20.0
35065-27-1	153-HxCB	CU	2.34	pg/L	2.34	40.0
60145-22-4	154-HxCB	U	1.1	pg/L	1.10	20.0
33979-03-2	155-HxCB	U	.84	pg/L	0.840	20.0
38380-08-4	156-HxCB	CU	1.58	pg/L	1.58	40.0
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	1.14	pg/L	1.14	20.0
39635-35-3	159-HxCB	U	1.1	pg/L	1.10	20.0
41411-62-5	160-HxCB	U	1.44	pg/L	1.44	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017234**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33181**				
Client ID:	**MB for batch 33181**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/04/2016 18:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.22	pg/L	1.22	20.0
39635-34-2	162-HxCB	U	1.2	pg/L	1.20	20.0
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	1.2	pg/L	1.20	20.0
74472-46-1	165-HxCB	U	1.46	pg/L	1.46	20.0
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	1.2	pg/L	1.20	20.0
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.4	pg/L	1.40	20.0
35065-30-6	170-HpCB	U	1.34	pg/L	1.34	20.0
52663-71-5	171-HpCB	CU	1.3	pg/L	1.30	40.0
52663-74-8	172-HpCB	U	1.34	pg/L	1.34	20.0
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	U	1.26	pg/L	1.26	20.0
40186-70-7	175-HpCB	U	1.22	pg/L	1.22	20.0
52663-65-7	176-HpCB	U	.96	pg/L	0.960	20.0
52663-70-4	177-HpCB	U	1.36	pg/L	1.36	20.0
52663-67-9	178-HpCB	U	1.3	pg/L	1.30	20.0
52663-64-6	179-HpCB	U	.96	pg/L	0.960	20.0
35065-29-3	180-HpCB	CU	1.16	pg/L	1.16	40.0
74472-47-2	181-HpCB	U	1.36	pg/L	1.36	20.0
60145-23-5	182-HpCB	U	1.24	pg/L	1.24	20.0
52663-69-1	183-HpCB	CU	1.28	pg/L	1.28	40.0
74472-48-3	184-HpCB	U	1.02	pg/L	1.02	20.0
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	1.06	pg/L	1.06	20.0
52663-68-0	187-HpCB	U	1.28	pg/L	1.28	20.0
74487-85-7	188-HpCB	U	.98	pg/L	0.980	20.0
39635-31-9	189-HpCB	U	1.58	pg/L	1.58	20.0
41411-64-7	190-HpCB	U	1.04	pg/L	1.04	20.0
74472-50-7	191-HpCB	U	1	pg/L	1.00	20.0
74472-51-8	192-HpCB	U	1.18	pg/L	1.18	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017234**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33181**				
Client ID:	**MB for batch 33181**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/04/2016 18:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	U	1.14	pg/L	1.14	20.0
52663-78-2	195-OcCB	U	1.18	pg/L	1.18	20.0
42740-50-1	196-OcCB	U	1.04	pg/L	1.04	20.0
33091-17-7	197-OcCB	CU	.84	pg/L	0.840	40.0
68194-17-2	198-OcCB	CU	1.12	pg/L	1.12	40.0
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	.8	pg/L	0.800	20.0
2136-99-4	202-OcCB	U	.9	pg/L	0.900	20.0
52663-76-0	203-OcCB	U	1.08	pg/L	1.08	20.0
74472-52-9	204-OcCB	U	.8	pg/L	0.800	20.0
74472-53-0	205-OcCB	U	1.02	pg/L	1.02	20.0
40186-72-9	206-NoCB	U	1.38	pg/L	1.38	20.0
52663-79-3	207-NoCB	U	.92	pg/L	0.920	20.0
52663-77-1	208-NoCB	U	1.06	pg/L	1.06	20.0
2051-24-3	209-DeCB	U	1.32	pg/L	1.32	20.0
27323-18-8	Total Mono PCBs	U	0	pg/L	6.66	20.0
25512-42-9	Total Di PCBs		81.2	pg/L	6.66	20.0
25323-68-6	Total Tri PCBs		20.4	pg/L	6.66	20.0
26914-33-0	Total Tetra PCBs	J	13.3	pg/L	6.66	20.0
25429-29-2	Total Penta PCBs	J	2.72	pg/L	6.66	20.0
26601-64-9	Total Hexa PCBs	U	0	pg/L	6.66	20.0
28655-71-2	Total Hepta PCBs	U	0	pg/L	6.66	20.0
55722-26-4	Total Octa PCBs	U	0	pg/L	6.66	20.0
53742-07-7	Total Nona PCBs	U	0	pg/L	6.66	20.0
2051-24-3	Total Deca PCB	U	0	pg/L	6.66	20.0
1336-36-3	Total PCB Congeners		118	pg/L	6.66	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1100	2000	pg/L	55.1	(15%-150%)
13C-3-MoCB		1220	2000	pg/L	60.8	(15%-150%)
13C-4-DiCB		1260	2000	pg/L	63.0	(25%-150%)
13C-15-DiCB		1820	2000	pg/L	90.9	(25%-150%)
13C-19-TrCB		1660	2000	pg/L	83.1	(25%-150%)
13C-37-TrCB		1770	2000	pg/L	88.5	(25%-150%)
13C-54-TeCB		1360	2000	pg/L	67.9	(25%-150%)
13C-77-TeCB		1960	2000	pg/L	97.9	(25%-150%)
13C-81-TeCB		1990	2000	pg/L	99.4	(25%-150%)
13C-104-PeCB		1410	2000	pg/L	70.4	(25%-150%)
13C-105-PeCB		1750	2000	pg/L	87.6	(25%-150%)
13C-114-PeCB		1730	2000	pg/L	86.6	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017234**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33181**				
Client ID:	**MB for batch 33181**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/04/2016 18:46**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a-4**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1760	2000	pg/L	88.1	(25%-150%)
13C-123-PeCB		1780	2000	pg/L	88.8	(25%-150%)
13C-126-PeCB		1750	2000	pg/L	87.3	(25%-150%)
13C-155-HxCB		1490	2000	pg/L	74.4	(25%-150%)
13C-156-HxCB	C	3160	4000	pg/L	79.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1660	2000	pg/L	83.0	(25%-150%)
13C-169-HxCB		1580	2000	pg/L	79.0	(25%-150%)
13C-188-HpCB		1790	2000	pg/L	89.7	(25%-150%)
13C-189-HpCB		1690	2000	pg/L	84.7	(25%-150%)
13C-202-OcCB		1900	2000	pg/L	94.9	(25%-150%)
13C-205-OcCB		2000	2000	pg/L	100	(25%-150%)
13C-206-NoCB		1960	2000	pg/L	98.1	(25%-150%)
13C-208-NoCB		1880	2000	pg/L	94.2	(25%-150%)
13C-209-DeCB		2020	2000	pg/L	101	(25%-150%)
13C-28-TrCB		1060	2000	pg/L	53.2	(30%-135%)
13C-111-PeCB		1240	2000	pg/L	61.9	(30%-135%)
13C-178-HpCB		1290	2000	pg/L	64.3	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017235**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33181**				
Client ID:	**LCS for batch 33181**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/04/2016 16:34**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a-2**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		501	pg/L	1.94	20.0
2051-62-9	3-MoCB		524	pg/L	2.24	20.0
13029-08-8	4-DiCB		445	pg/L	6.28	20.0
2050-68-2	15-DiCB		517	pg/L	6.86	20.0
38444-73-4	19-TrCB		471	pg/L	3.80	20.0
38444-90-5	37-TrCB		452	pg/L	2.94	20.0
15968-05-5	54-TeCB		923	pg/L	1.24	20.0
32598-13-3	77-TeCB		882	pg/L	7.70	20.0
70362-50-4	81-TeCB		1040	pg/L	7.36	20.0
56558-16-8	104-PeCB		1010	pg/L	1.44	20.0
32598-14-4	105-PeCB		1140	pg/L	5.36	20.0
74472-37-0	114-PeCB		991	pg/L	5.28	20.0
31508-00-6	118-PeCB		931	pg/L	4.90	20.0
65510-44-3	123-PeCB		888	pg/L	5.06	20.0
57465-28-8	126-PeCB		1010	pg/L	6.24	20.0
33979-03-2	155-HxCB		952	pg/L	0.820	20.0
38380-08-4	156-HxCB	C	2100	pg/L	6.18	40.0
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1090	pg/L	4.52	20.0
32774-16-6	169-HxCB		938	pg/L	5.40	20.0
74487-85-7	188-HpCB		925	pg/L	1.12	20.0
39635-31-9	189-HpCB		928	pg/L	2.92	20.0
2136-99-4	202-OcCB		1360	pg/L	4.22	20.0
74472-53-0	205-OcCB		1240	pg/L	1.88	20.0
40186-72-9	206-NoCB		1330	pg/L	1.66	20.0
52663-77-1	208-NoCB		1430	pg/L	1.30	20.0
2051-24-3	209-DeCB		1330	pg/L	1.46	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1090	2000	pg/L	54.4	(15%-140%)
13C-3-MoCB		1220	2000	pg/L	60.8	(15%-140%)
13C-4-DiCB		1230	2000	pg/L	61.6	(30%-140%)
13C-15-DiCB		1800	2000	pg/L	90.1	(30%-140%)
13C-19-TrCB		1600	2000	pg/L	79.8	(30%-140%)
13C-37-TrCB		1750	2000	pg/L	87.6	(30%-140%)
13C-54-TeCB		1360	2000	pg/L	68.0	(30%-140%)
13C-77-TeCB		1990	2000	pg/L	99.3	(30%-140%)
13C-81-TeCB		2010	2000	pg/L	101	(30%-140%)
13C-104-PeCB		1360	2000	pg/L	67.8	(30%-140%)
13C-105-PeCB		1750	2000	pg/L	87.3	(30%-140%)
13C-114-PeCB		1720	2000	pg/L	86.0	(30%-140%)
13C-118-PeCB		1750	2000	pg/L	87.4	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017235**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33181**				
Client ID:	**LCS for batch 33181**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/04/2016 16:34**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a-2**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		1750	2000	pg/L	87.7	(30%-140%)
13C-126-PeCB		1750	2000	pg/L	87.5	(30%-140%)
13C-155-HxCB		1500	2000	pg/L	75.0	(30%-140%)
13C-156-HxCB	C	3190	4000	pg/L	79.8	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		1670	2000	pg/L	83.4	(30%-140%)
13C-169-HxCB		1590	2000	pg/L	79.6	(30%-140%)
13C-188-HpCB		1770	2000	pg/L	88.3	(30%-140%)
13C-189-HpCB		1700	2000	pg/L	85.2	(30%-140%)
13C-202-OcCB		1840	2000	pg/L	91.9	(30%-140%)
13C-205-OcCB		1990	2000	pg/L	99.5	(30%-140%)
13C-206-NoCB		1940	2000	pg/L	96.8	(30%-140%)
13C-208-NoCB		1850	2000	pg/L	92.6	(30%-140%)
13C-209-DeCB		1980	2000	pg/L	99.2	(30%-140%)
13C-28-TrCB		1320	2000	pg/L	66.1	(40%-125%)
13C-111-PeCB		1470	2000	pg/L	73.3	(40%-125%)
13C-178-HpCB		1530	2000	pg/L	76.5	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017236**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33181**				
Client ID:	**LCSD for batch 33181**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/04/2016 17:40**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a-3**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		468	pg/L	2.26	20.0
2051-62-9	3-MoCB		514	pg/L	2.64	20.0
13029-08-8	4-DiCB		447	pg/L	7.18	20.0
2050-68-2	15-DiCB		509	pg/L	8.24	20.0
38444-73-4	19-TrCB		462	pg/L	3.80	20.0
38444-90-5	37-TrCB		446	pg/L	7.98	20.0
15968-05-5	54-TeCB		944	pg/L	1.78	20.0
32598-13-3	77-TeCB		874	pg/L	7.72	20.0
70362-50-4	81-TeCB		1020	pg/L	7.12	20.0
56558-16-8	104-PeCB		973	pg/L	1.78	20.0
32598-14-4	105-PeCB		1120	pg/L	7.80	20.0
74472-37-0	114-PeCB		982	pg/L	7.54	20.0
31508-00-6	118-PeCB		914	pg/L	7.14	20.0
65510-44-3	123-PeCB		875	pg/L	7.32	20.0
57465-28-8	126-PeCB		1010	pg/L	9.26	20.0
33979-03-2	155-HxCB		938	pg/L	0.980	20.0
38380-08-4	156-HxCB	C	2060	pg/L	8.88	40.0
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1090	pg/L	6.42	20.0
32774-16-6	169-HxCB		933	pg/L	7.78	20.0
74487-85-7	188-HpCB		935	pg/L	1.24	20.0
39635-31-9	189-HpCB		913	pg/L	2.94	20.0
2136-99-4	202-OcCB		1360	pg/L	1.50	20.0
74472-53-0	205-OcCB		1250	pg/L	2.80	20.0
40186-72-9	206-NoCB		1350	pg/L	2.32	20.0
52663-77-1	208-NoCB		1430	pg/L	1.76	20.0
2051-24-3	209-DeCB		1320	pg/L	1.84	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		848	2000	pg/L	42.4	(15%-140%)
13C-3-MoCB		930	2000	pg/L	46.5	(15%-140%)
13C-4-DiCB		943	2000	pg/L	47.1	(30%-140%)
13C-15-DiCB		1320	2000	pg/L	66.0	(30%-140%)
13C-19-TrCB		1210	2000	pg/L	60.6	(30%-140%)
13C-37-TrCB		1220	2000	pg/L	61.1	(30%-140%)
13C-54-TeCB		1020	2000	pg/L	51.0	(30%-140%)
13C-77-TeCB		1320	2000	pg/L	65.9	(30%-140%)
13C-81-TeCB		1350	2000	pg/L	67.5	(30%-140%)
13C-104-PeCB		997	2000	pg/L	49.9	(30%-140%)
13C-105-PeCB		1190	2000	pg/L	59.6	(30%-140%)
13C-114-PeCB		1180	2000	pg/L	59.2	(30%-140%)
13C-118-PeCB		1210	2000	pg/L	60.3	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6J0588**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017236**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33181**				
Client ID:	**LCSD for batch 33181**			**Prep Basis:**	**As Received**
Batch ID:	**33183**	**Method:**	**EPA Method 1668A**		
Run Date:	**11/04/2016 17:40**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c04nov16a-3**			**Dilution:**	**1**
Prep Batch:	**33181**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**03-NOV-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		1220	2000	pg/L	61.0	(30%-140%)
13C-126-PeCB		1180	2000	pg/L	59.0	(30%-140%)
13C-155-HxCB		1060	2000	pg/L	52.9	(30%-140%)
13C-156-HxCB	C	2190	4000	pg/L	54.7	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		1140	2000	pg/L	57.0	(30%-140%)
13C-169-HxCB		1070	2000	pg/L	53.5	(30%-140%)
13C-188-HpCB		1220	2000	pg/L	60.9	(30%-140%)
13C-189-HpCB		1170	2000	pg/L	58.6	(30%-140%)
13C-202-OcCB		1280	2000	pg/L	64.2	(30%-140%)
13C-205-OcCB		1360	2000	pg/L	67.8	(30%-140%)
13C-206-NoCB		1320	2000	pg/L	66.1	(30%-140%)
13C-208-NoCB		1290	2000	pg/L	64.3	(30%-140%)
13C-209-DeCB		1360	2000	pg/L	68.1	(30%-140%)
13C-28-TrCB		1030	2000	pg/L	51.7	(40%-125%)
13C-111-PeCB		1070	2000	pg/L	53.7	(40%-125%)
13C-178-HpCB		1100	2000	pg/L	55.2	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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Supplemental Report 1

The original report has been revised/corrected.

WORK ORDER NUMBER: 16-10-1404

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: APEX Laboratories, LLC

Client Project Name: A6J0588

Attention: Philip Nerenberg
12232 SW Garden Place
Portland, OR 97223-8246

Approved for release on 11/15/2016 by:
Lori Thompson
Project Manager

ResultLink

Email your PM

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Work Order Number: 16-10-1404

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Work Order Narrative

Work Order: 16-10-1404 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 10/19/16. They were assigned to Work Order 16-10-1404.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

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Sample Summary

Client:	APEX Laboratories, LLC 12232 SW Garden Place Portland, OR 97223-8246	Work Order:	16-10-1404
		Project Name:	A6J0588
		PO Number:	
		Date/Time Received:	10/19/16 07:36
		Number of Containers:	14
Attn:	Philip Nerenberg		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B18-D-CB1	16-10-1404-1	10/13/16 05:40	1	Aqueous
B18-D-CB2	16-10-1404-2	10/13/16 05:45	1	Aqueous
B18-D-CB3	16-10-1404-3	10/13/16 07:25	1	Aqueous
B18-F-1	16-10-1404-4	10/13/16 05:55	1	Aqueous
B18-F-2	16-10-1404-5	10/13/16 07:20	1	Aqueous
B18-F-3	16-10-1404-6	10/13/16 06:30	1	Aqueous
B18-F-4	16-10-1404-7	10/13/16 06:20	1	Aqueous
B18-F-5	16-10-1404-8	10/13/16 07:25	1	Aqueous
B18-F-6	16-10-1404-9	10/13/16 06:25	1	Aqueous
B18-F-7	16-10-1404-10	10/13/16 05:58	1	Aqueous
B18-F-R1	16-10-1404-11	10/13/16 05:42	1	Aqueous
B18-F-R2	16-10-1404-12	10/13/16 05:40	1	Aqueous
B18-F-R3	16-10-1404-13	10/13/16 06:40	1	Aqueous
B18-OF	16-10-1404-14	10/13/16 08:15	1	Aqueous

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Analytical Report

APEX Laboratories, LLC
12232 SW Garden Place
Portland, OR 97223-8246

Project: A6J0588

Date Received: 10/19/16
Work Order: 16-10-1404
Preparation: EPA 3510C
Method: Organotins by Krone et al.
Units: ng/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B18-D-CB1	**16-10-1404-1-A**	**10/13/16 05:40**	**Aqueous**	**GC/MS Y**	**10/19/16**	**10/28/16 12:57**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	4.7	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.8	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	103	19-121	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B18-D-CB2	**16-10-1404-2-A**	**10/13/16 05:45**	**Aqueous**	**GC/MS Y**	**10/19/16**	**10/24/16 15:02**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	36	19-121	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B18-D-CB3	**16-10-1404-3-A**	**10/13/16 07:25**	**Aqueous**	**GC/MS Y**	**10/19/16**	**10/24/16 15:18**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.8	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	96	19-121	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

APEX Laboratories, LLC
12232 SW Garden Place
Portland, OR 97223-8246

Date Received: 10/19/16
Work Order: 16-10-1404
Preparation: EPA 3510C
Method: Organotins by Krone et al.
Units: ng/L

Project: A6J0588

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B18-F-1	**16-10-1404-4-A**	**10/13/16 05:55**	**Aqueous**	**GC/MS Y**	**10/19/16**	**10/24/16 19:27**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	109	19-121	

B18-F-2	**16-10-1404-5-A**	**10/13/16 07:20**	**Aqueous**	**GC/MS Y**	**10/19/16**	**10/24/16 19:42**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	72	19-121	

B18-F-3	**16-10-1404-6-A**	**10/13/16 06:30**	**Aqueous**	**GC/MS Y**	**10/19/16**	**10/24/16 19:58**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.8	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	93	19-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

APEX Laboratories, LLC
12232 SW Garden Place
Portland, OR 97223-8246

Date Received: 10/19/16
Work Order: 16-10-1404
Preparation: EPA 3510C
Method: Organotins by Krone et al.
Units: ng/L

Project: A6J0588

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B18-F-4	**16-10-1404-7-A**	**10/13/16 06:20**	**Aqueous**	**GC/MS Y**	**10/19/16**	**10/24/16 20:13**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.8	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	93	19-121	

B18-F-5	**16-10-1404-8-A**	**10/13/16 07:25**	**Aqueous**	**GC/MS Y**	**10/19/16**	**10/24/16 16:35**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	76	19-121	

B18-F-6	**16-10-1404-9-A**	**10/13/16 06:25**	**Aqueous**	**GC/MS Y**	**10/19/16**	**10/24/16 16:51**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	70	19-121	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

APEX Laboratories, LLC
12232 SW Garden Place
Portland, OR 97223-8246

Project: A6J0588

Date Received: 10/19/16
Work Order: 16-10-1404
Preparation: EPA 3510C
Method: Organotins by Krone et al.
Units: ng/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B18-F-7	**16-10-1404-10-A**	**10/13/16 05:58**	**Aqueous**	**GC/MS Y**	**10/19/16**	**10/24/16 17:07**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	62	19-121	

B18-F-R1	**16-10-1404-11-A**	**10/13/16 05:42**	**Aqueous**	**GC/MS Y**	**10/19/16**	**10/24/16 17:22**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	61	19-121	

B18-F-R2	**16-10-1404-12-A**	**10/13/16 05:40**	**Aqueous**	**GC/MS Y**	**10/19/16**	**10/24/16 17:38**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	59	19-121	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

APEX Laboratories, LLC
12232 SW Garden Place
Portland, OR 97223-8246

Date Received: 10/19/16
Work Order: 16-10-1404
Preparation: EPA 3510C
Method: Organotins by Krone et al.
Units: ng/L

Project: A6J0588

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B18-F-R3	**16-10-1404-13-A**	**10/13/16 06:40**	**Aqueous**	**GC/MS Y**	**10/19/16**	**10/24/16 17:53**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	59	19-121	

B18-OF	**16-10-1404-14-A**	**10/13/16 08:15**	**Aqueous**	**GC/MS Y**	**10/19/16**	**10/24/16 18:09**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	63	19-121	

Method Blank	**099-07-035-410**	**N/A**	**Aqueous**	**GC/MS Y**	**11/08/16**	**11/14/16 11:30**	**161108L05**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.8	1.00	
Monobutyltin	ND	50	2.4	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.4	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	113	19-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - Spike/Spike Duplicate

APEX Laboratories, LLC
12232 SW Garden Place
Portland, OR 97223-8246

Project: A6J0588

Date Received: 10/19/16
Work Order: 16-10-1404
Preparation: EPA 3510C
Method: Organotins by Krone et al.

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	MS/MSD Batch Number
16-11-0350-2	**Sample**	**Aqueous**	**GC/MS Y**	**11/08/16**	**11/14/16 13:46**	**161108S05**
16-11-0350-2	**Matrix Spike**	**Aqueous**	**GC/MS Y**	**11/08/16**	**11/14/16 12:32**	**161108S05**
16-11-0350-2	**Matrix Spike Duplicate**	**Aqueous**	**GC/MS Y**	**11/08/16**	**11/14/16 12:48**	**161108S05**

Parameter	Sample Conc.	Spike Added	MS Conc.	MS %Rec.	MSD Conc.	MSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Tetrabutyltin	ND	200.0	40.78	20	26.29	13	23-131	43	0-26	3,4
Tributyltin	ND	200.0	29.51	15	19.85	10	37-127	39	0-26	3,4

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RPD: Relative Percent Difference. CL: Control Limits

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Quality Control - LCS

APEX Laboratories, LLC		Date Received:	10/19/16
12232 SW Garden Place		Work Order:	16-10-1404
Portland, OR 97223-8246		Preparation:	EPA 3510C
		Method:	Organotins by Krone et al.
Project: A6J0588			Page 1 of 1

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS Batch Number
099-07-035-410	**LCS**	**Aqueous**	**GC/MS Y**	**11/08/16**	**11/14/16 11:45**	**161108L05**

Parameter	Spike Added	Conc. Recovered	LCS %Rec.	%Rec. CL	Qualifiers
Tetrabutyltin	200.0	243.0	122	35-131	
Tributyltin	200.0	204.9	102	50-120	

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 16-10-1404 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
Organotins by Krone et al.	EPA 3510C	907	GC/MS Y	1

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Glossary of Terms and Qualifiers

Work Order: 16-10-1404 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.
	Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.
	Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.
	A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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SUBCONTRACT ORDER

Apex Laboratories

A6J0588

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Eurofins_CalScience
7440 Lincoln Way
Garden Grove, CA 92841-1427
Phone :(714) 895-5494
Fax: (714) 894-7501

16-10-1404

1 **Sample Name: B18-D-CB1** **Water** **Sampled: 10/13/16 05:40** (A6J0588-01)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	10/26/16 17:00	10/27/16 05:40	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

2 **Sample Name: B18-D-CB2** **Water** **Sampled: 10/13/16 05:45** (A6J0588-02)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	10/26/16 17:00	10/27/16 05:45	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

3 **Sample Name: B18-D-CB3** **Water** **Sampled: 10/13/16 07:25** (A6J0588-03)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	10/26/16 17:00	10/27/16 07:25	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

4 **Sample Name: B18-F-1** **Water** **Sampled: 10/13/16 05:55** (A6J0588-04)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	10/26/16 17:00	10/27/16 05:55	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

Standard TAT

Released By: [signature] Date: 10/18/16 — Received By: Fed Ex (Shipper) Date:

Released By: Fed Ex (Shipper) Date: 10/19/16 — Received By: Wbath ECI Date: 10/19/16 0736

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SUBCONTRACT ORDER

Apex Laboratories

A6J0588

5 **Sample Name: B18-F-2** **Water** **Sampled: 10/13/16 07:20** (A6J0588-05)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	10/26/16 17:00	10/27/16 07:20	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

6 **Sample Name: B18-F-3** **Water** **Sampled: 10/13/16 06:30** (A6J0588-06)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	10/26/16 17:00	10/27/16 06:30	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

7 **Sample Name: B18-F-4** **Water** **Sampled: 10/13/16 06:20** (A6J0588-07)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	10/26/16 17:00	10/27/16 06:20	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

8 **Sample Name: B18-F-5** **Water** **Sampled: 10/13/16 07:25** (A6J0588-08)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	10/26/16 17:00	10/27/16 07:25	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

9 **Sample Name: B18-F-6** **Water** **Sampled: 10/13/16 06:25** (A6J0588-09)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	10/26/16 17:00	10/27/16 06:25	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

10 **Sample Name: B18-F-7** **Water** **Sampled: 10/13/16 05:58** (A6J0588-10)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	10/26/16 17:00	10/27/16 05:58	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

Released By	Date	Received By	Date
Fed Ex (Shipper)	10/19/16	Fed Ex (Shipper)	10/19/16 0736
Released By	Date	Received By	Date

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SUBCONTRACT ORDER

Apex Laboratories

A6J0588

1404

11 **Sample Name: B18-F-R1** **Water** **Sampled: 10/13/16 05:42** (A6J0588-11)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	10/26/16 17:00	10/27/16 05:42	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

12 **Sample Name: B18-F-R2** **Water** **Sampled: 10/13/16 05:40** (A6J0588-12)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	10/26/16 17:00	10/27/16 05:40	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

13 **Sample Name: B18-F-R3** **Water** **Sampled: 10/13/16 06:40** (A6J0588-13)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	10/26/16 17:00	10/27/16 06:40	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

14 **Sample Name: B18-OF** **Water** **Sampled: 10/13/16 ~~06:40~~ 0815** (A6J0588-14)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	10/26/16 17:00	10/27/16 06:40	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

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Released By: [signature] Date: 10/18/16 — Fed Ex (Shipper) — Received By: — Date:

Released By: Fed Ex (Shipper) Date: 10/19/16 — Received By: Wbatn ECI Date: 10/19/16 0736

1404

ORIGIN ID:BNOA (503) 718-2323
SAMPLE CONTROL
APEX LABS
12232 SW GARDEN PLACE

TIGARD, OR 97223
UNITED STATES US

SHIP DATE: 18OCT16
ACTWGT: 40.00 LB
CAD: 4716258/INET3790

BILL SENDER

TO DANIELLE GONSMAN
CALSCIENCE
7440 LINCOLN WAY

GARDEN GROVE CA 92841
(714) 895-5494 REF:
INV:
PO: DEPT:

544J3/FB42/14E8

FedEx Express

WED - 19 OCT 8:00A
FIRST OVERNIGHT

TRK# 0201 7775 0190 0358

W1 APVA

92841
CA-US SNA

Page 1

12232 SW GARDEN PLACE

TIGARD, OR 97223
UNITED STATES US

BILL SENDER

TO DANIELLE GONSMAN
CALSCIENCE
7440 LINCOLN WAY

GARDEN GROVE CA 92841
(714) 895-5494 REF:
INV:
PO: DEPT:

544J3/FB42/14E8

FedEx Express

WED - 19 OCT 8:00A
FIRST OVERNIGHT

TRK# 0201 7775 0189 5506

W1 APVA

92841
CA-US SNA

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WORK ORDER NUMBER: 16-10- 1404

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 2

CLIENT: Apex Labs

DATE: 10 / 19 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3A (CF: 0.0°C); Temperature (w/o CF): 3.0 °C (w/ CF): 3.0 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: AZ

CUSTODY SEAL:

Cooler	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: AZ
Sample(s)	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: AZ

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☑
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

HS 10/19/16

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOAh ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 125PB

☐ 125PB**znna** ☐ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 250PB ☐ 250PBn ☐ 500AGB ☐ 500AGJ ☐ 500AGJs

☐ 500PB ☑ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGBs ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: AZ

Reviewed by: SM

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WORK ORDER NUMBER: 16-10- 1404

SAMPLE RECEIPT CHECKLIST

COOLER 2 OF 2

CLIENT: Apex Lab

DATE: 10 / 19 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3A (CF: 0.0°C); Temperature (w/o CF): 2.8 °C (w/ CF): 2.8 °C; ☑ Blank ☐ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: AZ

CUSTODY SEAL:

Cooler	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: AZ
Sample(s)	☐ Present and Intact	☐ Present but Not Intact	☑ Not Present	☐ N/A	Checked by: AZ

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☑ PJ 10/19/16
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOAh ☐ VOA**na$_2$** ☐ 100PJ ☐ 100PJ**na$_2$** ☐ 125AGB ☐ 125AGB**h** ☐ 125AGB**p** ☐ 125PB

☐ 125PB**znna** ☑ 250AGB ☐ 250CGB ☐ 250CGB**s** ☐ 250PB ☐ 250PB**n** ☐ 500AGB ☐ 500AGJ ☐ 500AGJ**s**

☐ 500PB ☑ 1AGB ☐ 1AGB**na$_2$** ☐ 1AGB**s** ☐ 1PB ☐ 1PB**na** ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na$_2$** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: AZ

Reviewed by: SM

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Basin 18 Supplemental Storm Water Sampling and Analysis Data
November 22, 2016 Sampling Event Burgard Industrial Park
Source Control Project, Portland, Oregon
Rieke Consulting Services, LLC, 2017

RCS RIEKE CONSULTING SERVICES, LLC

Basin 18 Supplemental Storm Water Sampling and Analysis Data November 22, 2016 Sampling Event Burgard Industrial Park Source Control Project Portland, Oregon

TO: Ray Hoy/Oregon DEQ

CC: Jim Orr/Oregon DEQ
Eva DeMaria/EPA
Sean Sheldrake/EPA
Mat Cusma/Schnitzer
Mark Bartee/Schnitzer

FROM: Ross Rieke/RCS

DATE: January 31, 2017 (Revised April 17, 2017)

This memorandum presents the results of the November 22, 2016 storm water sampling and analysis performed at Basin 18 at the Burgard Industrial Park (BIP) in Portland, Oregon (Figure 1, Figure 2). The storm water sampling and analysis was performed in general accordance with the May 24, 2016 (Revised August 10, 2016), *Basin 18 Supplemental Sampling and Analysis Plan* (SSAP). The Basin 18 SSAP was revised from the original May 24, 2016 SSAP based on comments received from the Oregon Department of Environmental Quality (DEQ) during an August 8, 2016 meeting. DEQ provided conditional approval of the May 24, 2016 SSAP conditioned on the revisions provided in the revised Basin 18 SSAP.

A previous version of this report used incorrect units for PCB congener and PCB homolog concentrations when presenting the October 13, 2016 and November 22, 2016 sample results in Table 2, resulting in an overstatement of the PCB concentrations. Table 2 included with this revised report has been revised to show the correct PCB concentrations for these samples.

Basin 18 Description

Basin 18 consists of an approximately 85-acre area on the east side of the BIP. Figure 3 shows the approximate boundaries of Basin 18 and a summary of the primary storm water drainage features discharging to Outfall 18. The Basin 18 boundaries are based on site topography, observations made during rainfall events, and the drainage basins shown in historical Storm Water Pollution Prevention and Control (SWPC) plans prepared by the site operators within Basin 18.

Only about 25 acres of the Basin 18 area is within the BIP as defined in the 2000 Voluntary Agreement between Schnitzer and the Oregon DEQ. Basin 18 areas outside the BIP include:

- Northwest Pipe property (about 26 acres);
- Dunkin & Bush property (<1 acre);
- N. Sever Road (<1 acre);
- PGE Substation property (about 6 acres);

- Lampros property (about 25 acres); and
- City of Portland Burgard Road (about 2 acres).

Thus, about 70 percent of the area drained by Outfall 18 is not on the BIP site subject to the Voluntary Agreement between Schnitzer and DEQ for the source control evaluation work.

Activities occurring on the BIP portion of Basin 18 include vehicle traffic on the eastern portion of Burgard Way. Most of the southern portion of Basin 18 within the BIP is used by Northwest Pipe to store pipe and material inventory. Four buildings used for light manufacturing are located in the central portion of Basin 18 within the BIP. Figure 4 shows the paved areas within Basin 18.

The current Basin 18 sampling activities are focused toward the Dunkin & Bush (D&B) property and the portion of Basin 18 owned by Burgard Equities LLC and managed by Felton Management Corp (Felton Property). Figure 2 shows these areas of Basin 18.

D&B Property

The D&B Property is about 0.65 acres, level, and is approximately 40 percent covered by buildings or pavement, with a predominantly compacted gravel yard, a small landscaped area north of the office, and narrow landscaped strips along the northeast and southern edges of the Property (Figure 5). The D&B Property is used to support offsite painting services. Painting supplies and equipment, including paint, are stored on the D&B Property. Paint is stored under cover in secondary containment.

Source control measures performed by Dunkin & Bush consist of ongoing housekeeping, including use of secondary containment and covering materials when not in use. Use of secondary containment and storage of paints under cover greatly reduce the potential for paint-associated COIs from entering the storm water runoff. A portion of the Dunkin & Bush storage lot is paved to reduce solids entering the storm water system.

Felton Property

The Felton Property is about 20 acres, level (except along the eastern and portion of the southern perimeters), and is about 70 percent paved (Figure 6).

There are four tenants on the portion of the Felton Property being assessed.

- NW Pipe leases about 7 acres in the southern portion of the Felton Property and uses the partially paved area to store large-diameter “finished” (coated and sealed) steel pipe on unpaved (south) and paved (southwest) surfaces. NW Pipe has obtained a storm water “No Exposure Certificate” from the City of Portland Bureau of Environmental Services for this storage area.
- IRC Aluminum leases the western building in the northern portion of the Felton Property. IRC uses a high pressure water jet with garnet to cut metal in a closed-loop system. Cutting water goes through a solids settling basin then is discharged to the storm water system. Garnet is reclaimed from the solids settling basin and is recycled. All operations and waste storage are performed inside and all outside storage is covered.
- Western Machine Works leases the center building in the northern portion of the Felton Property. Western Machine Works performs repair and maintenance of large equipment used in the pulp, paper and wind power industries. A wash pad on the west side of the building is bermed and all waste water is collected. The collected waste water is treated with filtration prior to being discharged to the sanitary sewer. Western Machine has obtained a

storm water "No Exposure Certificate" from the City of Portland Bureau of Environmental Services.

- Pacific Leasing/Western Truck Center leases the eastern building in the northern portion of the Felton Property and uses the building to perform truck maintenance. Truck maintenance activities are performed inside the building. Occasionally, pressure-washing is performed outside of the southeast corner by a contractor. The contractor collects all waste wash water and removes the waste water from the site. Two catch basins are located under cover in the southeast corner of the building. Vehicle storage and, possibly, light vehicle maintenance appear to occur in this area.

NW Pipe also leases an area to the southwest directly south of their facility. NW Pipe is performing a remedial investigation/source control evaluation with DEQ in this area and this area is not addressed in the Basin 18 SSAP.

Current runon to the Felton Property appears to be limited to localized flow off of vegetated slopes along the eastern and southern boundaries of the Felton Property (Figure 6). Historically, large flows ran on to the southeast portion of the Felton Property from Burgard Road and the Northwest Container Services property to the east. The flows were of sufficient magnitude to routinely deposit offsite sediment on to the Felton Property and into the Felton Property catch basins. Samples of this runon water were collected in January 2006 (see Appendix A of the April 13, 2007 *Source Control Evaluation Report, Burgard Industrial Park*) and in December 2012 (see Table 3). The sample results noted polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), dioxins, and metals. Reconstruction of Burgard Road in 2014 east of the Felton Property eliminated this runon.

Felton periodically inspects the properties to ensure that tenants implement proper BMPs. BMPs include minimizing or eliminating outside operations or material storage. Exterior storage of metal scrap is discouraged. Tenants are aware of the risk of any facility discharge outside to the parking lot. Felton has had the paved surfaces swept and the two onsite oil-water separators and all catch basins cleaned out. The removed sediment was disposed offsite by the cleaning contractor. Most of the catch basins are fitted with fabric filter inserts.

Basin 18 Supplemental Storm Water Sampling and Analysis

Storm Water Sample Collection

Basin 18 storm water samples were collected on November 22, 2016 at the following locations in accordance with the hierarchical sampling methodology shown in Figure 7.

B18-D-CB1: Sample collected from water flowing into the catch basin from the connected roof drain.

B18-D-CB3: Sample collected from water discharging into the catch basin.

B18-F-1: Sample collected from standing water in the catch basin.

B18-F-2: Sample collected from standing water in the discharge side of the separator.

B18-F-3: Sample collected from standing water in the discharge side of the separator.

B18-F-4: Sample collected from standing water in the catch basin.

B18-F-5: Sample collected from water flowing into the catch basin at the catch basin edge.

B18-F-6: Sample collected from water flowing into the catch basin at the catch basin edge.

B18-F-7: Sample collected from water flowing into the catch basin at the catch basin edge.

B18-F-R1: Sample collected from roof drain drop pipe.

B18-F-R2: Sample collected from roof drain drop pipe.

B18-F-R3: Sample collected from roof drain drop pipe.

Representative sampling points were not accessible at Outfall 18 or immediately upgradient manholes during the November 22, 2016 sampling event.

Table 1 presents the rainfall conditions preceding and during the storm water sampling event. Only about 0.01 inches of rainfall fell in the 24 hours prior to collection of the storm water samples and more than 0.8 inches of rainfall fell during the more than 10-hour storm event. Based on the rainfall and sample collection timing, samples B18-D-CB1, B18-D-CB3, B18-F-1, B18-F-4, B18-F-5, B18-F-6, B18-F-7, B18-F-R2, and B18-F-R3 represent first-flush conditions.

Storm Water Sample Analysis

The Basin 18 storm water samples were analyzed for the following:

- Aluminum, antimony, arsenic, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver, and zinc;
- Butyltins;
- PCB aroclors, homologs, and congeners;
- Dioxins/furans;
- Phthalates;
- Polycyclic aromatic hydrocarbons (PAHs);
- Total organic carbon (TOC);
- Total Petroleum Hydrocarbons (gasoline, diesel, and heavy oil); and
- Total suspended solids (TSS).

Table 2 presents the results of the Basin 18 storm water sample analyses. Copies of the analytical laboratory reports are provided in Appendix A. Review of the laboratory QA/QC results did not indicate any issues requiring corrective action. Table 2 also presents the result of previous storm water sampling and analysis in Basin 18[1]. Figure 3 shows the previous storm water sample locations.

[1] Table 2 includes revisions to the butyltin data for the October 13, 2016 sampling event. Incorrect butyltin units were noted in the December 29, 2016 data memorandum.

Attachments:

Table 1 - Storm Water Sampling Event Rainfall Data, 11/22/2016 Sampling Event
Table 2 – Storm Water Sample Analytical Laboratory Results
Figure 1 – Site Location Map
Figure 2 – Burgard Industrial Park Site Plan
Figure 3 – Basin 18 Site Plan
Figure 4 – Basin 18 Impervious Surfaces
Figure 5 – Sample Locations, Dunkin & Bush Property
Figure 6 – Sample Locations, Felton Property
Figure 7 – Storm Water Sampling Hierarchy Flow Chart
Appendix A – Analytical Laboratory Reports.

Tables

Table 1
Storm Water Sampling Event Rainfall Data
11/22/2016 Sampling Event
Burgard Industrial Park Basin 18

Date	Daily Total	Hourly Rain Fall (0.01 inches)																							
		0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
11/8/2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/9/2016	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/10/2016	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/11/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
11/12/2016	7	6	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/13/2016	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1	2	0
11/14/2016	108	1	0	0	3	6	5	6	5	3	2	0	0	0	0	0	4	5	7	10	7	29	10	5	0
11/15/2016	17	0	1	0	0	0	0	0	1	0	0	0	2	0	0	12	0	0	0	0	0	1	0	0	0
11/16/2016	6	4	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/17/2016	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11/18/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
11/19/2016	12	0	0	0	0	4	1	1	1	0	1	0	0	0	0	1	0	1	1	0	0	0	1	0	0
11/20/2016	21	0	0	0	1	2	3	1	0	0	1	0	1	0	0	0	0	0	0	8	4	0	0	0	0
11/21/2016	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
11/22/2016	84	0	0	0	0	0	0	0	0	0	0	0	0	0	2	13	15	9	10	4	10	8	3	5	5

Data from Shipyard Rain Gage - 8900 N. Sever Road
Sampling Day
Sampling Hours

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 11/22/2016	B18-D-CB3 11/22/2016	B18-F-1 11/22/2016	B18-F-2 11/22/2016	B18-F-3 11/22/2016	B18-F-4 11/22/2016	B18-F-5 11/22/2016	B18-F-6 11/22/2016	B18-F-7 11/22/2016	B18-F-R1 11/22/2016	B18-F-R2 11/22/2016	B18-F-R3 11/22/2016	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016
PAHs (ug/l)																	
Acenaphthene	2.00E-01			1.90E-02 U	9.52E-02 U	4.17E-02 U	9.52E-03 U	9.43E-03 U	9.62E-03 U	3.85E-02 U	3.96E-01 U	3.85E-02 U	9.52E-03 U	9.43E-03 U	9.71E-03 U	9.52E-03 U	1.11E-02 U
Acenaphthylene	2.00E-01			9.52E-03 U	9.52E-02 U	4.17E-02 U	9.52E-03 U	9.43E-03 U	9.62E-03 U	7.34E-02 J	3.96E-01 U	3.85E-02 U	9.52E-03 U	9.43E-03 U	9.71E-03 U	9.52E-03 U	1.11E-02 U
Anthracene				9.52E-03 U	9.52E-02 U	4.17E-02 U	9.52E-03 U	9.43E-03 U	1.77E-02 J	1.07E-01	3.96E-01 U	3.85E-02 U	9.52E-03 U	9.43E-03 U	9.71E-03 U	9.52E-03 U	1.11E-02 U
Benzo(a)anthracene	1.80E-02	1.20E-03		1.22E-02 J	2.34E-01 J	5.24E-02 J	1.90E-02 U	9.43E-03 U	9.62E-03 U	1.82E-01 J	1.67E+00 J	6.61E-02 J	9.52E-03 U	9.43E-03 U	1.48E-02 J	9.52E-03 U	1.11E-02 U
Benzo(a)pyrene	1.80E-02	1.20E-04		2.86E-02 U	4.15E-01	7.03E-02 J	2.86E-02 U	1.42E-02 U	1.44E-02 U	3.66E-01	2.07E+00	1.41E-01	1.43E-02 U	1.42E-02 J	1.59E-02 J	1.43E-02 U	1.67E-02 U
Benzo(b)fluoranthene	1.80E-02	1.20E-03		1.43E-02 U	5.26E-01 J	6.98E-02 J	2.86E-02 U	1.42E-02 U	1.44E-02 U	8.09E-01 J	2.75E+00 J	1.41E-01 J	1.43E-02 U	1.42E-02 J	2.94E-02 J	1.43E-02 U	1.67E-02 U
Benzo(k)fluoranthene	1.80E-02	1.30E-03		1.43E-02 U	1.98E-01 J	6.25E-02 U	1.43E-02 U	1.42E-02 U	1.44E-02 U	2.51E-01 J	9.23E-01 J	5.77E-02 U	1.43E-02 U	1.42E-02 U	1.46E-02 U	1.43E-02 U	1.67E-02 U
Benzo(b+k)fluoranthene	1.80E-02	1.20E-03															
Benzo(g,h,i)perylene	2.00E-01			1.90E-02 U	4.26E-01	5.69E-02 J	1.90E-02 U	9.43E-03 U	9.62E-03 U	4.07E-01	1.51E+00	1.71E-01	9.52E-03 U	9.43E-03 U	1.60E-02 J	9.52E-03 U	1.11E-02 U
Chrysene	1.80E-02	1.30E-03		1.14E-02 J	4.71E-01 J	6.02E-02 J	9.52E-03 J	9.43E-03 U	9.62E-03 U	5.82E-01 J	2.66E+00 J	1.25E-01 J	9.52E-03 U	9.43E-03 U	1.83E-02 J	9.52E-03 U	1.11E-02 U
Dibenzo(a,h)anthracene	1.80E-02	1.20E-04		9.52E-03 U	9.52E-02 U	4.17E-02 U	9.52E-03 U	9.43E-03 U	9.62E-03 U	7.56E-02 J	3.96E-01 U	3.85E-02 U	9.52E-03 U	9.43E-03 U	9.71E-03 U	9.52E-03 U	1.11E-02 U
Fluoranthene	2.00E-01			2.04E-02	5.92E-01	8.26E-02 J	1.70E-02 J	1.20E-02 J	9.62E-03 U	3.61E-01	3.72E+00	1.85E-01	9.52E-03 U	1.94E-02	3.02E-02	9.52E-03 U	1.11E-02 U
Fluorene	2.00E-01			1.14E-02 J	9.52E-02 U	4.17E-02 U	1.10E-02 J	9.43E-03 U	9.62E-03 U	3.85E-02 U	3.96E-01 U	3.85E-02 U	9.52E-03 U	9.43E-03 U	9.71E-03 U	9.52E-03 U	1.11E-02 U
Indeno(1,2,3-cd)pyrene	1.80E-02	1.20E-03		1.90E-02 U	4.05E-01	4.17E-02 U	9.52E-03 U	9.43E-03 U	9.62E-03 U	3.84E-01	1.15E+00	1.06E-01	9.52E-03 U	9.43E-03 U	1.52E-02 J	9.52E-03 U	1.11E-02 U
Naphthalene	2.00E-01	1.20E+01		3.81E-02 U	1.90E-01 U	8.33E-02 U	1.90E-02 U	1.89E-02 U	1.92E-02 U	7.69E-02 U	7.92E-01 U	7.69E-02 U	1.90E-02 U	2.41E-02 J	1.94E-02 U	1.90E-02 U	2.22E-02 U
Phenanthrene	2.00E-01			3.07E-02	3.44E-01	4.46E-02 J	2.00E-02	1.55E-02 J	1.61E-02 J	7.51E-02 J	1.77E+00	9.36E-02	1.35E-02 J	2.52E-02	2.89E-02	1.69E-02 J	2.35E-02
Pyrene	2.00E-01			1.81E-02 J	6.94E-01	9.21E-02	2.07E-02	1.45E-02 J	9.62E-03 U	4.15E-01	4.07E+00	2.63E-01	9.52E-03 U	1.73E-02 J	2.96E-02	9.52E-03 U	1.11E-02 U
Total Detected CPAHs (BaP TEF)		1.20E-04		1.23E-03	4.84E-01	7.62E-02	9.52E-06	0.00E+00	0.00E+00	5.03E-01	2.37E+00	1.60E-01	0.00E+00	1.42E-02	1.91E-02	0.00E+00	0.00E+00
Total Detected PAHs			1.50E+00	1.04E-01	4.31E+00	5.29E-01	4.20E-02	4.20E-02	3.38E-02	4.09E+00	2.23E+01	1.29E+00	1.35E-02	1.14E-01	1.98E-01	1.69E-02	2.35E-02
PCBs (ug/l)																	
Aroclor 1016	9.60E-01			9.43E-03 U	9.52E-03 U	1.03E-02 U	9.52E-03 U	1.02E-02 U	9.52E-03 U	1.15E-02 U	9.62E-03 U	9.62E-03 U	9.52E-03 U	9.52E-03 U	9.62E-03 U	1.03E-02 U	9.62E-03 U
Aroclor 1221	3.40E-02			9.43E-03 U	9.52E-03 U	1.03E-02 U	9.52E-03 U	1.02E-02 U	9.52E-03 U	1.15E-02 U	9.62E-03 U	9.62E-03 U	9.52E-03 U	9.52E-03 U	9.62E-03 U	2.06E-02 U	9.62E-03 U
Aroclor 1232	3.40E-02			9.43E-03 U	9.52E-03 U	1.03E-02 U	9.52E-03 U	1.02E-02 U	9.52E-03 U	1.15E-02 U	9.62E-03 U	9.62E-03 U	9.52E-03 U	9.52E-03 U	9.62E-03 U	1.03E-02 U	9.62E-03 U
Aroclor 1242	3.40E-02			9.43E-03 U	9.52E-03 U	1.03E-02 U	9.52E-03 U	1.02E-02 U	9.52E-03 U	1.15E-02 U	1.26E+00 J	9.62E-03 U	9.52E-03 U	9.52E-03 U	9.62E-03 U	1.03E-02 U	9.62E-03 U
Aroclor 1248	3.40E-02			9.43E-03 U	9.52E-03 U	1.03E-02 U	9.52E-03 U	1.02E-02 U	9.52E-03 U	1.15E-02 U	9.62E-03 U	9.62E-03 U	9.52E-03 U	9.52E-03 U	9.62E-03 U	1.03E-02 U	9.62E-03 U
Aroclor 1254	3.40E-02			9.43E-03 U	2.02E-02	1.08E-02 J	9.52E-03 U	1.02E-02 U	9.52E-03 U	3.88E-02 J	4.93E-01 J	3.54E-01 J	9.52E-03 U	9.52E-03 U	9.62E-03 U	1.03E-02 U	9.62E-03 U
Aroclor 1260	3.40E-02			9.43E-03 U	9.52E-03 U	1.23E-02 J	9.52E-03 U	2.05E-02	9.52E-03 U	2.24E-02 J	1.37E-01 J	3.54E-01 J	9.52E-03 U	9.52E-03 U	9.62E-03 U	1.03E-02 U	9.62E-03 U
Total Detected PCB aroclors	6.40E-05	6.40E-06	0.3	0.00E+00	2.02E-02	2.31E-02	0.00E+00	2.05E-02	0.00E+00	6.12E-02	1.89E+00	7.08E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	0.00E+00
PCB Congeners (ug/l)																	
2-MonoCB-(1)																	
3-MonoCB-(2)																	
4-MonoCB-(3)																	
22'-DiCB-(4)																	
2,3-DiCB-(5)																	
2,3'-DiCB-(6)																	
2,4-DiCB-(7)																	
2,4'-DiCB-(8)																	
2,5-DiCB-(9)																	
2,6-DiCB-(10)																	
3,3'-DiCB-(11)																	
DiCB-(12)+(13)																	
3,5-DiCB-(14)																	
4,4'-DiCB-(15)																	
22'3-TriCB-(16)																	
22'4-TriCB-(17)																	
TriCB-(18)+(30)																	
22'6-TriCB-(19)																	
TriCB-(20) + (28)																	
TriCB-(21)+(33)																	
234'-TriCB-(22)																	
235-TriCB-(23)																	
236-TriCB-(24)																	
23'4-TriCB-(25)																	
TriCB-(26)+(29)																	
23'6-TriCB-(27)																	
24'5-TriCB-(31)																	
24'6-TriCB-(32)																	
23'5'-TriCB-(34)																	
33'4-TriCB-(35)																	
33'5-TriCB-(36)																	
344'-TriCB-(37)																	
345-TriCB-(38)																	
34'5-TriCB-(39)																	

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 11/22/2016	B18-D-CB3 11/22/2016	B18-F-1 11/22/2016	B18-F-2 11/22/2016	B18-F-3 11/22/2016	B18-F-4 11/22/2016	B18-F-5 11/22/2016	B18-F-6 11/22/2016	B18-F-7 11/22/2016	B18-F-R1 11/22/2016	B18-F-R2 11/22/2016	B18-F-R3 11/22/2016	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016
TetraCB-(40)+(41)+(71)																	
22'34'-TetraCB-(42)																	
22'35-TetraCB-(43)																	
TetraCB-(44)+(47)+(65)																	
TetraCB-(45)+(51)																	
22'36'-TetraCB-(46)																	
22'45-TetraCB-(48)																	
TetraCB-(49)+TetraCB-(69)																	
TetraCB-(50)+(53)																	
22'55'-TetraCB-(52)																	
22'66'-TetraCB-(54)																	
233'4-TetraCB-(55)																	
233'4'-Tetra CB(56)																	
233'5-TetraCB-(57)																	
233'5'-TetraCB-(58)																	
TetraCB-(59)+(62)+(75)																	
2344'-TetraCB -(60)																	
TetraCB-(61)+(70)+(74)+(76)																	
234'5-TetraCB-(63)																	
234'6-TetraCB-(64)																	
23'44'-TetraCB-(66)																	
23'45-TetraCB-(67)																	
23'45'-TetraCB-(68)																	
23'55'-TetraCB-(72)																	
23'5'6-TetraCB-(73)																	
33'44'-TetraCB-(77)																	
33'45-TetraCB-(78)																	
33'45'-TetraCB(79)																	
33'55'-TetraCB-(80)																	
344'5-TetraCB-(81)																	
22'33'4-PentaCB-(82)																	
PentaCB-(83)+(99)																	
22'33'6-PentaCB-(84)																	
PentaCB-(85)+(116)+(117)																	
PentaCB-(86)(87)(97)(109)(119)(125)																	
PentaCB-(88)+(91)																	
22'346'-PentaCB-(89)																	
PentaCB-(90)+(101)+(113)																	
22'355'-PentaCB-(92)																	
PentaCB-(93)+(98)+(100)+(102)																	
22'356'-PentaCB-(94)																	
22'35'6-PentaCB-(95)																	
22'366'-PentaCB-(96)																	
22'45'6-PentaCB-(103)																	
22'466'-PentaCB-(104)																	
233'44'-PentaCB-(105)																	
233'45-PentaCB-(106)																	
233'4'5-PentaCB-(107)																	
PentaCB-(108)+(124)																	
PentaCB-(110)+(115)																	
233'55'-PentaCB-(111)																	
233'56-PentaCB-(112)																	
2344'5-PentaCB-(114)																	
23'44'5-PentaCB-(118)																	
23'455'-PentaCB-(120)																	
23'45'6-PentaCB-(121)																	
233'4'5'-PentaCB-(122)																	
23'44'5'-PentaCB-(123)																	
33'44'5-PentaCB-(126)																	
33'455'-PentaCB-(127)																	
HexaCB-(128)+(166)																	
HexaCB-(129)+(138)+(163)																	
22'33'45'-HexaCB-(130)																	
22'33'46-HexaCB-(131)																	
22'33'46'-HexaCB-(132)																	
22'33'55'-HexaCB-(133)																	

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 11/22/2016	B18-D-CB3 11/22/2016	B18-F-1 11/22/2016	B18-F-2 11/22/2016	B18-F-3 11/22/2016	B18-F-4 11/22/2016	B18-F-5 11/22/2016	B18-F-6 11/22/2016	B18-F-7 11/22/2016	B18-F-R1 11/22/2016	B18-F-R2 11/22/2016	B18-F-R3 11/22/2016	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016
HexaCB-(134)+(143)																	
HexaCB-(135)+(151)																	
22'33'66'-HexaCB-(136)																	
22'344'5-HexaCB-(137)																	
HexaCB-(139)+(140)																	
22'3455'-HexaCB-(141)																	
22'3456-HexaCB-(142)																	
22'345'6-HexaCB-(144)																	
22'3466'-HexaCB-(145)																	
22'34'55'-HexaCB-(146)																	
HexaCB-(147)+(149)																	
22'34'56'-HexaCB-(148)																	
22'34'66'-HexaCB-(150)																	
22'3566'-HexaCB-(152)																	
HexaCB-(153)+(168)																	
22'44'56'-HexaCB-(154)																	
22'44'66'-HexaCB-(155)																	
HexaCB-(156)+(157)																	
233'44'6-HexaCB-(158)																	
233'455'-HexaCB-(159)																	
233'456-HexaCB-(160)																	
233'45'6-HexaCB-(161)																	
233'4'55'-HexaCB-(162)																	
233'4'5'6-HexaCB-(164)																	
233'55'6-HexaCB-(165)																	
23'44'55'-HexaCB-(167)																	
33'44'55'-HexaCB-(169)																	
22'33'44'5-HeptaCB-(170)																	
HeptaCB-(171)+(173)																	
22'33'455'-HeptaCB-(172)																	
22'33'456'-HeptaCB-(174)																	
22'33'45'6-HeptaCB-(175)																	
22'33'466'-HeptaCB-(176)																	
22'33'45'6'-HeptaCB-(177)																	
22'33'55'6-HeptaCB-(178)																	
22'33'566'-HeptaCB-(179)																	
HeptaCB-(180)+(193)																	
22'344'56-HeptaCB-(181)																	
22'344'56'-HeptaCB-(182)																	
22'344'5'6-HeptaCB-(183)																	
22'344'66'-HeptaCB-(184)																	
22'3455'6-HeptaCB-(185)																	
22'34566'-HeptaCB-(186)																	
22'34'55'6-HeptaCB-(187)																	
22'34'566'-HeptaCB-(188)																	
233'44'55'-HeptaCB-(189)																	
233'44'56-HeptaCB-(190)																	
233'44'5'6-HeptaCB-(191)																	
233'455'6-HeptaCB-(192)																	
22'33'44'55'-OctaCB-(194)																	
22'33'44'56-OctaCB-(195)																	
22'33'44'56'-OctaCB-(196)																	
22'33'44'66'OctaCB-(197)																	
OctaCB-(198)+(199)																	
22'33'4566'-OctaCB-(200)																	
22'33'45'66'-OctaCB-(201)																	
22'33'55'66'-OctaCB-(202)																	
22'344'55'6-OctaCB-(203)																	
22'344'566'-OctaCB-(204)																	
233'44'55'6-OctaCB-(205)																	
22'33'44'55'6-NonaCB-(206)																	
22'33'44'566'-NonaCB-(207)																	
22'33'455'66'-NonaCB-(208)																	
DecaCB-(209)																	
PCB Congeners (ug/l)																	

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 11/22/2016	B18-D-CB3 11/22/2016	B18-F-1 11/22/2016	B18-F-2 11/22/2016	B18-F-3 11/22/2016	B18-F-4 11/22/2016	B18-F-5 11/22/2016	B18-F-6 11/22/2016	B18-F-7 11/22/2016	B18-F-R1 11/22/2016	B18-F-R2 11/22/2016	B18-F-R3 11/22/2016	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016
2-Chlorobiphenyl (1)				5.18E-06 J	1.84E-05 J	1.10E-05 J	5.92E-06 U	4.32E-06 U	3.07E-06 U	9.86E-06 U	1.36E-03	2.13E-05 U	2.21E-06 U	5.13E-06 J	4.37E-06 J	3.66E-06 J	3.74E-06 J
3-Chlorobiphenyl (2)				2.86E-06 U	1.71E-05 J	4.02E-06 J	3.31E-06 U	3.65E-06 U	2.78E-06 U	8.09E-06 U	3.71E-04	1.78E-05 U	1.88E-06 U	2.91E-06 J	2.24E-06 U	1.78E-06 J	1.97E-06 J
4-Chlorobiphenyl (3)				2.74E-06 U	2.76E-05	7.64E-06 J	6.12E-06 U	3.32E-06 U	2.70E-06 U	7.19E-06 U	1.26E-03	1.64E-05 U	2.46E-06 U	4.88E-06 J	3.98E-06 J	3.36E-06 J	2.96E-06 J
2,2'-Dichlorobiphenyl (4)				1.38E-05 U	1.81E-04	6.97E-05	2.03E-05	1.51E-05 U	1.06E-05 U	3.77E-05	1.26E-02	1.51E-04 U	1.14E-05 J	2.26E-05	2.27E-05	6.18E-06 J	8.95E-06 J
2,3-Dichlorobiphenyl (5)				8.48E-06 U	9.17E-06 U	4.43E-06 U	9.27E-06 U	1.64E-05 U	7.45E-06 U	2.32E-05 U	1.01E-03	8.97E-05 U	3.15E-06 U	2.36E-06 U	4.20E-06 U	1.52E-06 U	1.73E-06 U
2,3'-Dichlorobiphenyl (6)				6.52E-06 U	5.68E-05	2.75E-05	6.96E-06 U	1.23E-05 U	5.59E-06 U	1.74E-05 U	7.33E-03	6.89E-05 U	4.56E-06 J	8.68E-06 J	9.00E-06 J	2.51E-06 J	3.70E-06 J
2,4-Dichlorobiphenyl (7)				7.04E-06 U	7.61E-06 U	3.78E-06 U	7.54E-06 U	1.33E-05 U	6.07E-06 U	1.88E-05 U	1.35E-03	7.44E-05 U	2.68E-06 U	2.56E-06 J	3.59E-06 U	1.34E-06 J	1.53E-06 U
2,4'-Dichlorobiphenyl (8)				2.26E-05	2.48E-04	1.27E-04	3.94E-05	2.13E-05	1.24E-05 J	8.46E-05	3.52E-02	2.73E-04	2.21E-05	4.31E-05	3.95E-05	9.32E-06 J	1.38E-05 J
2,5-Dichlorobiphenyl (9)				7.37E-06 U	1.63E-05 J	1.01E-05 J	7.67E-06 U	1.35E-05 U	6.17E-06 U	1.92E-05 U	2.17E-03	7.78E-05 U	2.80E-06 U	3.62E-06 J	3.75E-06 U	1.55E-06 J	2.70E-06 J
2,6-Dichlorobiphenyl (10)				5.58E-06 U	6.40E-06 U	3.26E-06 U	4.00E-06 U	6.43E-06 U	3.14E-06 U	9.71E-06 U	6.02E-04	7.98E-05 U	2.19E-06 U	1.78E-06 U	2.87E-06 U	1.23E-06 U	1.31E-06 U
3,3'-Dichlorobiphenyl (11)				4.69E-05 U	4.71E-04	2.18E-04	1.03E-04	4.40E-05 J	3.52E-05 J	1.51E-04 U	2.07E-03	3.80E-04 J	5.25E-05 J	6.96E-05 J	4.49E-05 J	4.28E-05 J	4.86E-05 J
3,4-Dichlorobiphenyl (12) (13)				7.37E-06 U	5.27E-05	2.23E-05 J	7.77E-06 U	1.37E-05 U	6.25E-06 U	1.94E-05 U	3.83E-03	7.78E-05 U	2.70E-06 U	7.59E-06 J	3.61E-06 U	2.72E-06 J	4.77E-06 J
3,5-Dichlorobiphenyl (14)				6.93E-06 U	7.50E-06 U	3.72E-06 U	7.12E-06 U	1.26E-05 U	5.73E-06 U	1.78E-05 U	1.23E-04 U	7.32E-05 U	2.56E-06 U	1.92E-06 U	3.42E-06 U	1.25E-06 U	1.43E-06 U
4,4'-Dichlorobiphenyl (15)				1.94E-05 U	2.05E-04	1.17E-04	3.82E-05	3.37E-05	1.16E-05 J	1.34E-04	3.04E-02	2.55E-04	1.68E-05 J	3.19E-05	2.67E-05	7.17E-06 J	1.35E-05 J
2,2',3-Trichlorobiphenyl (16)				1.30E-05 J	1.81E-04	8.22E-05	2.63E-05	2.51E-05	7.43E-06 J	7.03E-05	2.91E-02	2.17E-04	1.17E-05 J	2.27E-05	1.92E-05 J	4.76E-06 J	8.43E-06 J
2,2',4-Trichlorobiphenyl (17)				9.90E-06 J	1.61E-04	7.44E-05	2.10E-05	1.94E-05	7.01E-06 J	5.95E-05	2.49E-02	1.86E-04 J	9.93E-06 J	1.99E-05	1.86E-05 J	4.95E-06 J	6.42E-06 J
2,2',5-Trichlorobiphenyl (18) (30)				2.16E-05 J	3.56E-04	1.59E-04	4.58E-05	4.80E-05	1.57E-05 J	1.30E-04	5.00E-02	3.65E-04 J	2.24E-05 J	4.14E-05	4.06E-05	9.42E-06 J	1.42E-05 J
2,2',6-Trichlorobiphenyl (19)				3.91E-06 J	5.47E-05	2.29E-05	9.15E-06 J	1.36E-05 J	3.77E-06 J	1.98E-05	6.12E-03	5.12E-05 J	4.01E-06 J	7.65E-06 J	7.24E-06 J	2.03E-06 J	2.49E-06 J
2,3,3'-Trichlorobiphenyl (20) (28)				2.87E-05 J	4.73E-04	2.96E-04	7.15E-05	8.43E-05	2.19E-05 J	3.41E-04	9.83E-02	7.71E-04	2.92E-05 J	5.62E-05	5.35E-05	1.61E-05 J	2.54E-05 J
2,3,4-Trichlorobiphenyl (21) (33)				1.61E-05 J	2.57E-04	1.74E-04	3.87E-05	3.43E-05 J	9.89E-06 J	1.53E-04	6.03E-02	4.51E-04	1.71E-05 J	3.10E-05 J	3.31E-05 J	9.99E-06 J	1.60E-05 J
2,3,4'-Trichlorobiphenyl (22)				1.36E-05 J	2.10E-04	1.38E-04	3.27E-05	3.30E-05	9.83E-06 J	1.40E-04	4.10E-02	3.08E-04	1.33E-05 J	2.53E-05	2.49E-05	6.89E-06 J	1.14E-05 J
2,3,5-Trichlorobiphenyl (23)				1.07E-06 U	1.29E-06 U	1.27E-06 U	1.17E-06 U	1.57E-06 U	8.43E-07 U	3.01E-06 U	1.13E-04 J	1.19E-05 U	1.06E-06 U	6.97E-07 U	1.07E-06 U	9.59E-07 U	1.07E-06 U
2,3,6-Trichlorobiphenyl (24)				1.07E-06 U	6.99E-06 J	1.35E-06 U	1.25E-06 U	1.67E-06 U	9.01E-07 U	3.22E-06 U	1.41E-03	1.20E-05 U	1.17E-06 U	7.75E-07 U	1.17E-06 U	1.02E-06 U	1.13E-06 U
2,3',4-Trichlorobiphenyl (25)				2.03E-06 J	2.93E-05	1.87E-05 J	4.90E-06 J	5.53E-06 J	7.86E-07 J	1.86E-05 J	7.01E-03	5.25E-05 J	2.05E-06 J	3.31E-06 J	3.34E-06 J	1.44E-06 J	2.03E-06 J
2,3',5-Trichlorobiphenyl (26) (29)				4.87E-06 J	8.17E-05	4.38E-05	1.20E-05 J	1.21E-05 J	3.54E-06 J	4.22E-05	1.59E-02	1.38E-04 J	4.99E-06 J	9.70E-06 J	9.12E-06 J	2.95E-06 J	4.20E-06 J
2,3',6-Trichlorobiphenyl (27)				2.42E-06 J	2.65E-05	1.41E-05 J	4.77E-06 J	8.06E-06 J	1.19E-06 J	1.81E-05 J	4.19E-03	3.27E-05 J	1.66E-06 J	3.39E-06 J	2.34E-06 J	1.15E-06 U	1.61E-06 J
2,4',5-Trichlorobiphenyl (31)				2.27E-05	3.77E-04	2.24E-04	5.52E-05	5.92E-05	1.71E-05 J	2.16E-04	7.75E-02	6.09E-04	2.39E-05	4.53E-05	4.35E-05	1.21E-05 J	2.04E-05
2,4',6-Trichlorobiphenyl (32)				6.16E-06 J	8.89E-05	4.67E-05	1.28E-05 J	2.15E-05	3.83E-06 J	4.75E-05	1.71E-02	1.32E-04 J	5.42E-06 J	1.08E-05 J	1.19E-05 J	2.82E-06 J	3.90E-06 J
2',3,5-Trichlorobiphenyl (34)				1.06E-06 U	1.27E-06 U	1.27E-06 U	1.19E-06 U	1.59E-06 U	8.62E-07 U	3.09E-06 U	2.61E-04	1.18E-05 U	1.09E-06 U	7.36E-07 U	1.11E-06 U	8.82E-07 U	9.94E-07 U
3,3',4-Trichlorobiphenyl (35)				2.15E-06 J	2.96E-05	1.31E-05 J	4.58E-06 J	3.45E-06 U	1.65E-06 U	1.53E-05 J	1.90E-03	5.31E-05 J	1.58E-06 J	2.50E-06 J	2.23E-06 J	1.30E-06 U	2.59E-06 J
3,3',5-Trichlorobiphenyl (36)				1.32E-06 U	1.97E-06 U	1.90E-06 U	2.19E-06 U	3.22E-06 U	1.53E-06 U	4.65E-06 U	5.15E-05 U	1.39E-05 U	1.15E-06 U	1.16E-06 U	1.41E-06 U	1.25E-06 U	1.59E-06 U
3,4,4'-Trichlorobiphenyl (37)				1.74E-05 J	2.12E-04	1.65E-04	4.44E-05	4.82E-05	1.14E-05 J	2.32E-04	3.33E-02	3.70E-04	1.44E-05 J	2.57E-05	2.11E-05	6.98E-06 J	1.37E-05 J
3,4,5-Trichlorobiphenyl (38)				1.44E-06 U	2.14E-06 U	2.06E-06 U	2.25E-06 U	3.30E-06 U	1.59E-06 U	4.78E-06 U	5.59E-05 U	1.51E-05 U	1.23E-06 U	1.26E-06 U	1.52E-06 U	1.17E-06 U	1.51E-06 U
3,4',5-Trichlorobiphenyl (39)				1.42E-06 U	2.12E-06 U	2.06E-06 U	2.29E-06 U	3.36E-06 U	1.61E-06 U	4.84E-06 U	5.55E-05 U	1.50E-05 U	1.25E-06 U	1.28E-06 U	1.54E-06 U	1.25E-06 U	1.61E-06 U
2,2',3,3'-Tetrachlorobiphenyl (40) (71)				1.49E-05 J	2.83E-04	1.66E-04	3.87E-05	5.74E-05	1.21E-05 J	2.47E-04	3.81E-02	5.14E-04	1.01E-05 J	2.05E-05 J	2.24E-05 J	6.44E-06 J	1.05E-05 J
2,2',3,4-Tetrachlorobiphenyl (41)				3.93E-06 J	9.05E-05	4.20E-05	1.19E-05 J	7.96E-06 J	4.69E-06 U	5.62E-05	1.03E-02	1.08E-04 J	2.70E-06 J	5.21E-06 J	6.75E-06 U	1.90E-06 U	2.78E-06 J
2,2',3,4'-Tetrachlorobiphenyl (42)				7.60E-06 J	1.52E-04	8.59E-05	2.21E-05	2.85E-05	6.86E-06 J	1.34E-04	2.19E-02	2.74E-04	5.22E-06 J	1.23E-05 J	1.18E-05 J	3.66E-06 J	5.67E-06 J
2,2',3,5-Tetrachlorobiphenyl (43)				1.90E-06 U	2.94E-05	1.50E-05 J	4.02E-06 J	4.95E-06 J	4.20E-06 U	2.40E-05	4.08E-03	3.33E-05 J	1.82E-06 U	2.15E-06 J	6.01E-06 U	2.76E-06 U	2.07E-06 U
2,2',3,5'-Tetrachlorobiphenyl (44) (47) (65)				2.94E-05 J	1.05E-03	3.22E-04	8.18E-05	1.03E-04	3.25E-05 J	5.38E-04	7.66E-02	2.18E-03	2.18E-05 J	4.43E-05 J	4.92E-05 J	1.44E-05 J	2.09E-05 J
2,2',3,6-Tetrachlorobiphenyl (45) (51)				4.91E-06 J	7.34E-05	4.22E-05	1.30E-05 J	2.34E-05 J	4.16E-06 J	5.62E-05	1.57E-02	1.32E-04 J	4.87E-06 J	8.00E-06 J	7.77E-06 J	2.95E-06 J	4.49E-06 J
2,2',3,6'-Tetrachlorobiphenyl (46)				1.88E-06 J	2.97E-05	1.79E-05 J	5.42E-06 J	7.22E-06 J	1.80E-06 U	2.43E-05	5.55E-03	5.00E-05 J	1.17E-06 U	3.04E-06 J	2.58E-06 U	9.78E-07 U	1.83E-06 J
2,2',4,5-Tetrachlorobiphenyl (48)				6.22E-06 J	1.15E-04	6.19E-05	1.79E-05 J	2.20E-05	5.25E-06 J	8.40E-05	1.99E-02	1.59E-04 J	4.58E-06 J	1.01E-05 J	1.10E-05 J	2.95E-06 J	4.10E-06 J
2,2',4,5'-Tetrachlorobiphenyl (49) (69)				1.35E-05 J	4.89E-04	1.53E-04	4.07E-05	4.85E-05	1.48E-05 J	2.48E-04	4.18E-02	1.07E-03	1.10E-05 J	2.17E-05 J	2.25E-05 J	6.92E-06 J	1.07E-05 J
2,2',4,6-Tetrachlorobiphenyl (50) (53)				2.69E-06 J	5.70E-05	2.55E-05 J	7.94E-06 J	1.21E-05 J	2.13E-06 J	3.39E-05 J	1.02E-02	1.28E-04 J	1.96E-06 J	3.87E-06 J	4.14E-06 J	1.40E-06 J	2.76E-06 J
2,2',5,5'-Tetrachlorobiphenyl (52)				3.05E-05	2.44E-03	3.40E-04	8.39E-05	1.04E-04	4.60E-05	7.28E-04	7.41E-02	5.52E-03	2.34E-05	4.38E-05	4.83E-05	1.33E-05 J	1.89E-05 J
2,2',6,6'-Tetrachlorobiphenyl (54)				1.36E-06 U	1.56E-06 U	1.05E-06 U	2.17E-06 U	1.96E-06 U	1.03E-06 U	2.38E-06 U	1.63E-04 J	1.42E-05 U	1.04E-06 U	6.97E-07 U	1.23E-06 U	7.10E-07 U	7.95E-07 U
2,3,3',4-Tetrachlorobiphenyl (55)				1.54E-06 U	2.48E-05	6.19E-06 J	3.35E-06 J	2.94E-06 U	1.69E-06 U	1.23E-05 J	1.72E-03	4.10E-05 J	1.04E-06 U	1.24E-06 U	1.72E-06 U	1.15E-06 U	1.45E-06 U
2,3,3',4'-Tetrachlorobiphenyl (56)				1.34E-05 J	3.33E-04	1.75E-04	3.81E-05	3.83E-05	1.16E-05 J	3.12E-04	2.49E-02	8.49E-04	9.33E-06 J	1.56E-05 J	1.67E-05 J	5.66E-06 J	8.53E-06 J
2,3,3',5-Tetrachlorobiphenyl (57)				1.40E-06 U	2.54E-06 U	1.96E-06 U	1.87E-06 U	2.71E-06 U	1.55E-06 U	4.67E-06 U	3.15E-04	2.51E-05 J	9.97E-07 U	1.20E-06 U	1.62E-06 U	1.02E-06 U	1.29E-06 U
2,3,3',5'-Tetrachlorobiphenyl (58)				1.54E-06 U	3.93E-06 J	2.20E-06 U	2.12E-06 U	3.05E-06 U	1.74E-06 U	5.27E-06 U	1.90E-04 J	2.67E-05 J	1.11E-06 U	1.34E-06 U	1.82E-06 U	1.05E-06 U	1.35E-06 U
2,3,3',6-Tetrachlorobiphenyl (59) (62) (75)				3.11E-06 J	4.60E-05 J	2.62E-05 J	8.63E-06 J	1.26E-05 J	2.84E-06 U	4.86E-05 J	7.67E-03	8.63E-05 J	2.09E-06 J	4.26E-06 J	4.55E-06 J	2.07E-06 J	2.49E-06 J
2,3,4,4'-Tetrachlorobiphenyl (60)				7.18E-06 J	1.43E-04	9.09E-05	2.15E-05	1.90E-05 J	6.94E-06 J	1.53E-04	1.44E-02	2.71E-04	4.73E-06 J	9.07E-06 J	9.96E-06 J	2.92E-06 J	4.71E-06 J
2,3,4,5-Tetrachlorobiphenyl (61) (70) (74) (76)				4.34E-05 J	2.18E-03	5.73E-04	1.36E-04	1.39E-04	4.98E-05 J	1.06E-03	9.02E-02	6.36E-03	2.89E-05 J	5.67E-05 J	5.99E-05 J	1.86E-05 J	2.83E-05 J
2,3,4',5-Tetrachlorobiphenyl (63)				1.32E-06 U	2.11E-05	1.03E-05 J	3.46E-06 J	2.61E-06 U	1.49E-06 U	1.61E-05 J	2.07E-03	4.16E-05 J	9.58E-07 U	1.57E-06 J	1.56E-06 U	9.59E-07 U	1.21E-06 U
2,3,4',6-Tetrachlorobiphenyl (64)				1.29E-05 J	3.62E-04	1.61E-04	3.85E-05	5.15E-05	1.40E-05 J	2.70E-04	3.70E-02	1.08E-03	8.80E-06 J	1.94E-05	1.94E-05 J	5.77E-06 J	9.72E-06 J
2,3',4,4'-Tetrachlorobiphenyl (66)				1.83E-05 J	6.23E-04	2.83E-04	6.22E-05	6.56E-05	1.98E-05	5.34E-04	4.45E-02	1.85E-03	1.30E-05 J	2.64E-05	2.76E-05	7.81E-06 J	1.20E-05 J
2,3',4,5-Tetrachlorobiphenyl (67)				1.27E-06 U	2.06E-05	1.05E-05 J	3.13E-06 J	3.05E-06 J	1.38E-06 U	1.51E-05 J	2.14E-03	6.91E-05 J	8.99E-07 U	1.36E-06 J	1.46E-06 U	9.21E-07 U	1.17E-06 U
2,3',4,5'-Tetrachlorobiphenyl (68)				1.36E-06 U	4.62E-06 J	1.92E-06 U	1.83E-06 U	2.65E-06 U	1.51E-06 U	4.57E-06 U	1.66E-04 J	2.17E-05 U	9.78E-07 U	1.18E-06 U	1.60E-06 U	1.02E-06 U	1.29E-06 U
2,3',5,5'-Tetrachlorobiphenyl (72)				1.32E-06 U	4.89E-06 J	1.88E-06 U	1.79E-06 U	2.59E-06 U	1.49E-06 U	4.47E-06 U	2.94E-04	2.09E-05 U	9.58E-07 U	1.16E-06 U	1.56E-06 U	9.59E-07 U	1.23E-06 U
2,3',5',6-Tetrachlorobiphenyl (73)				1.23E-06 U	2.78E-05	5.96E-06 J	1.71E-06 J	3.09E-06 U	3.14E-06 U	1.57E-05 J	1.40E-03	5.84E-05 J	1.13E-06 U	1.12E-06 U	3.77E-06 U	1.46E-06 U	1.09E-06 U
3,3',4,4'-Tetrachlorobiphenyl (77)				5.60E-06 J	1.32E-04	7.57E-05	1.88E-05 J	2.93E-05	3.72E-06 J	1.15E-04	5.39E-03	1.15E-03	3.60E-06 J	5.50E-06 J	4.86E-06 J	2.61E-06 J	2.45E-06 J
3,3',4,5-Tetrachlorobiphenyl (78)				1.44E-06 U	2.62E-06 U	2.08E-06 U	1.87E-06 U	2.71E-06 U	1.55E-06 U	4.65E-06 U	5.71E-05 U	2.28E-05 U	9.78E-07 U	1.18E-06 U	1.60E-06 U	1.02E-06 U	1.29E-06 U
3,3',4,5'-Tetrachlorobiphenyl (79)				1.29E-06 U	3.55E-05	8.35E-06 J	1.65E-06 U	2.40E-06 U	1.38E-06 U	1.88E-05 J	1.01E-03	2.01E-04	8.99E-07 U	1.07E-06 U	1.46E-06 U	8.82E-07 U	1.11E-06 U
3,3',5,5'-Tetrachlorobiphenyl (80)				1.29E-06 U	2.33E-06 U	1.86E-06 U	1.75E-06 U	2.51E-06 U	1.44E-06 U	4.34E-06 U	5.10E-05 U	2.04E-05 U	9.19E-07 U	1.10E-06 U	1.48E-06 U	8.82E-07 U	1.11E-06 U
3,4,4',5-Tetrachlorobiphenyl (81)				1.52E-06 U	5.86E-06 J	3.46E-06 J	2.06E-06 U	3.09E-06 U	1.69E-06 U	4.80E-06 U	2.54E-04	5.41E-05 J	1.13E-06 U	1.39E-06 U	1.82E-06 U	1.21E-06 U	1.53E-06 U
2,2',3,3',4-Pentachlorobiphenyl (82)				5.76E-06 J	4.89E-04	1.06E-04	2.15E-05	2.56E-05	7.68E-06 J	2.18E-04	6.76E-03	3.79E-03	3.13E-06 J	6.30E-06 J	5.68E-06 J	1.98E-06 U	3.12E-06 J

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 11/22/2016	B18-D-CB3 11/22/2016	B18-F-1 11/22/2016	B18-F-2 11/22/2016	B18-F-3 11/22/2016	B18-F-4 11/22/2016	B18-F-5 11/22/2016	B18-F-6 11/22/2016	B18-F-7 11/22/2016	B18-F-R1 11/22/2016	B18-F-R2 11/22/2016	B18-F-R3 11/22/2016	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016
2,2',3,3',5-Pentachlorobiphenyl (83)				2.57E-06 J	2.00E-04	3.18E-05	7.25E-06 J	1.18E-05 J	4.18E-06 J	9.20E-05	2.10E-03	1.26E-03	1.53E-06 U	2.85E-06 J	3.59E-06 J	1.92E-06 U	2.27E-06 U
2,2',3,3',6-Pentachlorobiphenyl (84)				1.19E-05 J	1.23E-03	1.61E-04	3.69E-05	4.30E-05	1.85E-05 J	4.49E-04	1.34E-02	6.69E-03	5.94E-06 J	1.17E-05 J	9.49E-06 J	3.18E-06 J	5.23E-06 J
2,2',3,4,4'-Pentachlorobiphenyl (85) (116) (117)				7.39E-06 J	6.40E-04	1.20E-04	2.89E-05 J	3.09E-05 J	9.37E-06 J	2.58E-04	8.30E-03	5.59E-03	3.30E-06 J	6.45E-06 J	6.83E-06 J	2.44E-06 J	3.30E-06 J
2,2',3,4,5-Pentachlorobiphenyl (86)(87)(97)(109)(119)(125)				3.36E-05 J	3.56E-03	5.37E-04	1.24E-04	1.34E-04	4.50E-05 J	1.21E-03	3.50E-02	2.37E-02	1.49E-05 J	3.01E-05 J	2.90E-05 J	1.08E-05 J	1.39E-05 J
2,2',3,4,6-Pentachlorobiphenyl (88) (91)				5.43E-06 J	5.07E-04	7.28E-05	1.79E-05 J	2.24E-05 J	8.51E-06 J	1.93E-04	6.98E-03	3.22E-03	2.46E-06 J	6.20E-06 J	4.94E-06 J	1.88E-06 U	3.92E-06 J
2,2',3,4,6'-Pentachlorobiphenyl (89)				1.59E-06 U	3.25E-05	7.12E-06 J	3.25E-06 U	3.55E-06 U	1.67E-06 U	1.67E-05 J	7.88E-04	1.55E-04 J	1.31E-06 U	1.59E-06 U	1.68E-06 U	1.86E-06 U	2.21E-06 U
2,2',3,4',5-Pentachlorobiphenyl (90) (101) (113)				3.64E-05 J	4.60E-03	6.32E-04	1.54E-04	1.85E-04	6.37E-05	1.50E-03	4.11E-02	3.33E-02	1.64E-05 J	3.51E-05 J	3.26E-05 J	1.22E-05 J	1.70E-05 J
2,2',3,5,5'-Pentachlorobiphenyl (92)				6.81E-06 J	8.00E-04	1.03E-04	2.47E-05	2.56E-05	1.12E-05 J	2.75E-04	6.96E-03	5.25E-03	2.97E-06 J	6.00E-06 J	5.33E-06 J	1.78E-06 U	3.08E-06 J
2,2',3,5,6-Pentachlorobiphenyl (93) (100)				1.63E-06 U	1.42E-05 J	2.61E-06 U	3.25E-06 U	3.55E-06 U	1.67E-06 U	3.48E-06 U	4.57E-04	2.07E-05 U	1.29E-06 U	1.59E-06 U	1.66E-06 U	1.84E-06 U	2.19E-06 U
2,2',3,5,6'-Pentachlorobiphenyl (94)				1.67E-06 U	1.42E-05 J	2.79E-06 U	3.40E-06 U	3.74E-06 U	1.74E-06 U	5.19E-06 J	3.67E-04	7.61E-05 J	1.41E-06 U	1.72E-06 U	1.82E-06 U	2.09E-06 U	2.49E-06 U
2,2',3,5',6-Pentachlorobiphenyl (95)				2.94E-05	3.24E-03	3.92E-04	9.38E-05	1.15E-04	5.29E-05	1.16E-03	3.43E-02	1.93E-02	1.43E-05 J	3.30E-05	2.80E-05	8.80E-06 J	1.46E-05 J
2,2',3,6,6'-Pentachlorobiphenyl (96)				8.83E-07 U	1.76E-05 J	3.54E-06 J	1.58E-06 J	1.55E-06 U	7.86E-07 U	7.93E-06 J	5.79E-04	8.96E-05 J	7.23E-07 U	7.36E-07 U	8.98E-07 U	4.60E-07 U	5.77E-07 U
2,2',3',4,6-Pentachlorobiphenyl (98) (102)				1.52E-06 U	8.67E-05	1.24E-05 J	3.21E-06 U	4.22E-06 J	1.65E-06 U	3.00E-05 J	2.07E-03	4.17E-04	1.33E-06 U	1.61E-06 U	1.70E-06 U	2.11E-06 U	2.51E-06 U
2,2',4,4',5-Pentachlorobiphenyl (99)				1.65E-05 J	2.11E-03	2.88E-04	6.40E-05	6.81E-05	2.40E-05	6.37E-04	2.18E-02	1.47E-02	6.30E-06 J	1.49E-05 J	1.51E-05 J	4.68E-06 J	6.38E-06 J
2,2',4,5',6-Pentachlorobiphenyl (103)				1.36E-06 U	1.41E-05 J	2.37E-06 J	2.81E-06 U	3.07E-06 U	1.44E-06 U	4.41E-06 J	2.42E-04	8.19E-05 J	1.13E-06 U	1.39E-06 U	1.46E-06 U	1.65E-06 U	1.97E-06 U
2,2',4,6,6'-Pentachlorobiphenyl (104)				9.98E-07 U	1.35E-06 U	7.48E-07 U	9.23E-07 U	1.44E-06 U	7.66E-07 U	1.31E-06 U	1.89E-05 U	1.62E-05 U	8.21E-07 U	8.14E-07 U	1.05E-06 U	5.18E-07 U	6.16E-07 U
2,3,3',4,4'-Pentachlorobiphenyl (105)				2.18E-05	2.14E-03	4.38E-04	9.59E-05	1.14E-04	2.56E-05	7.08E-04	2.26E-02	1.49E-02	1.07E-05 J	2.24E-05	2.02E-05	8.09E-06 J	1.02E-05 J
2,3,3',4,5-Pentachlorobiphenyl (106)				1.32E-06 U	4.55E-06 U	3.03E-06 U	2.35E-06 U	2.90E-06 U	1.55E-06 U	4.02E-06 U	4.42E-05 U	2.83E-05 U	1.09E-06 U	1.03E-06 U	1.37E-06 U	1.13E-06 U	1.13E-06 U
2,3,3',4',5-Pentachlorobiphenyl (107)				2.36E-06 J	3.14E-04	6.28E-05	1.25E-05 J	1.48E-05 J	3.77E-06 J	1.04E-04	2.84E-03	2.27E-03	1.23E-06 J	2.07E-06 J	2.32E-06 J	9.01E-07 U	1.01E-06 J
2,3,3',4,5'-Pentachlorobiphenyl (108)(124)				2.28E-06 J	2.05E-04	3.65E-05 J	8.65E-06 J	9.08E-06 J	2.34E-06 J	6.31E-05	1.76E-03	1.55E-03	1.11E-06 U	2.07E-06 J	1.46E-06 J	1.11E-06 U	1.19E-06 U
2,3,3',4',6-Pentachlorobiphenyl (110)(115)				5.80E-05	6.07E-03	1.12E-03	2.46E-04	2.94E-04	8.32E-05	2.55E-03	5.66E-02	5.30E-02	2.52E-05 J	5.57E-05	4.75E-05	1.90E-05 J	3.04E-05 J
2,3,3',5,5'-Pentachlorobiphenyl (111)				1.21E-06 U	3.41E-06 U	2.00E-06 U	2.37E-06 U	2.59E-06 U	1.21E-06 U	2.54E-06 U	3.13E-05 U	1.53E-05 U	9.78E-07 U	1.20E-06 U	1.25E-06 U	1.40E-06 U	1.67E-06 U
2,3,3',5,6-Pentachlorobiphenyl (112)				1.04E-06 U	2.93E-06 U	1.76E-06 U	2.13E-06 U	2.32E-06 U	1.09E-06 U	2.28E-06 U	2.69E-05 U	1.31E-05 U	8.41E-07 U	1.03E-06 U	1.09E-06 U	1.44E-06 U	1.71E-06 U
2,3,4,4',5-Pentachlorobiphenyl (114)				1.57E-06 U	9.54E-05	1.82E-05 J	4.94E-06 J	4.86E-06 J	1.95E-06 U	3.33E-05	1.18E-03	4.24E-04	1.31E-06 U	1.24E-06 U	1.62E-06 U	1.38E-06 U	1.39E-06 U
2,3',4,4',5-Pentachlorobiphenyl (118)				3.92E-05	4.79E-03	8.73E-04	1.99E-04	2.31E-04	5.47E-05	1.45E-03	4.47E-02	3.76E-02	1.90E-05 J	4.16E-05	3.68E-05	1.85E-05 J	1.83E-05 J
2,3',4,5,5'-Pentachlorobiphenyl (120)				1.07E-06 U	4.05E-06 J	2.02E-06 J	2.04E-06 U	2.23E-06 U	1.03E-06 U	3.53E-06 J	2.78E-05 U	8.24E-05 J	8.80E-07 U	1.08E-06 U	1.13E-06 U	1.25E-06 U	1.49E-06 U
2,3',4,5',6-Pentachlorobiphenyl (121)				1.21E-06 U	3.41E-06 U	2.00E-06 U	2.46E-06 U	2.69E-06 U	1.26E-06 U	2.64E-06 U	3.14E-05 U	1.53E-05 U	9.78E-07 U	1.20E-06 U	1.27E-06 U	1.46E-06 U	1.73E-06 U
2',3,3',4,5-Pentachlorobiphenyl (122)				1.46E-06 U	4.09E-05	1.01E-05 J	2.75E-06 U	3.40E-06 U	1.82E-06 U	2.34E-05	5.07E-04	3.48E-04	1.17E-06 U	1.08E-06 U	1.44E-06 U	1.11E-06 U	1.11E-06 U
2',3,4,4',5-Pentachlorobiphenyl (123)				1.52E-06 U	7.30E-05	1.04E-05 J	4.54E-06 J	4.07E-06 J	1.92E-06 U	2.47E-05	6.71E-04	5.22E-04	1.27E-06 U	1.20E-06 U	1.58E-06 U	1.29E-06 U	1.31E-06 U
3,3',4,4',5-Pentachlorobiphenyl (126)				1.92E-06 U	2.68E-05	9.16E-06 J	4.77E-06 J	7.87E-06 J	2.30E-06 U	1.61E-05 J	1.74E-04 J	6.08E-04	1.54E-06 U	1.43E-06 U	1.95E-06 U	1.67E-06 U	1.69E-06 U
3,3',4,5,5'-Pentachlorobiphenyl (127)				1.36E-06 U	7.76E-06 J	3.34E-06 U	2.62E-06 U	3.24E-06 U	1.74E-06 U	5.21E-06 J	5.77E-05 U	7.49E-05 J	1.08E-06 U	1.01E-06 U	1.35E-06 U	1.11E-06 U	1.11E-06 U
2,2',3,3',4,4'-Hexachlorobiphenyl (128)(166)				9.36E-06 J	1.12E-03	2.36E-04	5.47E-05	7.42E-05	1.15E-05 J	4.22E-04	7.70E-03	1.17E-02	5.26E-06 J	9.53E-06 J	9.14E-06 J	2.76E-06 J	5.47E-06 J
2,2',3,3',4,5-Hexachlorobiphenyl (129)(138)(163)				5.57E-05 J	6.58E-03	1.59E-03	3.88E-04	7.16E-04	7.80E-05	2.69E-03	4.78E-02	8.82E-02	2.78E-05 J	5.52E-05 J	5.05E-05 J	2.56E-05 J	3.09E-05 J
2,2',3,3',4,5'-Hexachlorobiphenyl (130)				3.80E-06 J	3.96E-04	8.21E-05	2.08E-05	2.98E-05	4.66E-06 J	1.57E-04	2.71E-03	4.38E-03	1.74E-06 J	3.25E-06 J	3.18E-06 J	1.92E-06 U	1.99E-06 J
2,2',3,3',4,6-Hexachlorobiphenyl (131)				2.42E-06 U	1.00E-04	1.60E-05 J	3.85E-06 J	3.19E-06 U	2.32E-06 U	3.35E-05	7.28E-04	8.41E-04	1.80E-06 U	3.10E-06 U	2.01E-06 U	2.17E-06 U	1.95E-06 U
2,2',3,3',4,6'-Hexachlorobiphenyl (132)				2.07E-05	2.18E-03	4.43E-04	1.06E-04	1.60E-04	2.46E-05	8.14E-04	1.51E-02	2.54E-02	9.89E-06 J	1.94E-05	1.72E-05 J	7.25E-06 U	9.98E-06 J
2,2',3,3',5,5'-Hexachlorobiphenyl (133)				2.05E-06 U	6.03E-05	1.39E-05 J	3.88E-06 J	5.62E-06 J	2.05E-06 U	2.51E-05	4.41E-04	7.50E-04	1.49E-06 U	2.56E-06 U	1.66E-06 U	1.76E-06 U	1.59E-06 U
2,2',3,3',5,6-Hexachlorobiphenyl (134)				3.90E-06 J	3.55E-04	5.99E-05	1.67E-05 J	1.88E-05 J	3.70E-06 J	1.39E-04	2.57E-03	3.76E-03	1.94E-06 U	3.33E-06 U	2.17E-06 U	2.30E-06 U	2.07E-06 U
2,2',3,3',5,6'-Hexachlorobiphenyl (135)(151)				1.24E-05 J	1.22E-03	2.75E-04	7.50E-05	2.09E-04	2.23E-05 J	5.32E-04	9.36E-03	1.79E-02	6.37E-06 J	1.21E-05 J	1.06E-05 J	7.63E-06 J	8.13E-06 J
2,2',3,3',6,6'-Hexachlorobiphenyl (136)				5.58E-06 J	5.25E-04	8.60E-05	2.33E-05	4.76E-05	8.78E-06 J	1.93E-04	3.91E-03	6.10E-03	2.42E-06 J	4.96E-06 J	3.90E-06 J	2.17E-06 J	3.20E-06 J
2,2',3,4,4',5-Hexachlorobiphenyl (137)				3.30E-06 J	3.59E-04	6.06E-05	1.09E-05 J	1.65E-05 J	4.54E-06 J	1.19E-04	2.59E-03	3.18E-03	1.74E-06 U	3.39E-06 J	2.34E-06 J	1.75E-06 U	2.03E-06 J
2,2',3,4,4',6-Hexachlorobiphenyl (139)(140)				1.98E-06 U	1.06E-04	1.82E-05 J	4.52E-06 J	4.87E-06 J	1.94E-06 U	3.61E-05 J	7.33E-04	1.01E-03	1.47E-06 U	2.52E-06 U	1.64E-06 U	1.67E-06 U	1.51E-06 U
2,2',3,4,5,5'-Hexachlorobiphenyl (141)				7.83E-06 J	9.66E-04	2.28E-04	6.13E-05	1.47E-04	1.13E-05 J	3.87E-04	7.09E-03	1.47E-02	4.28E-06 J	8.83E-06 J	7.65E-06 J	5.35E-06 J	4.79E-06 J
2,2',3,4,5,6-Hexachlorobiphenyl (142)				2.15E-06 U	4.10E-06 U	3.23E-06 U	2.60E-06 U	2.90E-06 U	2.11E-06 U	2.91E-06 U	3.40E-05 U	4.09E-05 U	1.66E-06 U	2.87E-06 U	1.87E-06 U	1.99E-06 U	1.79E-06 U
2,2',3,4,5,6'-Hexachlorobiphenyl (143)				1.86E-06 U	1.33E-05 J	3.21E-06 J	2.37E-06 U	2.63E-06 U	1.92E-06 U	1.45E-05 J	7.83E-05 J	1.09E-04 J	1.39E-06 U	2.38E-06 U	1.56E-06 U	1.86E-06 U	1.67E-06 U
2,2',3,4,5',6-Hexachlorobiphenyl (144)				2.01E-06 J	1.90E-04	4.23E-05	1.10E-05 J	2.59E-05	3.56E-06 J	7.79E-05	1.49E-03	2.68E-03	1.37E-06 J	2.62E-06 J	1.97E-06 J	1.09E-06 U	1.33E-06 J
2,2',3,4,6,6'-Hexachlorobiphenyl (145)				8.25E-07 U	1.54E-06 J	9.70E-07 U	1.08E-06 U	1.23E-06 U	9.58E-07 U	1.52E-06 U	1.92E-05 J	1.14E-05 U	7.04E-07 U	7.94E-07 U	1.02E-06 U	8.44E-07 U	8.55E-07 U
2,2',3,4',5,5'-Hexachlorobiphenyl (146)				4.66E-06 J	5.75E-04	1.43E-04	3.90E-05	7.34E-05	8.93E-06 J	2.69E-04	4.02E-03	8.03E-03	2.76E-06 J	5.60E-06 J	4.51E-06 J	2.59E-06 U	3.24E-06 J
2,2',3,4',5,6-Hexachlorobiphenyl (147)(149)				3.25E-05 J	3.54E-03	7.94E-04	1.96E-04	4.45E-04	4.88E-05	1.39E-03	2.69E-02	4.76E-02	1.49E-05 J	3.16E-05 J	2.75E-05 J	1.61E-05 J	1.88E-05 J
2,2',3,4',5,6'-Hexachlorobiphenyl (148)				9.40E-07 U	3.03E-06 J	1.11E-06 U	1.25E-06 U	1.44E-06 U	1.13E-06 U	1.78E-06 U	2.52E-05 J	4.95E-05 J	8.21E-07 U	9.49E-07 U	1.19E-06 U	9.78E-07 U	9.74E-07 U
2,2',3,4',6,6'-Hexachlorobiphenyl (150)				7.87E-07 U	4.45E-06 J	1.31E-06 J	1.02E-06 U	1.17E-06 U	9.01E-07 U	2.66E-06 J	3.83E-05 J	8.69E-05 J	6.65E-07 U	7.36E-07 U	9.57E-07 U	8.25E-07 U	8.35E-07 U
2,2',3,5,6,6'-Hexachlorobiphenyl (152)				7.29E-07 U	4.41E-06 J	8.29E-07 U	9.42E-07 U	1.07E-06 U	8.24E-07 U	1.50E-06 J	3.32E-05 J	3.54E-05 J	6.06E-07 U	6.78E-07 U	8.78E-07 U	7.48E-07 U	7.56E-07 U
2,2',4,4',5,5'-Hexachlorobiphenyl (153)(168)				3.17E-05 J	3.91E-03	9.78E-04	2.58E-04	6.68E-04	4.88E-05	1.53E-03	2.94E-02	6.07E-02	1.59E-05 J	3.21E-05 J	3.04E-05 J	2.75E-05 J	1.92E-05 J
2,2',4,4',5,6'-Hexachlorobiphenyl (154)				8.64E-07 U	3.22E-05	8.61E-06 J	3.37E-06 J	4.84E-06 J	9.58E-07 U	1.39E-05 J	2.19E-04	5.27E-04	7.43E-07 U	8.33E-07 U	1.07E-06 U	8.44E-07 U	8.55E-07 U
2,2',4,4',6,6'-Hexachlorobiphenyl (155)				7.10E-07 U	9.83E-07 U	7.89E-07 U	8.27E-07 U	9.79E-07 U	7.47E-07 U	1.23E-06 U	1.22E-05 U	9.49E-06 U	6.26E-07 U	7.17E-07 U	8.98E-07 U	8.06E-07 U	7.76E-07 U
2,3,3',4,4',5-Hexachlorobiphenyl (156)*157)				8.02E-06 J	1.01E-03	2.01E-04	5.07E-05	6.57E-05	1.16E-05 J	3.23E-04	6.97E-03	1.01E-02	4.15E-06 J	8.58E-06 J	7.13E-06 J	3.41E-06 J	4.79E-06 J
2,3,3',4,4',6-Hexachlorobiphenyl (158)				5.95E-06 J	6.65E-04	1.45E-04	3.62E-05	5.95E-05	7.26E-06 J	2.54E-04	4.76E-03	8.41E-03	2.15E-06 J	5.56E-06 J	4.86E-06 J	2.55E-06 J	3.00E-06 J
2,3,3',4,5,5'-Hexachlorobiphenyl (159)				8.64E-07 U	2.91E-06 U	1.76E-06 U	1.65E-06 U	3.34E-06 U	1.19E-06 U	2.81E-06 U	3.30E-05 U	2.98E-05 U	9.19E-07 U	1.14E-06 U	1.02E-06 U	8.82E-07 U	8.55E-07 U
2,3,3',4,5,6-Hexachlorobiphenyl (160)				1.77E-06 U	3.35E-06 U	2.49E-06 U	2.08E-06 U	2.30E-06 U	1.69E-06 U	2.32E-06 U	2.79E-05 U	3.35E-05 U	1.25E-06 U	2.17E-06 U	1.41E-06 U	1.65E-06 U	1.47E-06 U
2,3,3',4',5,6-Hexachlorobiphenyl (161)				1.44E-06 U	2.76E-06 U	2.08E-06 U	1.79E-06 U	2.02E-06 U	1.46E-06 U	2.01E-06 U	2.29E-05 U	2.75E-05 U	1.08E-06 U	1.84E-06 U	1.19E-06 U	1.38E-06 U	1.25E-06 U
2,3,3',4',5,5'-Hexachlorobiphenyl (162)				9.21E-07 U	1.38E-05 J	5.46E-06 J	1.88E-06 J	3.86E-06 J	1.26E-06 U	5.31E-06 J	1.29E-04 J	2.77E-04	9.78E-07 U	1.24E-06 U	1.09E-06 U	9.40E-07 U	9.15E-07 U
2,3,3',4',5',6-Hexachlorobiphenyl (164)				3.49E-06 J	3.93E-04	1.01E-04	2.70E-05	4.38E-05	5.17E-06 J	1.71E-04	2.77E-03	5.39E-03	1.35E-06 J	3.60E-06 J	2.91E-06 J	1.46E-06 J	2.49E-06 J
2,3,3',5,5',6-Hexachlorobiphenyl (165)				1.78E-06 U	3.39E-06 U	2.73E-06 U	2.19E-06 U	2.46E-06 U	1.78E-06 U	2.46E-06 U	2.82E-05 U	3.39E-05 U	1.27E-06 U	2.19E-06 U	1.43E-06 U	1.50E-06 U	1.35E-06 U
2,3',4,4',5,5'-Hexachlorobiphenyl (167)				2.71E-06 J	2.92E-04	6.87E-05	1.79E-05 J	2.47E-05	3.51E-06 J	1.11E-04	2.01E-03	3.78E-03	1.45E-06 J	2.73E-06 J	2.13E-06 J	1.25E-06 J	1.71E-06 J
3,3',4,4',5,5'-Hexachlorobiphenyl (169)				1.11E-06 U	3.76E-06 U	2.41E-06 U	2.25E-06 U	4.53E-06 U	1.53E-06 U	3.69E-06 U	4.46E-05 U	5.10E-05 J	1.25E-06 U	1.53E-06 U	1.41E-06 U	1.21E-06 U	1.23E-06 U
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)				9.21E-06 J	9.46E-04	3.73E-04	1.04E-04	3.17E-04	1.32E-05 J	4.35E-04	7.44E-03	2.27E-02	5.46E-06 J	9.61E-06 J	1.07E-05 J	1.59E-05 J	7.02E-06 J

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 11/22/2016	B18-D-CB3 11/22/2016	B18-F-1 11/22/2016	B18-F-2 11/22/2016	B18-F-3 11/22/2016	B18-F-4 11/22/2016	B18-F-5 11/22/2016	B18-F-6 11/22/2016	B18-F-7 11/22/2016	B18-F-R1 11/22/2016	B18-F-R2 11/22/2016	B18-F-R3 11/22/2016	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)(173)				3.09E-06 J	2.70E-04	1.03E-04	2.90E-05 J	8.80E-05	3.62E-06 J	1.27E-04	2.20E-03	6.37E-03	2.03E-06 J	2.77E-06 J	2.87E-06 J	4.37E-06 J	2.62E-06 J
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)				2.13E-06 J	1.51E-04	6.86E-05	1.91E-05 J	6.52E-05	2.49E-06 J	7.81E-05	1.26E-03	3.73E-03	1.15E-06 U	2.07E-06 J	1.64E-06 J	3.07E-06 J	1.81E-06 J
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)				7.96E-06 J	7.83E-04	3.56E-04	9.25E-05	4.45E-04	1.28E-05 J	4.12E-04	6.85E-03	1.89E-02	4.93E-06 J	8.68E-06 J	1.04E-05 J	2.25E-05	7.22E-06 J
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)				9.02E-07 U	3.47E-05	1.52E-05 J	4.02E-06 J	1.56E-05 J	1.03E-06 U	1.86E-05 J	2.81E-04	7.96E-04	1.02E-06 U	9.88E-07 U	1.21E-06 U	5.56E-07 U	9.54E-07 U
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)				1.25E-06 J	8.26E-05	3.21E-05	9.27E-06 J	4.29E-05	1.51E-06 J	4.39E-05	7.58E-04	1.94E-03	7.63E-07 U	1.03E-06 J	1.19E-06 J	1.94E-06 J	8.15E-07 J
2,2',3,3',4',5,6-Heptachlorobiphenyl (177)				5.22E-06 J	4.52E-04	1.92E-04	5.25E-05	2.13E-04	7.28E-06 J	2.30E-04	3.78E-03	1.14E-02	2.66E-06 J	5.17E-06 J	6.01E-06 J	9.86E-06 J	4.04E-06 J
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)				1.77E-06 J	1.29E-04	6.19E-05	1.59E-05 J	8.22E-05	3.18E-06 U	7.17E-05	1.18E-03	3.16E-03	1.08E-06 J	1.84E-06 J	1.91E-06 J	4.24E-06 J	1.73E-06 J
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)				2.71E-06 J	2.39E-04	1.05E-04	2.73E-05	1.51E-04	4.79E-06 J	1.29E-04	2.38E-03	5.91E-03	1.56E-06 J	3.12E-06 J	3.53E-06 J	6.14E-06 J	2.72E-06 J
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)(193)				1.76E-05 J	1.87E-03	8.94E-04	2.32E-04	1.08E-03	2.85E-05 J	9.75E-04	1.63E-02	4.78E-02	1.02E-05 J	1.91E-05 J	2.31E-05 J	7.34E-05	1.61E-05 J
2,2',3,4,4',5,6-Heptachlorobiphenyl (181)				1.07E-06 U	1.49E-05 J	3.30E-06 J	1.73E-06 U	3.44E-06 U	1.84E-06 U	6.19E-06 J	9.66E-05 J	1.63E-04 J	1.13E-06 U	1.07E-06 U	1.44E-06 U	1.67E-06 U	1.33E-06 U
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)				9.02E-07 U	6.03E-06 J	4.59E-06 J	1.52E-06 U	2.02E-06 U	1.05E-06 U	2.38E-06 J	4.11E-05 J	1.48E-04 J	1.08E-06 U	1.05E-06 U	1.29E-06 U	5.56E-07 U	9.54E-07 U
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)(185)				5.20E-06 J	5.42E-04	2.38E-04	6.14E-05	3.08E-04	9.14E-06 J	2.78E-04	4.87E-03	1.33E-02	2.80E-06 J	6.04E-06 J	6.97E-06 J	1.69E-05 J	5.23E-06 J
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)				6.91E-07 U	1.43E-06 J	1.15E-06 U	1.17E-06 U	1.55E-06 U	8.05E-07 U	1.37E-06 U	1.76E-05 U	3.37E-05 J	7.82E-07 U	7.75E-07 U	9.37E-07 U	4.41E-07 U	7.56E-07 U
2,2',3,4,5,6,6'-Heptachlorobiphenyl (186)				7.68E-07 U	1.37E-06 U	1.27E-06 U	1.29E-06 U	1.69E-06 U	8.81E-07 U	1.48E-06 U	1.97E-05 U	1.59E-05 U	8.41E-07 U	8.33E-07 U	1.02E-06 U	4.79E-07 U	8.15E-07 U
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)				9.48E-06 J	8.68E-04	4.19E-04	1.05E-04	6.29E-04	2.35E-05	4.95E-04	7.91E-03	2.11E-02	6.45E-06 J	1.05E-05 J	1.21E-05 J	3.46E-05	8.73E-06 J
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)				7.10E-07 U	2.64E-06 J	1.86E-06 J	1.15E-06 U	1.57E-06 U	8.43E-07 U	1.84E-06 J	2.79E-05 J	6.49E-05 J	8.21E-07 U	8.33E-07 U	9.76E-07 U	4.99E-07 U	8.55E-07 U
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)				9.79E-07 U	4.43E-05	1.83E-05 J	5.92E-06 J	1.06E-05 U	1.34E-06 U	2.06E-05	3.46E-04	9.15E-04	1.15E-06 U	1.05E-06 U	1.41E-06 U	9.97E-07 U	8.35E-07 U
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)				1.78E-06 J	1.77E-04	7.47E-05	2.12E-05	7.48E-05	2.70E-06 U	8.68E-05	1.43E-03	4.48E-03	1.37E-06 J	1.90E-06 J	2.64E-06 J	5.45E-06 J	1.41E-06 J
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)				8.06E-07 U	3.49E-05	1.40E-05 J	3.87E-06 J	1.18E-05 J	1.38E-06 U	1.63E-05 J	2.85E-04	8.51E-04	8.99E-07 U	8.52E-07 U	1.13E-06 U	1.29E-06 U	1.03E-06 U
2,3,3',4,5,5',6-Heptachlorobiphenyl (192)				9.21E-07 U	2.04E-06 U	2.33E-06 U	1.50E-06 U	2.96E-06 U	1.59E-06 U	2.19E-06 U	3.05E-05 U	2.13E-05 U	1.02E-06 U	9.49E-07 U	1.29E-06 U	1.50E-06 U	1.21E-06 U
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)				4.70E-06 J	3.34E-04	2.06E-04	5.06E-05	3.22E-04	5.92E-06 J	1.87E-04	3.59E-03	7.96E-03	2.85E-06 J	4.98E-06 J	8.43E-06 J	4.94E-05	4.71E-06 J
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)				1.82E-06 J	1.22E-04	6.92E-05	1.82E-05 J	1.16E-04	1.71E-06 J	6.63E-05	1.16E-03	3.11E-03	1.43E-06 U	1.49E-06 J	3.65E-06 J	1.33E-05 J	1.65E-06 J
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)				2.05E-06 J	1.70E-04	1.02E-04	2.59E-05	1.70E-04	2.82E-06 J	1.02E-04	1.83E-03	3.97E-03	1.64E-06 J	2.52E-06 J	4.12E-06 J	2.37E-05	2.09E-06 J
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)(200)				9.02E-07 J	5.44E-05	3.23E-05 J	7.88E-06 J	6.06E-05	1.40E-06 J	3.12E-05 J	6.01E-04	1.10E-03	9.39E-07 U	8.72E-07 U	1.37E-06 U	7.08E-06 J	1.13E-06 J
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)(199)				5.47E-06 J	4.14E-04	2.44E-04	5.55E-05	4.22E-04	7.68E-06 J	2.43E-04	4.77E-03	7.79E-03	3.83E-06 J	6.22E-06 J	9.59E-06 J	5.61E-05	4.79E-06 J
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)				9.21E-07 J	4.33E-05	2.55E-05	6.58E-06 J	4.50E-05	9.77E-07 U	2.54E-05	5.97E-04	7.95E-04	8.80E-07 U	8.14E-07 U	1.05E-06 U	4.97E-06 J	7.95E-07 J
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)				1.04E-06 J	6.97E-05	4.02E-05	9.15E-06 J	6.85E-05	1.46E-06 J	4.05E-05	9.01E-04	1.10E-03	1.02E-06 U	1.47E-06 J	1.80E-06 J	8.00E-06 J	1.67E-06 J
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)				3.72E-06 J	2.60E-04	1.53E-04	3.62E-05	2.62E-04	4.79E-06 J	1.52E-04	3.06E-03	4.99E-03	2.48E-06 J	3.78E-06 J	6.75E-06 J	4.21E-05	3.52E-06 J
2,2',3,4,4',5,6,6'-Octachlorobiphenyl (204)				6.52E-07 U	1.02E-06 U	8.29E-07 U	1.56E-06 U	1.48E-06 U	9.77E-07 U	1.78E-06 U	2.40E-05 U	1.42E-05 U	9.19E-07 U	8.52E-07 U	9.37E-07 U	1.34E-06 U	7.76E-07 U
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)				8.64E-07 U	1.61E-05 J	9.79E-06 J	3.13E-06 J	1.50E-05 J	1.34E-06 U	9.59E-06 J	1.63E-04 J	4.10E-04	1.15E-06 U	1.05E-06 U	1.46E-06 U	3.01E-06 J	8.35E-07 U
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)				2.88E-06 J	2.00E-04	1.14E-04	2.29E-05	1.34E-04	2.76E-06 J	1.16E-04	2.98E-03	1.84E-03	3.01E-06 J	4.42E-06 J	7.16E-06 J	4.62E-05	3.50E-06 J
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)				6.52E-07 U	2.49E-05	1.65E-05 J	3.44E-06 J	1.92E-05 J	1.17E-06 U	1.50E-05 J	3.33E-04	2.92E-04	1.25E-06 U	1.10E-06 U	1.44E-06 U	4.72E-06 J	9.54E-07 U
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)				1.04E-06 J	5.26E-05	2.98E-05	6.08E-06 J	2.73E-05	1.26E-06 U	3.18E-05	8.08E-04	3.74E-04	1.35E-06 U	1.38E-06 J	1.91E-06 U	8.17E-06 J	1.49E-06 J
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (209)				2.19E-06 J	5.56E-05	3.06E-05	7.69E-06 J	9.27E-06 J	1.82E-06 J	4.58E-05	7.65E-04	2.75E-04	1.97E-06 U	1.92E-06 J	3.05E-06 J	4.83E-06 J	2.31E-06 J
PCB Homologs (ug/l)																	
Monochlorobiphenyl				5.18E-06 J	6.32E-05	2.27E-05	0.00E+00	0.00E+00	0.00E+00	0.00E+00	2.99E-03	0.00E+00	0.00E+00	1.29E-05 J	8.36E-06 J	8.80E-06 J	8.67E-06 J
Dichlorobiphenyl				2.26E-05	1.23E-03	5.92E-04	2.01E-04	9.90E-05	5.92E-05	2.57E-04	9.66E-02	9.08E-04	1.07E-04	1.90E-04	1.43E-04	7.36E-05	9.60E-05
Trichlorobiphenyl				1.64E-04	2.54E-03	1.47E-03	3.84E-04	4.12E-04	1.13E-04	1.50E-03	4.69E-01	3.74E-03	1.62E-04	3.05E-04	2.91E-04	8.05E-05	1.33E-04
Tetrachlorobiphenyl				2.19E-04	8.78E-03	2.70E-03	6.63E-04	7.77E-04	2.30E-04	4.74E-03	5.52E-01	2.23E-02	1.56E-04	3.15E-04	3.20E-04	9.75E-05	1.51E-04
Pentachlorobiphenyl				2.79E-04	3.13E-02	5.05E-03	1.15E-03	1.35E-03	4.15E-04	1.10E-02	3.12E-01	2.29E-01	1.26E-04	2.76E-04	2.49E-04	8.76E-05	1.30E-04
Hexachlorobiphenyl				2.14E-04	2.46E-02	5.61E-03	1.41E-03	2.84E-03	3.07E-04	9.70E-03	1.80E-01	3.26E-01	1.02E-04	2.09E-04	1.86E-04	9.58E-05	1.21E-04
Heptachlorobiphenyl				6.74E-05	6.65E-03	2.97E-03	7.83E-04	3.53E-03	1.07E-04	3.43E-03	5.74E-02	1.64E-01	3.85E-05	7.18E-05	8.31E-05	1.98E-04	5.95E-05
Octachlorobiphenyl				2.06E-05	1.48E-03	8.82E-04	2.13E-04	1.48E-03	2.58E-05	8.57E-04	1.67E-02	3.12E-02	1.08E-05 J	2.05E-05	3.43E-05	2.08E-04	2.04E-05
Nonachlorobiphenyl				3.91E-06 J	2.77E-04	1.61E-04	3.24E-05	1.81E-04	2.76E-06	1.62E-04	4.12E-03	2.50E-03	3.01E-06 J	5.79E-06 J	7.16E-06 J	5.91E-05	4.99E-06 J
Decachlorobiphenyl				2.19E-06 J	5.56E-05	3.06E-05	7.69E-06	9.27E-06	1.82E-06	4.58E-05	7.65E-04	2.75E-04	0.00E+00	1.92E-06 J	3.05E-06 J	4.83E-06 J	2.31E-06 J
Total Detected PCBs (Method 1668)	6.40E-05	6.40E-06	3.00E-01	9.99E-04	7.70E-02	1.95E-02	4.84E-03	1.07E-02	1.26E-03	3.17E-02	1.69E+00	7.80E-01	7.05E-04	1.41E-03	1.32E-03	9.14E-04	7.27E-04
Phthalates (ug/l)																	
Bis(2-ethylhexyl) phthalate	2.2	0.2	5	15	11	0.83 U	0.81	0.96	1.6	0.77 U	12 J	0.83 J	0.19 U	0.57	0.19 U	1.5	0.22 U
Butylbenzyl phthalate	3			0.38 U	1.9 U	0.83 U	0.19 U	0.19 U	0.19 U	0.77 U	7.9 U	0.77 U	0.19 U	0.19 U	0.19 U	0.19 U	0.22 U
Dibutyl phthalate	3			0.19 U	1.9 U	0.83 U	0.19 U	0.19 U	0.19 U	0.77 U	7.9 U	0.77 U	0.19 U	0.19 U	0.19 U	0.19 U	0.22 U
Diethyl phthalate	3			0.19 U	1.9 U	0.83 U	0.19 U	0.19 U	0.19 U	0.77 U	7.9 U	0.77 U	0.19 U	0.19 U	0.19 U	0.19 U	0.22 U
Dimethyl phthalate	3			0.19 U	1.9 U	0.83 U	0.19 U	0.19 U	0.19 U	0.77 U	7.9 U	0.77 U	0.19 U	0.19 U	0.19 U	0.19 U	0.22 U
Di-n-octyl phthalate	3			21	1.9 U	0.83 U	0.38 U	0.19 U	0.19 U	0.77 U	7.9 U	0.77 U	0.19 U	0.19 U	0.19 U	1.1	0.22 U
Pesticides (ug/l)																	
2,4'-DDD	3.10E-04	3.10E-05															
2,4'-DDE	2.20E-04	1.80E-05															
2,4'-DDT	2.00E-01	2.20E-05															
4,4'-DDD	3.10E-04	3.10E-05															
4,4'-DDE	2.20E-04	1.80E-05															
4,4'-DDT	2.20E-04	2.20E-05															
Total DDx		1.00E-02															
Aldrin	5.00E-05	7.70E-07															
alpha-BHC	4.90E-03																

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 11/22/2016	B18-D-CB3 11/22/2016	B18-F-1 11/22/2016	B18-F-2 11/22/2016	B18-F-3 11/22/2016	B18-F-4 11/22/2016	B18-F-5 11/22/2016	B18-F-6 11/22/2016	B18-F-7 11/22/2016	B18-F-R1 11/22/2016	B18-F-R2 11/22/2016	B18-F-R3 11/22/2016	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016
beta-BHC	1.70E-02																
cis-Chlordane	8.10E-04	8.10E-05															
cis-Nonachlor	1.90E-01																
Chlordane Technical		8.10E-05															
delta-BHC	5.20E-02																
Dieldrin	5.40E-05																
Endosulfan I	5.10E-02																
Endosulfan II	5.10E-02																
Endosulfan sulfate	8.90E+01																
Endrin	3.60E-02																
Endrin aldehyde																	
Endrin ketone																	
gamma-BHC	3.70E-02																
Heptachlor	7.90E-05																
Heptachlor epoxide	3.90E-05																
Hexachlorobenzene	2.90E-04	2.90E-05															
Hexachlorobutadiene	8.60E-01																
Hexachloroethane	3.30E+00																
Methoxychlor	3.00E-02																
Mirex	NC																
Oxychlordane	1.90E-01	8.10E-05															
Toxaphene	2.00E-04																
trans-Chlordane	8.10E-04	8.10E-05															
trans-Nonachlor	1.90E-01																
Dioxins (ug/l)																	
1,2,3,4,6,7,8-HeptaCDD				3.49E-06 J	1.20E-04	3.91E-05 J	8.46E-06 J	8.21E-06 J	1.28E-05 J	2.08E-04	6.93E-04	5.19E-05	1.73E-06 J	6.61E-06 U	6.10E-06 U	6.13E-06 J	8.16E-06 J
1,2,3,4,6,7,8-HeptaCDF				9.39E-07 J	1.82E-05 J	1.03E-05 J	2.13E-06 J	1.22E-06 J	1.73E-06 J	1.59E-05 J	1.06E-04	4.56E-05 J	4.63E-07 J	2.97E-06 U	2.68E-06 U	1.36E-06 J	1.76E-06 J
1,2,3,4,7,8,9-HeptaCDF				4.81E-07 U	1.18E-06 J	8.45E-07 J	6.12E-07 U	7.04E-07 U	6.55E-07 U	1.33E-06 J	8.17E-06 J	2.46E-06 J	5.07E-07 U	3.97E-06 U	3.57E-06 U	5.67E-07 U	7.70E-07 U
1,2,3,4,7,8-HexaCDD				5.02E-07 U	1.78E-06 J	7.66E-07 J	4.45E-07 U	5.09E-07 U	5.41E-07 U	2.38E-06 J	8.40E-06 J	1.29E-06 J	3.76E-07 U	3.18E-06 U	2.93E-06 U	8.11E-07 U	9.44E-07 U
1,2,3,4,7,8-HexaCDF				4.02E-07 U	1.64E-06 J	7.27E-07 J	3.62E-07 U	3.33E-07 U	3.39E-07 U	8.83E-07 J	1.06E-05 J	4.52E-06 J	2.85E-07 U	2.64E-06 U	2.55E-06 U	5.15E-07 U	4.99E-07 U
1,2,3,6,7,8-HexaCDD				4.87E-07 U	7.27E-06 J	2.08E-06 J	4.84E-07 J	5.93E-07 J	6.74E-07 J	4.66E-06 J	3.29E-05 J	2.90E-06 J	3.64E-07 U	3.06E-06 U	2.84E-06 U	7.55E-07 U	8.78E-07 U
1,2,3,6,7,8-HexaCDF				3.83E-07 U	1.57E-06 J	7.66E-07 J	3.45E-07 U	3.18E-07 U	3.22E-07 U	6.57E-07 J	1.18E-05 J	4.77E-06 J	2.72E-07 U	2.51E-06 U	2.43E-06 U	4.86E-07 U	4.71E-07 U
1,2,3,7,8,9-HexaCDD				5.10E-07 U	2.90E-06 J	1.43E-06 J	4.51E-07 U	5.15E-07 U	5.47E-07 U	4.00E-06 J	2.09E-05 J	2.24E-06 J	3.82E-07 U	3.22E-06 U	2.97E-06 U	7.99E-07 U	9.28E-07 U
1,2,3,7,8,9-HexaCDF				5.06E-07 U	1.02E-06 J	6.52E-07 U	4.57E-07 U	4.19E-07 U	4.25E-07 U	3.76E-07 U	4.73E-06 J	1.44E-06 J	3.58E-07 U	3.32E-06 U	3.20E-06 U	6.05E-07 U	5.86E-07 U
1,2,3,7,8-PentaCDD				4.64E-07 U	1.14E-06 J	9.04E-07 J	4.20E-07 U	4.76E-07 U	4.29E-07 U	1.48E-06 J	1.04E-05 J	6.72E-06 J	3.89E-07 U	2.60E-06 U	2.55E-06 U	6.07E-07 U	5.51E-07 U
1,2,3,7,8-PentaCDF				5.56E-07 JK	6.19E-07 J	6.27E-07 U	3.39E-07 U	4.21E-07 J	3.68E-07 U	6.16E-07 J	3.33E-06 J	3.94E-06 J	2.49E-07 U	2.56E-06 U	2.49E-06 U	5.19E-07 J	5.19E-07 J
2,3,4,6,7,8-HexaCDF				3.97E-07 U	2.30E-06 J	9.82E-07 J	3.87E-07 J	3.27E-07 U	3.33E-07 U	9.85E-07 J	2.47E-05 J	8.56E-06 J	2.79E-07 U	2.60E-06 U	2.51E-06 U	5.13E-07 U	4.97E-07 U
2,3,4,7,8-PentaCDF				2.99E-07 U	9.86E-07 J	1.06E-06 J	2.94E-07 U	3.12E-07 U	3.20E-07 U	7.39E-07 J	3.62E-05 J	9.18E-06 J	2.16E-07 U	2.24E-06 U	2.16E-06 U	3.30E-07 U	3.61E-07 U
2,3,7,8-TetraCDD	5.1E-09	5E-10		6.07E-07 U	5.66E-07 U	5.60E-07 U	4.80E-07 U	4.92E-07 U	5.35E-07 U	4.56E-07 U	1.52E-06 J	4.09E-07 U	3.82E-07 U	4.20E-06 U	3.47E-06 U	4.80E-07 U	6.34E-07 U
2,3,7,8-TetraCDF				8.11E-07 U	1.04E-06 U	8.59E-07 U	7.44E-07 U	7.79E-07 U	6.83E-07 U	7.86E-07 U	4.43E-06 J	1.41E-05	4.84E-07 U	5.51E-06 U	5.33E-06 U	5.19E-07 U	6.50E-07 U
OCDD				1.85E-05 J	8.33E-04	2.83E-04	6.18E-05 J	3.37E-05 J	8.65E-05 J	2.36E-03	5.25E-03	3.38E-04	1.18E-05 J	1.75E-05 J	1.55E-05 J	2.48E-05 J	3.12E-05 J
OCDF				2.01E-06 J	3.07E-05 J	3.40E-05 J	7.49E-06 J	2.95E-06 J	3.18E-06 J	5.43E-05 J	3.34E-04	4.27E-05 J	1.44E-06 U	1.72E-05 U	1.43E-05 U	1.98E-06 J	3.57E-06 J
HeptaCDD homologs				7.86E-06 J	2.02E-04	9.48E-05	1.67E-05 J	1.77E-05 J	2.23E-05 J	9.37E-04	1.44E-03	1.07E-04	3.32E-06 J	6.69E-06 J	6.10E-06 U	1.23E-05 J	1.64E-05 J
HeptaCDF homologs				2.20E-06 J	5.02E-05	2.86E-05 J	5.91E-06 J	3.04E-06 J	4.52E-06 J	6.08E-05	3.50E-04	9.20E-05	4.63E-07 J	2.97E-06 U	2.68E-06 U	4.46E-07 U	6.06E-07 U
HexaCDD homologs				6.71E-07 J	3.35E-05 J	1.67E-05 J	2.79E-06 J	3.23E-06 J	2.19E-06 J	8.97E-05	2.53E-04	2.90E-05 J	3.64E-07 U	3.06E-06 U	2.84E-06 U	7.55E-07 U	3.45E-06 J
HexaCDF homologs				6.13E-07 J	3.86E-05 J	1.31E-05 J	2.96E-06 J	1.88E-06 J	1.75E-06 J	2.41E-05 J	3.66E-04	1.15E-04	2.72E-07 U	2.51E-06 U	2.43E-06 U	5.76E-07 J	1.84E-06 J
PentaCDD homologs				2.93E-07 U	1.14E-06 J	1.59E-06 J	4.20E-07 U	4.76E-07 U	4.29E-07 U	7.06E-06 U	4.78E-05 J	5.28E-06 J	3.89E-07 U	2.60E-06 U	2.55E-06 U	6.07E-07 U	5.51E-07 U
PentaCDF homologs				2.95E-07 U	1.52E-05 J	4.79E-06 J	2.19E-06 J	5.17E-07 J	2.43E-07 U	9.20E-06 J	3.94E-04	1.43E-04	2.00E-07 U	2.24E-06 U	2.16E-06 U	5.19E-07 J	9.18E-07 J
TetraCDD homologs				3.95E-07 U	5.66E-07 U	5.60E-07 U	4.80E-07 U	4.92E-07 U	5.35E-07 U	4.56E-07 U	6.24E-06 J	4.09E-07 U	3.82E-07 U	4.20E-06 U	3.47E-06 U	4.80E-07 U	6.34E-07 U
TetraCDF homologs				8.11E-07 U	1.04E-06 U	1.20E-06 J	7.44E-07 U	7.79E-07 U	6.83E-07 U	2.92E-06 J	1.34E-04	9.16E-05	4.84E-07 U	5.51E-06 U	5.33E-06 U	5.19E-07 U	6.50E-07 U
Total Dioxin TEQ (ND=DL/2)	5.1E-09	5E-10		8.50E-07	5.29E-06	2.86E-06	8.56E-07	8.72E-07	9.38E-07	6.34E-06	4.45E-05	1.49E-05	5.90E-07	5.15E-06	4.68E-06	9.44E-07	1.05E-06
Total Dioxin TEQ (ND=0)	5.1E-09	5E-10		6.71E-08	4.96E-06	2.49E-06	2.14E-07	1.77E-07	2.40E-07	6.05E-06	4.45E-05	1.47E-05	2.55E-08	5.25E-09	4.65E-09	9.85E-08	1.25E-07
Butyltins (ug/l)																	
Butyltin ion				0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U
Dibutyltin ion				0.0051 J	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0018 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0047 J	0.0017 U
Tributyltin ion	0.072	0.063		0.018 J	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0035 J	0.0034 J	0.0013 U	0.0013 U
Total Metals (ug/l)																	
Aluminum				32 J	5370	1090	160	64	80	1730	10900	1080	25 U	33 J	652	32 J	28 J

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB1 11/22/2016	B18-D-CB3 11/22/2016	B18-F-1 11/22/2016	B18-F-2 11/22/2016	B18-F-3 11/22/2016	B18-F-4 11/22/2016	B18-F-5 11/22/2016	B18-F-6 11/22/2016	B18-F-7 11/22/2016	B18-F-R1 11/22/2016	B18-F-R2 11/22/2016	B18-F-R3 11/22/2016	B18-D-CB1 10/13/2016	B18-D-CB2 10/13/2016
Antimony	6			9.3	7.1	0.68 J	0.50 U	0.50 U	0.50 U	0.61 J	6.8	1.8	0.50 U	0.50 U	0.50 U	3.1	0.5 U
Arsenic	0.045	0.02	2	0.50 U	3.0	1.1	0.50 U	0.97 J	0.50 U	0.98 J	6.4	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U
Cadmium	0.094		0.7	0.040 U	0.63	0.10 J	0.12 J	0.12 J	0.040 U	0.20	5.6	0.33	0.040 U	0.040 U	0.089 J	0.13 J	0.044 J
Chromium	100	100	10	0.50 U	24	6.2	2.6	1.3	0.92 J	32	196	9.6	0.50 U	0.50 U	7.6	0.50 U	0.50 U
Copper	2.7	3	60	9.6	156	13	6.1	30	2.5	17	317	58	1.1	3.6	8.4	1.4	0.92 J
Lead	0.54		50	0.37	130	5.6	2.1	3.2	0.24	19	460	109	0.53	0.70	6.4	0.31	0.32
Manganese	50	50		8.9	498	63	37	68	70	442	4070	72	5.6	7.0	202	5.8	4.0
Mercury	0.77		0.2	0.040 U	0.040 J	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	2.1	0.17	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Nickel	16		8	0.50 J	12	3.9	0.67 J	3.2	1.6	3.4	49	3.3	0.50 U	0.62 J	2.2	0.54 J	0.50 U
Silver	0.12		0.1	0.10 U	0.14 J	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	1.2	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U
Zinc	36	36.5	700	18	802	61	35	35	19	78	2180	149	11	14	72	28	43
Dissolved Metals (ug/l)																	
Aluminum																	
Antimony	6																
Arsenic	0.045	0.02	2														
Cadmium	0.094		0.7														
Chromium	100	100	10														
Copper	2.7	3	60														
Lead	0.54		50														
Manganese	50																
Mercury	0.77		0.2														
Nickel	16		8														
Silver	0.12		0.1														
Zinc	36	36.5	700														
Petroleum Hydrocarbons (ug/l)																	
Gasoline				50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Diesel				103 U	103 U	112 U	103 U	111 U	279	109 U	112 U	102 U	101 U	103 U	105 U	95 U	112 U
Oil				310	303 J	546	311 J	298 J	243	515	6740	1080	202 U	206 U	211 U	190 U	225 U
TSS (ug/l)			70000	5000 U	245000	37000	10000	5000 U	5000 U	88000	618000	52000 U	5000 U	5000 U	24000	5000 U	5000 U
TOC (ug/l)				1000 U	8260	4360	1090	1920	6450	8350	3000	1140	1000 U	1100	1000 U	1000 U	1300

U - Not detected at noted detection limit
J- Estimated value

1 - Table 3-1 PH JSCS Guidance, 7/16/2007 revision
2 - Table 17 January 2017 PH ROD. Surface Water Cleanup Level.
3 - October 2010, DEQ Guidance for Evaluating Stormwater Pathway at Upland Sites, Appendix E, Tool For Evaluating Stormwater Data (12/2015 update)

Detected concentration > 10 x SLV (CL or JSCS if no CL)
Detected concentration > 100 x SLV (CL or JSCS if no CL)
Detected concentration > 1000 x SLV (CL or JSCS if no CL)

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013
PAHs (ug/l)																	
Acenaphthene	2.00E-01			9.62E-02 U	1.08E-02 U	9.52E-03 U	1.06E-02 U	1.05E-02 U	9.62E-03 U	1.86E-01	9.62E-03 U	9.52E-03 U	9.62E-03 U	9.52E-03 U	9.43E-03 U	8.25E-02 U	1.98E-01 U
Acenaphthylene	2.00E-01			9.62E-02 U	1.08E-02 U	9.52E-03 U	1.06E-02 U	1.05E-02 U	1.02E-02 J	3.88E-02 U	9.62E-03 U	9.52E-03 U	9.62E-03 U	9.52E-03 U	9.43E-03 U	8.25E-02 U	1.98E-01 U
Anthracene				9.62E-02 U	1.08E-02 U	9.52E-03 U	1.06E-02 U	1.05E-02 U	2.90E-02	1.75E-01	9.62E-03 U	9.52E-03 U	9.62E-03 U	9.52E-03 U	9.43E-03 U	8.25E-02 U	1.98E-01 U
Benzo(a)anthracene	1.80E-02	1.20E-03		1.35E-01 J	1.70E-02 J	9.52E-03 U	1.06E-02 U	1.05E-02 U	7.97E-02	2.87E-01	9.62E-03 U	9.52E-03 U	9.62E-03 U	9.52E-03 U	1.81E-02 J	1.38E-01 J	1.98E-01 U
Benzo(a)pyrene	1.80E-02	1.20E-04		3.31E-01	2.88E-02 J	1.43E-02 U	1.60E-02 U	1.58E-02 U	8.30E-02	2.86E-01	1.69E-02 J	1.43E-02 U	1.44E-02 U	1.43E-02 U	2.97E-02	1.24E-01 U	3.05E-01 J
Benzo(b)fluoranthene	1.80E-02	1.20E-03		3.64E-01	5.35E-02	1.43E-02 U	1.60E-02 U	1.58E-02 U	1.58E-01	4.70E-01	1.66E-02 J	1.43E-02 U	1.44E-02 U	1.43E-02 U	3.97E-02		
Benzo(k)fluoranthene	1.80E-02	1.30E-03		1.44E-01 U	1.93E-02 J	1.43E-02 U	1.60E-02 U	1.58E-02 U	4.96E-02	1.54E-01	1.44E-02 U	1.43E-02 U	1.44E-02 U	1.43E-02 U	1.69E-02 J		
Benzo(b+k)fluoranthene	1.80E-02	1.20E-03														2.14E-01 J	2.37E-01 J
Benzo(g,h,i)perylene	2.00E-01			3.17E-01	2.97E-02	9.52E-03 U	1.06E-02 U	1.05E-02 U	5.93E-02	2.25E-01	1.87E-02 J	9.52E-03 U	9.62E-03 U	9.52E-03 U	3.26E-02	1.51E-01 J	2.35E-01 J
Chrysene	1.80E-02	1.30E-03		3.30E-01	5.27E-02	9.52E-03 U	1.06E-02 U	1.05E-02 U	1.59E-01	4.80E-01	1.61E-02 J	9.52E-03 U	9.62E-03 U	9.52E-03 U	4.41E-02	1.98E-01	2.86E-01 J
Dibenzo(a,h)anthracene	1.80E-02	1.20E-04		9.62E-02 U	1.08E-02 U	9.52E-03 U	1.06E-02 U	1.05E-02 U	1.18E-02 J	4.92E-02 J	9.62E-03 U	9.52E-03 U	9.62E-03 U	9.52E-03 U	9.43E-03 U	8.25E-02 U	1.98E-01 U
Fluoranthene	2.00E-01			3.03E-01	5.79E-02	9.52E-03 U	1.17E-02 J	1.05E-02 U	1.51E-01	1.45E+00	2.50E-02	9.52E-03 U	1.05E-02 J	9.52E-03 U	5.20E-02	3.23E-01	3.03E-01 J
Fluorene	2.00E-01			9.62E-02 U	1.41E-02 J	9.52E-03 U	1.06E-02 U	1.05E-02 U	9.62E-03 U	2.97E-01	1.09E-02 J	9.59E-03 J	9.90E-03 J	1.04E-02 J	9.43E-03 U	8.25E-02 U	1.98E-01 U
Indeno(1,2,3-cd)pyrene	1.80E-02	1.20E-03		2.59E-01	2.29E-02	9.52E-03 U	1.06E-02 U	1.05E-02 U	6.14E-02	1.96E-01	1.24E-02 J	9.52E-03 U	9.62E-03 U	9.52E-03 U	2.38E-02	1.17E-01 J	1.98E-01 U
Naphthalene	2.00E-01	1.20E+01		1.92E-01 U	2.15E-02 U	1.90E-02 U	2.13E-02 U	2.11E-02 U	1.92E-02 U	7.77E-02 U	2.12E-02 J	2.46E-02 J	1.92E-02 U	2.90E-02 J	3.28E-02 J	1.65E-01 U	3.96E-01 U
Phenanthrene	2.00E-01			1.15E-01 J	4.17E-02	2.27E-02	1.06E-02 U	1.05E-02 U	2.54E-02	5.86E-01	3.06E-02	2.22E-02	1.78E-02 J	2.75E-02	2.53E-02	1.51E-01 J	1.98E-01 U
Pyrene	2.00E-01			4.15E-01	5.37E-02	9.52E-03 U	1.58E-02 J	1.05E-02 U	1.55E-01	1.13E+00	2.80E-02	9.52E-03 U	9.62E-03 U	9.52E-03 U	7.00E-02	3.36E-01	4.24E-01
Total Detected CPAHs (BaP TEF)		1.20E-04		3.74E-01	3.31E-02	0.00E+00	0.00E+00	0.00E+00	1.10E-01	3.86E-01	1.83E-02	0.00E+00	0.00E+00	0.00E+00	3.43E-02	4.86E-02	3.31E-01
Total Detected PAHs			1.50E+00	2.57E+00	3.91E-01	2.27E-02	2.75E-02	0.00E+00	1.02E+00	5.97E+00	1.96E-01	5.64E-02	2.83E-02	6.69E-02	3.85E-01	1.63E+00	1.79E+00
PCBs (ug/l)																	
Aroclor 1016	9.60E-01			1.03E-02 U	1.14E-02 U	1.04E-02 U	9.43E-03 U	9.62E-03 U	1.08E-02 U	1.06E-02 U	1.01E-02 U	1.03E-02 U	1.04E-02 U	1.03E-02 U	1.02E-02 U	1.92E-02 U	1.94E-02 U
Aroclor 1221	3.40E-02			1.03E-02 U	1.14E-02 U	1.04E-02 U	9.43E-03 U	9.62E-03 U	1.08E-02 U	1.06E-02 U	1.01E-02 U	1.03E-02 U	1.04E-02 U	1.03E-02 U	1.02E-02 U	1.92E-02 U	1.94E-02 U
Aroclor 1232	3.40E-02			1.03E-02 U	1.14E-02 U	1.04E-02 U	9.43E-03 U	9.62E-03 U	1.08E-02 U	1.06E-02 U	1.01E-02 U	1.03E-02 U	1.04E-02 U	1.03E-02 U	2.04E-02 U	1.92E-02 U	1.94E-02 U
Aroclor 1242	3.40E-02			1.03E-02 U	1.14E-02 U	1.04E-02 U	9.43E-03 U	9.62E-03 U	1.08E-02 U	1.17E-01	1.01E-02 U	1.03E-02 U	1.04E-02 U	1.03E-02 U	1.02E-02 U	2.43E-01	3.03E-02 J
Aroclor 1248	3.40E-02			1.03E-02 U	1.14E-02 U	1.04E-02 U	9.43E-03 U	9.62E-03 U	1.08E-02 U	1.06E-02 U	1.01E-02 U	1.03E-02 U	1.04E-02 U	1.03E-02 U	1.02E-02 U	1.92E-02 U	1.94E-02 U
Aroclor 1254	3.40E-02			5.20E-02	1.14E-02 U	1.04E-02 U	9.43E-03 U	9.62E-03 U	1.08E-02 U	1.10E-01	5.28E-02	1.03E-02 U	1.04E-02 U	1.03E-02 U	1.02E-02 U	2.35E-01	3.95E-02
Aroclor 1260	3.40E-02			4.21E-02	1.14E-02 U	1.04E-02 U	3.78E-02	9.62E-03 U	1.08E-02 U	5.23E-02	6.18E-02	1.03E-02 U	1.04E-02 U	1.03E-02 U	1.02E-02 U	1.09E-01	2.04E-02 J
Total Detected PCB aroclors	6.40E-05	6.40E-06	0.3	9.41E-02	0.00E+00	0.00E+00	3.78E-02	0.00E+00	0.00E+00	2.79E-01	1.15E-01	0.00E+00	0.00E+00	0.00E+00	0.00E+00	5.87E-01	9.02E-02
PCB Congeners (ug/l)																	
2-MonoCB-(1)																1.02E-04	2.00E-05 J
3-MonoCB-(2)																2.16E-05 J	1.40E-05 U
4-MonoCB-(3)																9.18E-05 J	1.70E-05 J
22'-DiCB-(4)																2.35E-03	1.60E-04
2,3-DiCB-(5)																2.00E-05 U	2.00E-05 U
2,3'-DiCB-(6)																8.26E-04	7.70E-05 J
2,4-DiCB-(7)																1.28E-04	1.70E-05 U
2,4'-DiCB-(8)																4.13E-03	3.40E-04
2,5-DiCB-(9)																2.18E-04	2.00E-05 U
2,6-DiCB-(10)																7.23E-05 J	1.50E-05 U
3,3'-DiCB-(11)																3.93E-04	2.50E-04
DiCB-(12)+(13)																5.80E-04	4.40E-05 U
3,5-DiCB-(14)																1.90E-05 U	1.70E-05 U
4,4'-DiCB-(15)																7.90E-03	3.90E-04
22'3-TriCB-(16)																1.08E-02	4.10E-04
22'4-TriCB-(17)																8.27E-03	3.80E-04
TriCB-(18)+(30)																1.61E-02	7.40E-04
22'6-TriCB-(19)																1.75E-03	8.70E-05 J
TriCB-(20) + (28)																3.52E-02	1.79E-03
TriCB-(21)+(33)																1.78E-02	1.04E-03
234'-TriCB-(22)																1.31E-02	7.20E-04
235-TriCB-(23)																2.17E-05 J	1.90E-05 U
236-TriCB-(24)																6.40E-06 U	2.00E-05 J
23'4-TriCB-(25)																2.46E-03	1.30E-04
TriCB-(26)+(29)																5.25E-03	2.60E-04
23'6-TriCB-(27)																1.48E-03	6.30E-05 J
24'5-TriCB-(31)																2.70E-02	1.41E-03
24'6-TriCB-(32)																6.49E-03	2.80E-04
23'5'-TriCB-(34)																7.10E-05 U	1.90E-05 U
33'4-TriCB-(35)																5.50E-04	2.90E-05 J
33'5-TriCB-(36)																5.00E-06 U	1.50E-05 U
344'-TriCB-(37)																1.31E-02	6.40E-04
345-TriCB-(38)																5.60E-06 U	1.80E-05 U
34'5-TriCB-(39)																1.33E-04	1.60E-05 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013
TetraCB-(40)+(41)+(71)																2.10E-02	9.60E-04
22'34'-TetraCB-(42)																1.22E-02	4.80E-04
22'35-TetraCB-(43)																1.61E-03	8.00E-05 J
TetraCB-(44)+(47)+(65)																3.48E-02	1.56E-03
TetraCB-(45)+(51)																6.37E-03	2.50E-04
22'36'-TetraCB-(46)																2.30E-03	9.10E-05 J
22'45-TetraCB-(48)																6.93E-03	2.80E-04
TetraCB-(49)+TetraCB-(69)																1.94E-02	7.90E-04
TetraCB-(50)+(53)																4.35E-03	1.65E-04 J
22'55'-TetraCB-(52)																3.38E-02	1.40E-03
22'66'-TetraCB-(54)																6.70E-05 J	1.70E-05 U
233'4-TetraCB-(55)																4.60E-06 U	2.00E-05 U
233'4'-Tetra CB(56)																1.43E-02	5.30E-04
233'5-TetraCB-(57)																1.03E-04	2.00E-05 U
233'5'-TetraCB-(58)																4.40E-06 U	2.00E-05 U
TetraCB-(59)+(62)+(75)																3.12E-03	1.43E-04 J
2344'-TetraCB -(60)																7.47E-03	2.50E-04
TetraCB-(61)+(70)+(74)+(76)																4.58E-02	2.01E-03
234'5-TetraCB-(63)																9.58E-04	3.40E-05 J
234'6-TetraCB-(64)																1.78E-02	8.10E-04
23'44'-TetraCB-(66)																2.51E-02	9.60E-04
23'45-TetraCB-(67)																9.13E-04	3.70E-05 J
23'45'-TetraCB-(68)																5.97E-05 J	1.80E-05 U
23'55'-TetraCB-(72)																1.25E-04	1.90E-05 U
23'5'6-TetraCB-(73)																3.10E-06 U	1.50E-05 U
33'44'-TetraCB-(77)																2.97E-03	1.40E-04
33'45-TetraCB-(78)																4.70E-06 U	2.00E-05 U
33'45'-TetraCB(79)																1.95E-04	1.80E-05 U
33'55'-TetraCB-(80)																4.20E-06 U	1.80E-05 U
344'5-TetraCB-(81)																1.24E-04	2.40E-05 U
22'33'4-PentaCB-(82)																4.64E-03	2.60E-04
PentaCB-(83)+(99)																1.43E-02	8.20E-04
22'33'6-PentaCB-(84)																8.51E-03	4.90E-04
PentaCB-(85)+(116)+(117)																4.91E-03	2.54E-04 J
PentaCB-(86)(87)(97)(109)(119)(125)																2.15E-02	1.30E-03
PentaCB-(88)+(91)																4.09E-03	2.20E-04
22'346'-PentaCB-(89)																4.73E-04	2.60E-05 U
PentaCB-(90)+(101)+(113)																2.56E-02	1.71E-03
22'355'-PentaCB-(92)																4.42E-03	2.70E-04
PentaCB-(93)+(98)+(100)+(102)																1.35E-03	7.10E-05 J
22'356'-PentaCB-(94)																1.57E-04	2.60E-05 U
22'35'6-PentaCB-(95)																2.02E-02	1.32E-03
22'366'-PentaCB-(96)																2.61E-04	1.90E-05 U
22'45'6-PentaCB-(103)																1.29E-04	2.10E-05 U
22'466'-PentaCB-(104)																3.70E-06 U	1.70E-05 U
233'44'-PentaCB-(105)																1.44E-02	8.40E-04
233'45-PentaCB-(106)																3.70E-06 U	1.80E-05 U
233'4'5-PentaCB-(107)																1.88E-03	1.20E-04
PentaCB-(108)+(124)																1.06E-03	6.90E-05 J
PentaCB-(110)+(115)																3.84E-02	2.79E-03
233'55'-PentaCB-(111)																5.50E-06 U	1.70E-05 U
233'56-PentaCB-(112)																6.20E-06 U	1.80E-05 U
2344'5-PentaCB-(114)																7.70E-04	4.40E-05 J
23'44'5-PentaCB-(118)																2.89E-02	1.92E-03
23'455'-PentaCB-(120)																2.99E-05 J	1.70E-05 U
23'45'6-PentaCB-(121)																5.50E-06 U	1.70E-05 U
233'4'5'-PentaCB-(122)																4.09E-04	2.30E-05 U
23'44'5'-PentaCB-(123)																4.07E-04	2.60E-05 J
33'44'5-PentaCB-(126)																1.08E-04	2.00E-05 U
33'455'-PentaCB-(127)																3.00E-05 U	1.80E-05 U
HexaCB-(128)+(166)																5.96E-03	4.50E-04
HexaCB-(129)+(138)+(163)																4.10E-02	3.30E-03
22'33'45'-HexaCB-(130)																2.18E-03	1.70E-04
22'33'46-HexaCB-(131)																5.06E-04	4.10E-05 J
22'33'46'-HexaCB-(132)																1.24E-02	9.30E-04
22'33'55'-HexaCB-(133)																3.28E-04	3.10E-05 J

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013
HexaCB-(134)+(143)																1.74E-03	1.35E-04 J
HexaCB-(135)+(151)																8.48E-03	6.60E-04
22'33'66'-HexaCB-(136)																3.33E-03	2.70E-04
22'344'5-HexaCB-(137)																1.40E-03	1.40E-04
HexaCB-(139)+(140)																5.05E-04	4.10E-05 J
22'3455'-HexaCB-(141)																7.15E-03	5.30E-04
22'3456-HexaCB-(142)																7.20E-06 U	2.10E-05 U
22'345'6-HexaCB-(144)																1.35E-03	1.10E-04
22'3466'-HexaCB-(145)																1.01E-05 J	2.30E-05 U
22'34'55'-HexaCB-(146)																4.04E-03	3.30E-04
HexaCB-(147)+(149)																2.30E-02	1.79E-03
22'34'56'-HexaCB-(148)																1.75E-05 J	3.00E-05 U
22'34'66'-HexaCB-(150)																2.39E-05 J	2.10E-05 U
22'3566'-HexaCB-(152)																2.10E-05 U	2.30E-05 U
HexaCB-(153)+(168)																2.48E-02	1.96E-03
22'44'56'-HexaCB-(154)																1.87E-04	2.60E-05 U
22'44'66'-HexaCB-(155)																2.40E-06 U	2.30E-05 U
HexaCB-(156)+(157)																4.34E-03	3.50E-04
233'44'6-HexaCB-(158)																3.95E-03	3.00E-04
233'455'-HexaCB-(159)																2.45E-04	2.20E-05 J
233'456-HexaCB-(160)																5.60E-06 U	1.40E-05 U
233'45'6-HexaCB-(161)																4.80E-06 U	1.40E-05 U
233'4'55'-HexaCB-(162)																1.07E-04	1.50E-05 U
233'4'5'6-HexaCB-(164)																2.81E-03	1.80E-04
233'55'6-HexaCB-(165)																5.30E-06 U	1.50E-05 U
23'44'55'-HexaCB-(167)																1.33E-03	1.10E-04
33'44'55'-HexaCB-(169)																1.30E-05 U	1.70E-05 U
22'33'44'5-HeptaCB-(170)																6.25E-03	5.60E-04
HeptaCB-(171)+(173)																1.97E-03	1.60E-04 J
22'33'455'-HeptaCB-(172)																1.03E-03	9.30E-05 J
22'33'456'-HeptaCB-(174)																6.49E-03	5.20E-04
22'33'45'6-HeptaCB-(175)																2.42E-04	1.90E-05 J
22'33'466'-HeptaCB-(176)																6.78E-04	5.90E-05 J
22'33'45'6'-HeptaCB-(177)																3.72E-03	3.00E-04
22'33'55'6-HeptaCB-(178)																1.01E-03	8.90E-05 J
22'33'566'-HeptaCB-(179)																2.06E-03	1.90E-04
HeptaCB-(180)+(193)																1.51E-02	1.27E-03
22'344'56-HeptaCB-(181)																6.75E-05 J	2.50E-05 U
22'344'56'-HeptaCB-(182)																2.40E-05 U	1.40E-05 U
22'344'5'6-HeptaCB-(183)																3.63E-03	2.60E-04
22'344'66'-HeptaCB-(184)																4.20E-06 U	9.40E-06 U
22'3455'6-HeptaCB-(185)																3.40E-06 U	4.60E-05 J
22'34566'-HeptaCB-(186)																2.10E-06 U	1.00E-05 U
22'34'55'6-HeptaCB-(187)																6.60E-03	5.60E-04
22'34'566'-HeptaCB-(188)																7.40E-06 U	1.20E-05 U
233'44'55'-HeptaCB-(189)																2.84E-04	2.60E-05 J
233'44'56-HeptaCB-(190)																1.23E-03	1.00E-04
233'44'5'6-HeptaCB-(191)																2.35E-04	2.00E-05 U
233'455'6-HeptaCB-(192)																2.60E-06 U	2.10E-05 U
22'33'44'55'-OctaCB-(194)																3.07E-03	2.80E-04
22'33'44'56-OctaCB-(195)																1.08E-03	9.60E-05 J
22'33'44'56'-OctaCB-(196)																1.66E-03	1.50E-04
22'33'44'66'OctaCB-(197)																7.47E-05 J	1.70E-05 U
OctaCB-(198)+(199)																3.77E-03	3.40E-04
22'33'4566'-OctaCB-(200)																4.44E-04	3.30E-05 J
22'33'45'66'-OctaCB-(201)																3.83E-04	4.00E-05 J
22'33'55'66'-OctaCB-(202)																6.66E-04	5.90E-05 U
22'344'55'6-OctaCB-(203)																2.34E-03	2.10E-04
22'344'566'-OctaCB-(204)																4.50E-06 U	1.70E-05 U
233'44'55'6-OctaCB-(205)																1.53E-04	1.70E-05 U
22'33'44'55'6-NonaCB-(206)																2.10E-03	2.10E-04
22'33'44'566'-NonaCB-(207)																2.28E-04	2.00E-05 U
22'33'455'66'-NonaCB-(208)																5.14E-04	7.10E-05 J
DecaCB-(209)																9.64E-04	8.70E-05 J
PCB Congeners (ug/l)																	

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013
2-Chlorobiphenyl (1)				1.24E-08 J	1.04E-08 J	3.14E-09 J	2.44E-09 J	2.88E-09 J	6.31E-06 J	7.11E-05	5.61E-06 J	3.32E-06 U	2.98E-06 J	3.32E-06 J	1.98E-06 U		
3-Chlorobiphenyl (2)				1.71E-05 J	4.54E-06 J	1.42E-06 J	1.57E-06 J	6.11E-07 U	2.05E-06 J	2.82E-05	5.05E-06 J	1.07E-06 U	1.23E-06 U	9.90E-07 U	1.94E-06 U		
4-Chlorobiphenyl (3)				2.71E-05 J	9.67E-06 J	2.64E-06 J	2.52E-06 J	2.18E-06 J	2.82E-06 J	6.66E-05	5.53E-06 J	1.27E-06 U	2.34E-06 J	1.07E-06 U	2.60E-06 J		
2,2'-Dichlorobiphenyl (4)				3.37E-05 U	3.66E-05	8.44E-06 J	1.61E-05 J	9.31E-06 J	1.72E-05 J	5.01E-04	1.83E-05 J	3.74E-06 U	5.80E-06 J	8.03E-06 J	2.16E-05		
2,3-Dichlorobiphenyl (5)				3.43E-05 U	2.40E-06 U	1.51E-06 U	1.52E-06 U	1.22E-06 U	1.76E-06 U	3.50E-05	3.79E-06 U	4.49E-06 U	2.32E-06 U	3.38E-06 U	3.27E-06 U		
2,3'-Dichlorobiphenyl (6)				2.63E-05 U	1.78E-05 J	2.66E-06 J	3.73E-06 J	2.60E-06 J	4.94E-06 J	3.00E-04	9.39E-06 J	3.49E-06 U	1.83E-06 U	4.62E-06 U	6.82E-06 J		
2,4-Dichlorobiphenyl (7)				2.86E-05 U	5.46E-06 J	1.30E-06 U	1.31E-06 U	1.05E-06 U	2.09E-06 J	5.54E-05	3.29E-06 U	3.92E-06 U	2.04E-06 U	2.95E-06 U	2.85E-06 U		
2,4'-Dichlorobiphenyl (8)				1.17E-04 J	8.19E-05	1.07E-05 J	1.68E-05 J	1.05E-05 J	1.87E-05 J	1.35E-03	3.48E-05	1.01E-05 J	1.09E-05 J	1.33E-05 J	2.92E-05		
2,5-Dichlorobiphenyl (9)				2.80E-05 U	5.92E-06 J	1.34E-06 U	2.54E-06 J	1.22E-06 J	2.05E-06 J	8.02E-05	3.21E-06 U	3.82E-06 U	2.04E-06 U	2.95E-06 U	2.85E-06 U		
2,6-Dichlorobiphenyl (10)				2.72E-05 U	1.87E-06 U	1.28E-06 U	1.27E-06 U	8.97E-07 U	1.49E-06 U	2.74E-05	2.03E-06 U	2.28E-06 U	1.23E-06 U	1.67E-06 U	1.52E-06 U		
3,3'-Dichlorobiphenyl (11)				4.55E-04 J	1.93E-04	5.92E-05 J	6.79E-05 J	4.66E-05 J	5.42E-05 J	3.60E-04	1.49E-04	7.69E-05 J	8.75E-05 J	7.27E-05 J	9.16E-05 J		
3,4-Dichlorobiphenyl (12) (13)				2.94E-05 U	2.06E-05 J	4.04E-06 J	5.47E-06 J	4.87E-06 J	5.56E-06 J	2.72E-04	3.43E-06 U	4.06E-06 U	2.12E-06 U	3.09E-06 U	1.12E-05 J		
3,5-Dichlorobiphenyl (14)				2.65E-05 U	1.98E-06 U	1.26E-06 U	1.27E-06 U	1.01E-06 U	1.47E-06 U	3.55E-06 U	3.17E-06 U	3.76E-06 U	1.93E-06 U	2.81E-06 U	2.71E-06 U		
4,4'-Dichlorobiphenyl (15)				1.51E-04 J	1.06E-04	1.13E-05 J	3.58E-05	1.03E-05 J	3.56E-05	1.96E-03	3.29E-05	4.52E-06 U	8.51E-06 J	8.83E-06 J	7.90E-05		
2,2',3-Trichlorobiphenyl (16)				1.16E-04 J	5.59E-05	6.81E-06 J	2.22E-05	5.25E-06 J	1.77E-05 J	1.48E-03	3.12E-05	6.69E-06 J	6.91E-06 J	9.29E-06 J	5.75E-05		
2,2',4-Trichlorobiphenyl (17)				9.10E-05 J	4.73E-05	5.41E-06 J	2.17E-05	5.10E-06 J	1.56E-05 J	1.02E-03	1.96E-05	5.21E-06 J	5.72E-06 J	6.75E-06 J	4.47E-05		
2,2',5-Trichlorobiphenyl (18) (30)				1.90E-04 J	1.02E-04	1.27E-05 J	4.79E-05	1.22E-05 J	3.26E-05 J	2.26E-03	3.94E-05	1.04E-05 J	1.21E-05 J	1.29E-05 J	9.83E-05		
2,2',6-Trichlorobiphenyl (19)				3.05E-05 J	1.52E-05 J	2.77E-06 J	1.11E-05 J	3.02E-06 J	6.83E-06 J	2.71E-04	6.15E-06 J	3.14E-06 J	2.59E-06 J	2.97E-06 J	1.54E-05 J		
2,3,3'-Trichlorobiphenyl (20) (28)				3.76E-04 J	2.12E-04	1.85E-05 J	7.44E-05	1.95E-05 J	7.40E-05	6.40E-03	7.93E-05	1.64E-05 J	1.85E-05 J	1.80E-05 J	2.30E-04		
2,3,4-Trichlorobiphenyl (21) (33)				2.48E-04 J	1.19E-04	1.02E-05 J	3.68E-05 J	1.03E-05 J	3.22E-05 J	3.31E-03	6.07E-05	1.12E-05 J	1.03E-05 J	1.13E-05 J	6.66E-05		
2,3,4'-Trichlorobiphenyl (22)				1.70E-04 J	9.39E-05	9.45E-06 J	3.30E-05	8.82E-06 J	3.37E-05	2.98E-03	3.71E-05	7.27E-06 J	8.04E-06 J	8.65E-06 J	7.93E-05		
2,3,5-Trichlorobiphenyl (23)				1.41E-05 U	1.25E-06 U	1.38E-06 U	1.15E-06 U	8.78E-07 U	1.20E-06 U	5.70E-06 J	1.24E-06 U	1.38E-06 U	1.05E-06 U	1.09E-06 U	9.42E-07 U		
2,3,6-Trichlorobiphenyl (24)				1.43E-05 U	4.04E-06 J	1.51E-06 U	2.36E-06 J	9.73E-07 U	1.31E-06 U	1.20E-06 U	1.22E-06 U	1.37E-06 U	1.11E-06 U	1.14E-06 U	9.80E-07 U		
2,3',4-Trichlorobiphenyl (25)				3.06E-05 J	1.41E-05 J	1.24E-06 U	4.42E-06 J	1.49E-06 U	4.54E-06 J	3.79E-04	6.68E-06 J	1.29E-06 U	1.50E-06 J	1.47E-06 J	1.17E-05 J		
2,3',5-Trichlorobiphenyl (26) (29)				6.69E-05 J	3.05E-05 J	2.28E-06 J	1.05E-05 J	3.17E-06 J	9.07E-06 J	8.28E-04	1.66E-05 J	3.37E-06 J	3.21E-06 J	3.18E-06 J	2.77E-05 J		
2,3',6-Trichlorobiphenyl (27)				1.64E-05 J	1.01E-05 J	1.32E-06 U	5.28E-06 J	1.03E-06 J	3.40E-06 J	2.00E-04	2.77E-06 J	1.25E-06 U	1.58E-06 J	1.51E-06 J	9.21E-06 J		
2,4',5-Trichlorobiphenyl (31)				3.01E-04	1.48E-04	1.37E-05 J	5.47E-05	1.73E-05 J	4.64E-05	4.25E-03	5.70E-05	1.35E-05 J	1.31E-05 J	1.38E-05 J	1.39E-04		
2,4',6-Trichlorobiphenyl (32)				5.83E-05 J	3.17E-05	3.86E-06 J	1.56E-05 J	3.28E-06 J	1.11E-05 J	8.49E-04	1.14E-05 J	3.10E-06 J	3.56E-06 J	3.86E-06 J	3.60E-05		
2',3,5-Trichlorobiphenyl (34)				1.30E-05 U	1.17E-06 U	1.28E-06 U	1.08E-06 U	8.21E-07 U	1.11E-06 U	1.25E-05 J	1.18E-06 U	1.33E-06 U	9.66E-07 U	1.01E-06 U	8.65E-07 U		
3,3',4-Trichlorobiphenyl (35)				3.57E-05 J	1.33E-05 J	1.43E-06 U	3.96E-06 J	1.91E-06 J	3.38E-06 J	1.86E-04	9.73E-06 J	1.81E-06 U	1.89E-06 J	1.65E-06 U	7.29E-06 J		
3,3',5-Trichlorobiphenyl (36)				1.39E-05 U	2.19E-06 U	1.36E-06 U	1.69E-06 U	1.24E-06 U	1.71E-06 U	2.52E-06 U	2.19E-06 U	1.64E-06 U	9.46E-07 U	1.49E-06 U	1.63E-06 U		
3,4,4'-Trichlorobiphenyl (37)				2.19E-04	1.73E-04	1.12E-05 J	5.65E-05	1.06E-05 J	7.26E-05	3.28E-03	5.08E-05	6.22E-06 J	8.06E-06 J	6.25E-06 J	1.16E-04		
3,4,5-Trichlorobiphenyl (38)				1.37E-05 U	2.06E-06 U	1.30E-06 U	1.63E-06 U	1.20E-06 U	1.65E-06 U	6.05E-06 J	2.30E-06 U	1.72E-06 U	9.87E-07 U	1.53E-06 U	1.67E-06 U		
3,4',5-Trichlorobiphenyl (39)				1.48E-05 U	2.21E-06 U	1.38E-06 U	1.71E-06 U	1.28E-06 U	1.73E-06 U	2.71E-06 U	2.32E-06 U	1.74E-06 U	1.01E-06 U	1.57E-06 U	1.71E-06 U		
2,2',3,3'-Tetrachlorobiphenyl (40) (71)				3.21E-04 J	2.05E-04	1.01E-05 J	5.17E-05	8.53E-06 J	8.02E-05	3.58E-03	7.92E-05	4.29E-06 J	9.58E-06 J	6.21E-06 J	1.49E-04		
2,2',3,4-Tetrachlorobiphenyl (41)				7.05E-05 J	4.20E-05	3.83E-06 J	1.42E-05 J	2.86E-06 J	1.43E-05 J	8.41E-04	1.99E-05	2.73E-06 U	2.73E-06 J	2.12E-06 J	3.16E-05		
2,2',3,4'-Tetrachlorobiphenyl (42)				1.82E-04 J	1.13E-04	5.87E-06 J	2.90E-05	4.68E-06 J	4.14E-05	2.18E-03	4.24E-05	3.16E-06 J	5.57E-06 J	4.02E-06 J	8.77E-05		
2,2',3,5-Tetrachlorobiphenyl (43)				4.47E-05 U	1.94E-05 J	2.28E-06 U	4.47E-06 J	1.72E-06 U	4.45E-06 J	3.22E-04	1.10E-05 J	2.91E-06 U	1.60E-06 U	2.48E-06 U	1.49E-05 J		
2,2',3,5'-Tetrachlorobiphenyl (44) (47) (65)				1.02E-03	3.94E-04	2.26E-05 J	1.05E-04	1.98E-05 J	1.57E-04	6.62E-03	3.01E-04	1.26E-05 J	2.71E-05 J	1.54E-05 J	3.24E-04		
2,2',3,6-Tetrachlorobiphenyl (45) (51)				1.16E-04 J	4.04E-05 J	3.27E-06 J	2.11E-05 J	3.15E-06 J	1.72E-05 J	8.60E-04	1.76E-05 J	3.84E-06 J	5.70E-06 J	3.49E-06 J	3.98E-05		
2,2',3,6'-Tetrachlorobiphenyl (46)				4.71E-05 J	1.64E-05 J	1.49E-06 J	4.28E-06 J	1.15E-06 J	7.20E-06 J	3.12E-04	6.77E-06 J	1.29E-06 U	2.34E-06 J	1.46E-06 U	1.61E-05 J		
2,2',4,5-Tetrachlorobiphenyl (48)				8.48E-05 J	6.30E-05	3.90E-06 J	1.82E-05 J	3.38E-06 J	2.08E-05 J	1.45E-03	2.69E-05	2.46E-06 J	3.58E-06 J	3.09E-06 J	5.15E-05		
2,2',4,5'-Tetrachlorobiphenyl (49) (69)				4.62E-04	1.77E-04	9.51E-06 J	4.56E-05	9.43E-06 J	7.05E-05	3.29E-03	1.40E-04	5.40E-06 J	1.17E-05 J	6.42E-06 J	1.61E-04		
2,2',4,6-Tetrachlorobiphenyl (50) (53)				1.00E-04 J	2.39E-05 J	2.09E-06 J	8.22E-06 J	2.08E-06 J	9.98E-06 J	4.92E-04	1.43E-05 J	2.05E-06 J	3.72E-06 J	2.10E-06 J	2.62E-05 J		
2,2',5,5'-Tetrachlorobiphenyl (52)				1.80E-03	4.33E-04	1.90E-05 J	8.64E-05	1.72E-05 J	1.77E-04	5.29E-03	6.61E-04	1.01E-05 J	3.41E-05	2.21E-05	3.72E-04		
2,2',6,6'-Tetrachlorobiphenyl (54)				8.44E-06 U	9.58E-07 U	6.50E-07 U	9.22E-07 U	5.73E-07 U	7.56E-07 U	9.62E-06 J	1.28E-06 J	9.95E-07 U	8.43E-07 J	1.01E-06 U	8.84E-07 J		
2,3,3',4-Tetrachlorobiphenyl (55)				2.92E-05 J	9.67E-06 J	1.21E-06 U	3.76E-06 J	8.40E-07 U	4.45E-06 J	1.29E-04	2.24E-06 U	1.52E-06 U	1.19E-06 U	1.44E-06 U	5.31E-06 J		
2,3,3',4'-Tetrachlorobiphenyl (56)				3.79E-04	2.02E-04	1.01E-05 J	6.62E-05	8.11E-06 J	9.61E-05	2.22E-03	1.51E-04	4.37E-06 J	8.29E-06 J	4.93E-06 J	9.20E-05		
2,3,3',5-Tetrachlorobiphenyl (57)				1.80E-05 U	2.79E-06 U	1.05E-06 U	1.94E-06 U	7.25E-07 U	2.05E-06 J	2.91E-05	4.63E-06 J	1.35E-06 U	1.05E-06 U	1.26E-06 U	1.75E-06 J		
2,3,3',5'-Tetrachlorobiphenyl (58)				1.92E-05 U	2.92E-06 U	1.11E-06 U	2.05E-06 U	7.63E-07 U	1.89E-06 U	2.28E-05	2.19E-06 U	1.48E-06 U	1.11E-06 U	1.34E-06 U	1.92E-06 J		
2,3,3',6-Tetrachlorobiphenyl (59) (62) (75)				4.72E-05 J	3.79E-05 J	2.49E-06 J	9.33E-06 J	1.72E-06 J	1.51E-05 J	6.37E-04	1.11E-05 J	2.07E-06 J	3.48E-06 J	1.71E-06 J	2.54E-05 J		
2,3,4,4'-Tetrachlorobiphenyl (60)				1.46E-04 J	9.20E-05	5.18E-06 J	3.41E-05	4.33E-06 J	4.21E-05	1.19E-03	4.35E-05	2.24E-06 J	4.11E-06 J	2.79E-06 J	4.44E-05		
2,3,4,5-Tetrachlorobiphenyl (61) (70) (74) (76)				2.17E-03	6.76E-04	3.39E-05 J	2.03E-04	2.76E-05 J	2.85E-04	8.58E-03	9.99E-04	1.53E-05 J	3.82E-05 J	1.66E-05 J	4.49E-04		
2,3,4',5-Tetrachlorobiphenyl (63)				1.81E-05 J	1.15E-05 J	9.95E-07 U	3.40E-06 J	6.87E-07 U	4.56E-06 J	1.97E-04	7.91E-06 J	1.31E-06 U	1.19E-06 J	1.16E-06 U	7.40E-06 J		
2,3,4',6-Tetrachlorobiphenyl (64)				4.06E-04	1.96E-04	1.02E-05 J	5.24E-05	9.33E-06 J	7.72E-05	3.72E-03	1.69E-04	4.66E-06 J	1.01E-05 J	5.72E-06 J	1.60E-04		
2,3',4,4'-Tetrachlorobiphenyl (66)				6.72E-04	2.89E-04	1.39E-05 J	8.92E-05	1.22E-05 J	1.39E-04	4.19E-03	2.84E-04	5.62E-06 J	1.14E-05 J	6.71E-06 J	1.72E-04		
2,3',4,5-Tetrachlorobiphenyl (67)				1.75E-05 J	1.12E-05 J	9.76E-07 U	3.86E-06 J	6.68E-07 U	4.31E-06 J	1.97E-04	1.22E-05 J	1.21E-06 U	1.17E-06 J	1.14E-06 U	8.56E-06 J		
2,3',4,5'-Tetrachlorobiphenyl (68)				1.80E-05 U	2.77E-06 U	1.03E-06 U	1.92E-06 U	7.25E-07 U	1.76E-06 U	1.42E-05 J	1.94E-06 U	1.31E-06 U	1.03E-06 U	1.24E-06 U	1.46E-06 J		
2,3',5,5'-Tetrachlorobiphenyl (72)				1.70E-05 U	2.67E-06 U	9.95E-07 U	1.84E-06 U	6.87E-07 U	1.67E-06 U	2.74E-05	4.01E-06 J	1.25E-06 U	1.01E-06 U	1.20E-06 U	2.00E-06 J		
2,3',5',6-Tetrachlorobiphenyl (73)				3.44E-05 J	9.14E-06 J	1.51E-06 U	3.23E-06 J	1.15E-06 U	3.56E-06 J	1.10E-04	1.06E-05 J	1.74E-06 U	1.34E-06 J	1.42E-06 U	5.83E-06 J		
3,3',4,4'-Tetrachlorobiphenyl (77)				1.82E-04 J	1.05E-04	5.26E-06 J	5.27E-05	3.03E-06 J	4.20E-05	5.22E-04	2.07E-04	1.58E-06 J	3.87E-06 J	2.19E-06 J	2.75E-05		
3,3',4,5-Tetrachlorobiphenyl (78)				1.95E-05 U	2.81E-06 U	1.07E-06 U	1.98E-06 U	7.44E-07 U	1.80E-06 U	2.50E-06 U	2.07E-06 U	1.40E-06 U	1.07E-06 U	1.30E-06 U	1.23E-06 U		
3,3',4,5'-Tetrachlorobiphenyl (79)				6.41E-05 J	1.08E-05 J	9.18E-07 U	3.59E-06 J	6.30E-07 U	5.85E-06 J	5.54E-05	4.83E-05	1.23E-06 U	9.25E-07 U	1.11E-06 U	6.94E-06 J		
3,3',5,5'-Tetrachlorobiphenyl (80)				1.63E-05 U	2.42E-06 U	9.37E-07 U	1.73E-06 U	6.49E-07 U	1.58E-06 U	2.13E-06 U	1.76E-06 U	1.19E-06 U	9.25E-07 U	1.11E-06 U	1.06E-06 U		
3,4,4',5-Tetrachlorobiphenyl (81)				2.19E-05 U	5.27E-06 J	1.30E-06 U	2.36E-06 U	8.78E-07 U	2.16E-06 U	1.46E-05 J	6.91E-06 J	1.48E-06 U	1.11E-06 U	1.38E-06 U	1.29E-06 U		
2,2',3,3',4-Pentachlorobiphenyl (82)				6.80E-04	1.30E-04	5.55E-06 U	4.10E-05	2.08E-06 J	6.33E-05	7.46E-04	5.51E-04	2.22E-06 U	9.27E-06 J	1.63E-06 U	8.51E-05		

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013
2,2',3,3',5-Pentachlorobiphenyl (83)				3.44E-04	7.77E-05	2.43E-06 J	1.76E-05 J	2.56E-06 J	4.04E-05	2.43E-04	1.90E-04	2.22E-06 U	5.70E-06 J	1.61E-06 U	3.64E-05		
2,2',3,3',6-Pentachlorobiphenyl (84)				1.40E-03	2.67E-04	9.22E-06 J	5.16E-05	8.55E-06 J	1.25E-04	1.29E-03	8.66E-04	4.90E-06 U	3.20E-05	3.57E-06 J	1.97E-04		
2,2',3,4,4'-Pentachlorobiphenyl (85) (116) (117)				1.00E-03	1.72E-04	9.37E-06 J	6.10E-05	4.83E-06 J	9.67E-05	9.90E-04	7.65E-04	1.66E-06 U	1.18E-05 J	2.13E-06 J	1.10E-04		
2,2',3,4,5-Pentachlorobiphenyl (86)(87)(97)(109)(119)(125)				4.02E-03	8.52E-04	2.93E-05 J	1.99E-04	1.58E-05 J	3.41E-04	3.93E-03	3.29E-03	1.10E-05 J	5.57E-05 J	1.01E-05 J	5.26E-04		
2,2',3,4,6-Pentachlorobiphenyl (88) (91)				6.31E-04	1.25E-04	4.13E-06 U	2.36E-05 J	4.66E-06 J	5.83E-05	6.96E-04	4.02E-04	1.95E-06 U	1.47E-05 J	1.49E-06 U	9.28E-05		
2,2',3,4,6'-Pentachlorobiphenyl (89)				4.33E-05 J	1.07E-05 J	1.40E-06 U	3.42E-06 U	1.24E-06 U	3.76E-06 J	7.31E-05	2.35E-05	2.01E-06 U	1.71E-06 J	1.51E-06 U	6.63E-06 J		
2,2',3,4',5-Pentachlorobiphenyl (90) (101) (113)				5.06E-03	9.95E-04	3.16E-05 J	3.25E-04	2.13E-05 J	3.91E-04	4.24E-03	4.33E-03	1.07E-05 J	7.10E-05	1.14E-05 J	6.62E-04		
2,2',3,5,5'-Pentachlorobiphenyl (92)				8.70E-04	1.70E-04	5.18E-06 J	4.02E-05	3.65E-06 J	7.71E-05	7.23E-04	6.89E-04	1.99E-06 U	1.49E-05 J	2.10E-06 J	1.21E-04		
2,2',3,5,6-Pentachlorobiphenyl (93) (100)				2.30E-05 U	4.94E-06 J	1.32E-06 U	3.23E-06 U	1.18E-06 U	2.69E-06 U	4.38E-05	1.68E-06 U	1.97E-06 U	1.52E-06 J	1.47E-06 U	1.69E-06 J		
2,2',3,5,6'-Pentachlorobiphenyl (94)				2.69E-05 U	3.44E-06 J	1.57E-06 U	3.84E-06 U	1.39E-06 U	3.20E-06 U	3.32E-05	1.04E-05 J	2.18E-06 U	1.23E-06 U	1.71E-06 U	3.25E-06 J		
2,2',3,5',6-Pentachlorobiphenyl (95)				3.77E-03	6.54E-04	2.15E-05	1.67E-04	3.77E-05	3.11E-04	3.16E-03	2.34E-03	1.05E-05 J	9.62E-05	9.43E-06 J	5.53E-04		
2,2',3,6,6'-Pentachlorobiphenyl (96)				2.27E-05 J	5.08E-06 J	4.59E-07 U	1.11E-06 J	3.24E-07 U	1.87E-06 J	4.45E-05	1.20E-05 J	8.58E-07 U	1.19E-06 J	8.34E-07 U	4.25E-06 J		
2,2',3',4,6-Pentachlorobiphenyl (98) (102)				1.30E-04 J	2.80E-05 J	1.61E-06 U	6.41E-06 J	1.43E-06 U	1.19E-05 J	2.07E-04	7.43E-05	2.13E-06 U	3.60E-06 J	1.65E-06 U	1.83E-05 J		
2,2',4,4',5-Pentachlorobiphenyl (99)				1.78E-03	3.60E-04	1.04E-05 J	8.03E-05	6.60E-06 J	1.52E-04	2.04E-03	1.70E-03	2.69E-06 J	2.57E-05	3.78E-06 J	2.57E-04		
2,2',4,5',6-Pentachlorobiphenyl (103)				2.11E-05 U	3.27E-06 J	1.21E-06 U	2.94E-06 U	1.07E-06 U	2.45E-06 U	2.18E-05	1.15E-05 J	1.74E-06 U	1.21E-06 J	1.30E-06 U	3.10E-06 J		
2,2',4,6,6'-Pentachlorobiphenyl (104)				7.47E-06 U	1.19E-06 U	5.17E-07 U	5.95E-07 U	3.82E-07 U	7.78E-07 U	1.28E-06 U	8.51E-07 U	9.17E-07 U	9.46E-07 J	8.73E-07 U	5.19E-07 U		
2,3,3',4,4'-Pentachlorobiphenyl (105)				2.52E-03	5.83E-04	2.43E-05	1.88E-04	1.14E-05 J	2.25E-04	2.57E-03	2.14E-03	6.65E-06 J	2.62E-05	5.61E-06 J	2.77E-04		
2,3,3',4,5-Pentachlorobiphenyl (106)				2.54E-05 U	3.65E-06 U	1.34E-06 U	2.69E-06 U	1.05E-06 U	2.11E-06 U	3.12E-06 U	2.65E-06 U	1.83E-06 U	1.03E-06 U	1.34E-06 U	1.50E-06 U		
2,3,3',4',5-Pentachlorobiphenyl (107)				3.02E-04	7.02E-05	2.56E-06 J	2.10E-05	1.22E-06 J	2.85E-05	2.98E-04	2.93E-04	1.56E-06 U	3.19E-06 J	1.14E-06 U	3.51E-05		
2,3,3',4,5'-Pentachlorobiphenyl (108)(124)				2.43E-04 J	5.08E-05	1.93E-06 U	1.45E-05 J	1.05E-06 U	1.95E-05 J	2.06E-04	2.11E-04	1.83E-06 U	3.50E-06 J	1.36E-06 U	2.72E-05 J		
2,3,3',4',6-Pentachlorobiphenyl (110)(115)				8.19E-03	1.78E-03	5.74E-05	4.30E-04	3.50E-05 J	8.18E-04	7.06E-03	7.94E-03	1.90E-05 J	1.35E-04	1.64E-05 J	1.12E-03		
2,3,3',5,5'-Pentachlorobiphenyl (111)				1.92E-05 U	1.81E-06 U	1.05E-06 U	2.57E-06 U	9.35E-07 U	2.16E-06 U	2.13E-06 U	2.21E-06 U	1.62E-06 U	8.43E-07 U	1.18E-06 U	1.02E-06 U		
2,3,3',5,6-Pentachlorobiphenyl (112)				2.01E-05 U	1.85E-06 U	1.09E-06 U	2.67E-06 U	9.73E-07 U	2.22E-06 U	1.92E-06 U	1.24E-06 U	1.46E-06 U	8.23E-07 U	1.14E-06 U	9.80E-07 U		
2,3,4,4',5-Pentachlorobiphenyl (114)				1.12E-04 J	2.41E-05	1.66E-06 U	7.87E-06 J	1.30E-06 U	9.21E-06 J	1.21E-04	6.85E-05	2.03E-06 U	1.71E-06 J	1.49E-06 U	1.16E-05 J		
2,3',4,4',5-Pentachlorobiphenyl (118)				5.50E-03	1.24E-03	4.82E-05	3.84E-04	2.20E-05	4.50E-04	4.95E-03	5.13E-03	1.15E-05 J	5.81E-05	1.05E-05 J	6.17E-04		
2,3',4,5,5'-Pentachlorobiphenyl (120)				1.73E-05 U	3.02E-06 J	9.57E-07 U	2.32E-06 U	8.40E-07 U	1.93E-06 U	6.75E-06 J	1.21E-05 J	1.42E-06 U	7.40E-07 U	1.03E-06 U	1.25E-06 J		
2,3',4,5',6-Pentachlorobiphenyl (121)				1.94E-05 U	1.87E-06 U	1.07E-06 U	2.63E-06 U	9.54E-07 U	2.18E-06 U	2.09E-06 U	1.35E-06 U	1.58E-06 U	8.64E-07 U	1.18E-06 U	1.02E-06 U		
2',3,3',4,5-Pentachlorobiphenyl (122)				5.50E-05 J	1.22E-05 J	1.36E-06 U	5.05E-06 J	1.09E-06 U	5.00E-06 J	6.28E-05	5.36E-05	1.87E-06 U	1.21E-06 J	1.36E-06 U	7.19E-06 J		
2',3,4,4',5-Pentachlorobiphenyl (123)				6.25E-05 J	1.68E-05 J	1.59E-06 U	5.76E-06 J	1.24E-06 U	8.25E-06 J	7.96E-05	7.83E-05	1.99E-06 U	1.11E-06 U	1.47E-06 U	1.04E-05 J		
3,3',4,4',5-Pentachlorobiphenyl (126)				5.71E-05 J	2.45E-05	2.03E-06 U	1.64E-05 J	1.51E-06 U	5.60E-06 J	4.41E-05	9.91E-05	2.38E-06 U	1.27E-06 U	1.73E-06 U	4.75E-06 J		
3,3',4,5,5'-Pentachlorobiphenyl (127)				2.46E-05 U	3.58E-06 U	1.36E-06 U	2.75E-06 U	1.09E-06 U	2.18E-06 U	9.17E-06 J	1.46E-05 J	1.83E-06 U	1.01E-06 U	1.32E-06 U	1.48E-06 U		
2,2',3,3',4,4'-Hexachlorobiphenyl (128)(166)				1.44E-03	3.29E-04	1.14E-05 J	1.23E-04	6.22E-06 J	1.48E-04	1.12E-03	1.83E-03	3.76E-06 J	2.04E-05 J	3.22E-06 J	1.79E-04		
2,2',3,3',4,5-Hexachlorobiphenyl (129)(138)(163)				8.43E-03	2.13E-03	8.81E-05	1.58E-03	5.30E-05 J	9.02E-04	6.99E-03	1.35E-02	2.11E-05 J	1.36E-04	1.76E-05 J	1.09E-03		
2,2',3,3',4,5'-Hexachlorobiphenyl (130)				5.00E-04	1.22E-04	4.88E-06 J	4.39E-05	3.17E-06 J	5.24E-05	3.75E-04	6.60E-04	2.09E-06 U	8.76E-06 J	1.63E-06 U	6.09E-05		
2,2',3,3',4,6-Hexachlorobiphenyl (131)				1.25E-04 J	2.74E-05	2.60E-06 U	7.24E-06 J	1.66E-06 U	1.10E-05 J	8.63E-05	1.20E-04	2.36E-06 U	3.17E-06 J	1.94E-06 U	1.70E-05 J		
2,2',3,3',4,6'-Hexachlorobiphenyl (132)				2.86E-03	6.93E-04	2.43E-05	3.44E-04	1.89E-05 J	2.75E-04	2.11E-03	3.58E-03	6.83E-06 J	5.53E-05	6.15E-06 J	3.54E-04		
2,2',3,3',5,5'-Hexachlorobiphenyl (133)				8.28E-05 J	1.97E-05 J	2.05E-06 U	1.08E-05 J	1.30E-06 U	8.83E-06 J	5.69E-05	1.03E-04	1.91E-06 U	1.99E-06 J	1.53E-06 U	9.65E-06 J		
2,2',3,3',5,6-Hexachlorobiphenyl (134)				3.91E-04	9.41E-05	2.62E-06 J	3.65E-05	2.65E-06 U	3.48E-05	3.07E-04	5.08E-04	2.46E-06 U	9.15E-06 J	1.96E-06 U	5.98E-05		
2,2',3,3',5,6'-Hexachlorobiphenyl (135)(151)				1.74E-03	4.48E-04	1.64E-05 J	5.83E-04	2.38E-05 J	1.63E-04	1.28E-03	2.44E-03	6.81E-06 J	4.97E-05	4.72E-06 J	2.15E-04		
2,2',3,3',6,6'-Hexachlorobiphenyl (136)				7.20E-04	1.53E-04	5.15E-06 J	1.25E-04	1.21E-05 J	5.65E-05	4.64E-04	7.70E-04	2.73E-06 J	1.93E-05 J	1.67E-06 J	8.49E-05		
2,2',3,4,4',5-Hexachlorobiphenyl (137)				4.80E-04	1.04E-04	3.44E-06 J	2.48E-05	2.29E-06 J	4.88E-05	3.61E-04	4.52E-04	1.99E-06 U	6.17E-06 J	1.53E-06 U	5.48E-05		
2,2',3,4,4',6-Hexachlorobiphenyl (139)(140)				1.23E-04 J	3.09E-05 J	1.93E-06 U	7.51E-06 J	1.24E-06 U	1.20E-05 J	9.00E-05	1.40E-04	1.83E-06 U	2.92E-06 J	1.46E-06 U	1.51E-05 J		
2,2',3,4,5,5'-Hexachlorobiphenyl (141)				1.18E-03	3.58E-04	1.35E-05 J	3.58E-04	8.40E-06 J	1.21E-04	1.05E-03	2.17E-03	3.82E-06 J	2.38E-05	3.05E-06 J	1.58E-04		
2,2',3,4,5,6-Hexachlorobiphenyl (142)				3.69E-05 U	8.54E-06 U	2.28E-06 U	4.26E-06 U	1.45E-06 U	3.36E-06 U	3.33E-06 U	2.73E-06 U	2.03E-06 U	1.01E-06 U	1.63E-06 U	1.50E-06 U		
2,2',3,4,5,6'-Hexachlorobiphenyl (143)				3.52E-05 U	7.98E-06 U	2.12E-06 U	3.99E-06 U	1.36E-06 U	3.14E-06 U	1.42E-05 J	3.48E-05	1.87E-06 U	9.66E-07 U	1.55E-06 U	9.61E-06 J		
2,2',3,4,5',6-Hexachlorobiphenyl (144)				2.72E-04	6.43E-05	2.31E-06 J	7.04E-05	2.98E-06 J	2.63E-05	2.04E-04	3.63E-04	1.21E-06 J	6.99E-06 J	1.09E-06 U	3.31E-05		
2,2',3,4,6,6'-Hexachlorobiphenyl (145)				6.57E-06 U	1.21E-06 U	7.46E-07 U	8.45E-07 U	4.20E-07 U	7.56E-07 U	1.94E-06 J	2.13E-06 J	1.01E-06 U	5.96E-07 U	9.70E-07 U	5.77E-07 U		
2,2',3,4',5,5'-Hexachlorobiphenyl (146)				7.28E-04	1.99E-04	7.67E-06 J	1.55E-04	4.91E-06 J	8.41E-05	5.28E-04	1.07E-03	1.83E-06 J	1.32E-05 J	1.61E-06 J	8.77E-05		
2,2',3,4',5,6-Hexachlorobiphenyl (147)(149)				4.57E-03	1.28E-03	4.07E-05	1.23E-03	4.24E-05	4.51E-04	3.42E-03	6.23E-03	1.32E-05 J	1.12E-04	9.80E-06 J	5.83E-04		
2,2',3,4',5,6'-Hexachlorobiphenyl (148)				7.51E-06 U	1.42E-06 J	8.61E-07 U	1.02E-06 U	4.96E-07 U	8.89E-07 U	3.68E-06 J	7.22E-06 J	1.15E-06 U	6.79E-07 U	1.09E-06 U	6.54E-07 U		
2,2',3,4',6,6'-Hexachlorobiphenyl (150)				6.51E-06 U	3.15E-06 J	7.46E-07 U	1.44E-06 J	4.20E-07 U	7.56E-07 U	5.41E-06 J	1.29E-05 J	9.75E-07 U	5.76E-07 U	9.31E-07 U	8.46E-07 J		
2,2',3,5,6,6'-Hexachlorobiphenyl (152)				5.73E-06 U	1.06E-06 U	6.50E-07 U	7.30E-07 U	3.63E-07 U	6.67E-07 U	3.72E-06 J	4.47E-06 J	8.78E-07 U	5.14E-07 U	8.54E-07 U	7.11E-07 J		
2,2',4,4',5,5'-Hexachlorobiphenyl (153)(168)				4.76E-03	1.42E-03	5.39E-05	1.76E-03	3.43E-05 J	4.93E-04	4.01E-03	8.23E-03	1.28E-05 J	8.36E-05	1.08E-05 J	6.09E-04		
2,2',4,4',5,6'-Hexachlorobiphenyl (154)				4.50E-05 J	1.31E-05 J	7.65E-07 U	6.16E-06 J	6.87E-07 J	3.98E-06 J	3.11E-05	7.18E-05	1.05E-06 U	1.27E-06 J	9.70E-07 U	5.17E-06 J		
2,2',4,4',6,6'-Hexachlorobiphenyl (155)				5.48E-06 U	1.04E-06 U	6.70E-07 U	8.26E-07 U	4.01E-07 U	7.34E-07 U	7.85E-07 U	6.58E-07 U	8.19E-07 U	5.14E-07 U	7.76E-07 U	4.81E-07 U		
2,3,3',4,4',5-Hexachlorobiphenyl (156)*157)				1.19E-03	2.88E-04	1.15E-05 J	1.25E-04	5.69E-06 J	1.13E-04	8.70E-04	1.40E-03	3.32E-06 J	1.28E-05 J	2.44E-06 J	1.22E-04		
2,3,3',4,4',6-Hexachlorobiphenyl (158)				7.77E-04	2.04E-04	9.28E-06 J	1.24E-04	4.24E-06 J	8.50E-05	6.51E-04	1.21E-03	2.11E-06 J	1.30E-05 J	1.94E-06 U	9.94E-05		
2,3,3',4,5,5'-Hexachlorobiphenyl (159)				3.78E-05 J	3.19E-06 U	1.22E-06 U	1.94E-06 U	8.40E-07 U	1.40E-06 U	2.64E-06 U	2.94E-06 U	1.27E-06 U	6.37E-07 U	9.31E-07 U	1.00E-06 U		
2,3,3',4,5,6-Hexachlorobiphenyl (160)				3.15E-05 U	7.04E-06 U	1.97E-06 U	3.71E-06 U	1.26E-06 U	2.91E-06 U	2.83E-06 U	2.32E-06 U	1.74E-06 U	8.43E-07 U	1.36E-06 U	1.25E-06 U		
2,3,3',4,5',6-Hexachlorobiphenyl (161)				2.65E-05 U	5.96E-06 U	1.59E-06 U	2.98E-06 U	1.01E-06 U	2.33E-06 U	2.29E-06 U	1.88E-06 U	1.40E-06 U	6.79E-07 U	1.11E-06 U	1.02E-06 U		
2,3,3',4',5,5'-Hexachlorobiphenyl (162)				3.84E-05 J	3.42E-06 U	1.34E-06 U	2.11E-06 U	9.16E-07 U	4.11E-06 J	2.18E-05	4.62E-05	1.37E-06 U	6.79E-07 U	1.01E-06 U	4.15E-06 J		
2,3,3',4',5',6-Hexachlorobiphenyl (164)				4.85E-04	1.29E-04	5.18E-06 J	9.08E-05	3.23E-06 J	5.04E-05	3.83E-04	8.43E-04	1.46E-06 U	1.01E-05 J	1.42E-06 J	6.37E-05		
2,3,3',5,5',6-Hexachlorobiphenyl (165)				2.93E-05 U	6.44E-06 U	1.74E-06 U	3.28E-06 U	1.11E-06 U	2.56E-06 U	2.77E-06 U	2.26E-06 U	1.68E-06 U	8.02E-07 U	1.32E-06 U	1.21E-06 U		
2,3',4,4',5,5'-Hexachlorobiphenyl (167)				3.72E-04	1.01E-04	4.57E-06 J	4.53E-05	1.89E-06 J	4.16E-05	2.64E-04	5.08E-04	1.27E-06 U	4.79E-06 J	1.03E-06 J	3.91E-05		
3,3',4,4',5,5'-Hexachlorobiphenyl (169)				2.65E-05 U	9.08E-06 J	1.86E-06 U	1.49E-05 J	1.13E-06 U	2.98E-06 J	9.85E-06 J	2.67E-05	1.50E-06 U	7.20E-07 U	1.09E-06 U	1.15E-06 U		
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)				1.23E-03	4.83E-04	2.04E-05	9.77E-04	1.44E-05 J	1.66E-04	1.12E-03	3.14E-03	4.72E-06 J	1.74E-05 J	3.43E-06 J	1.49E-04		

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)(173)				3.73E-04 J	1.39E-04	5.74E-06 J	2.74E-04	4.37E-06 J	4.78E-05	3.38E-04	8.77E-04	1.76E-06 U	8.29E-06 J	1.44E-06 J	4.67E-05		
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)				2.13E-04	9.45E-05	3.98E-06 J	1.92E-04	2.60E-06 J	2.94E-05	1.91E-04	5.16E-04	1.74E-06 U	3.80E-06 J	1.28E-06 U	2.56E-05		
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)				1.15E-03	4.97E-04	1.87E-05 J	1.46E-03	1.60E-05 J	1.49E-04	1.04E-03	2.65E-03	5.11E-06 J	2.65E-05	4.31E-06 J	1.46E-04		
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)				5.12E-05 J	2.16E-05	1.13E-06 U	4.77E-05	8.97E-07 U	5.96E-06 J	4.54E-05	1.11E-04	1.17E-06 U	1.60E-06 J	1.07E-06 U	6.88E-06 J		
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)				1.27E-04 J	5.18E-05	1.61E-06 J	1.43E-04	1.87E-06 J	1.49E-05 J	1.11E-04	2.53E-04	8.97E-07 U	4.07E-06 J	8.34E-07 U	1.55E-05 J		
2,2',3,3',4',5,6-Heptachlorobiphenyl (177)				6.30E-04	2.79E-04	1.02E-05 J	7.05E-04	8.44E-06 J	8.54E-05	5.92E-04	1.63E-03	2.40E-06 J	1.42E-05 J	2.35E-06 J	7.95E-05		
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)				2.04E-04	9.66E-05	3.44E-06 J	2.87E-04	3.17E-06 J	2.89E-05	1.82E-04	4.56E-04	1.23E-06 U	5.16E-06 J	1.24E-06 J	2.51E-05		
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)				3.83E-04	1.60E-04	5.03E-06 J	5.34E-04	7.67E-06 J	4.43E-05	3.37E-04	7.60E-04	2.09E-06 J	1.17E-05 J	1.98E-06 J	4.72E-05		
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)(193)				2.56E-03	1.22E-03	4.92E-05	3.73E-03	3.31E-05 J	3.72E-04	2.49E-03	6.58E-03	1.04E-05 J	4.19E-05	8.42E-06 J	3.16E-04		
2,2',3,4,4',5,6-Heptachlorobiphenyl (181)				2.54E-05 U	4.73E-06 U	1.38E-06 U	2.30E-06 U	1.18E-06 U	2.85E-06 U	1.31E-05 J	2.26E-05	1.81E-06 U	6.58E-07 U	1.34E-06 U	2.23E-06 J		
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)				9.51E-06 U	3.25E-06 J	1.13E-06 U	2.80E-06 J	8.97E-07 U	1.13E-06 U	5.76E-06 J	1.98E-05	1.17E-06 U	5.35E-07 U	1.07E-06 U	1.23E-06 J		
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)(185)				7.97E-04	3.73E-04	1.25E-05 J	1.09E-03	1.08E-05 J	1.09E-04	7.40E-04	1.78E-03	3.51E-06 J	1.92E-05 J	3.65E-06 J	9.47E-05		
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)				7.51E-06 U	2.08E-06 J	8.80E-07 U	9.41E-07 U	7.06E-07 U	8.89E-07 U	1.90E-06 J	4.49E-06 J	8.97E-07 U	4.11E-07 U	8.54E-07 U	5.96E-07 U		
2,2',3,4,5,6,6'-Heptachlorobiphenyl (186)				8.07E-06 U	2.04E-06 U	9.37E-07 U	9.99E-07 U	7.44E-07 U	9.34E-07 U	1.40E-06 U	8.32E-07 U	9.95E-07 U	4.52E-07 U	9.31E-07 U	6.54E-07 U		
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)				1.28E-03	6.06E-04	2.17E-05	2.14E-03	2.18E-05	1.73E-04	1.29E-03	3.09E-03	5.97E-06 J	3.21E-05	5.47E-06 J	1.67E-04		
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)				7.97E-06 U	2.69E-06 J	9.37E-07 U	2.38E-06 J	8.02E-07 U	1.02E-06 U	2.56E-06 J	7.80E-06 J	8.78E-07 U	4.11E-07 U	8.34E-07 U	5.77E-07 U		
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)				6.55E-05 J	2.54E-05	1.21E-06 J	2.85E-05	1.07E-06 J	8.40E-06 J	5.19E-05	1.31E-04	1.46E-06 U	9.87E-07 U	1.14E-06 U	6.42E-06 J		
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)				2.33E-04	1.00E-04	3.81E-06 J	2.56E-04	3.03E-06 J	3.51E-05	2.15E-04	6.25E-04	1.31E-06 U	3.52E-06 J	9.70E-07 J	2.77E-05		
2,3,3',4,4',5,6-Heptachlorobiphenyl (191)				4.15E-05 J	2.05E-05 J	1.07E-06 U	3.90E-05	9.35E-07 U	6.74E-06 J	4.29E-05	1.19E-04	1.27E-06 U	1.09E-06 J	9.31E-07 U	6.34E-06 J		
2,3,3',4,5,5',6-Heptachlorobiphenyl (192)				2.40E-05 U	4.27E-06 U	1.26E-06 U	2.11E-06 U	1.11E-06 U	2.62E-06 U	2.23E-06 U	1.74E-06 U	1.50E-06 U	5.35E-07 U	1.11E-06 U	8.27E-07 U		
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)				4.70E-04	2.75E-04	1.16E-05 J	1.21E-03	8.72E-06 J	8.19E-05	5.15E-04	1.07E-03	2.38E-06 U	5.80E-06 J	2.23E-06 J	5.59E-05		
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)				1.75E-04 J	9.28E-05	3.60E-06 J	4.30E-04	3.80E-06 J	2.82E-05	1.73E-04	4.31E-04	1.38E-06 U	2.47E-06 J	1.14E-06 U	2.08E-05		
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)				2.60E-04	1.38E-04	5.07E-06 J	6.19E-04	3.55E-06 J	3.81E-05	2.64E-04	5.28E-04	1.85E-06 U	3.78E-06 J	1.47E-06 J	3.00E-05		
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)(200)				8.23E-05 J	4.43E-05	1.74E-06 J	2.15E-04	1.57E-06 J	1.22E-05 J	8.55E-05	1.51E-04	9.95E-07 U	2.57E-06 J	1.14E-06 J	1.05E-05 J		
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)(199)				6.09E-04	3.33E-04	1.23E-05 J	1.55E-03	9.81E-06 J	9.10E-05	6.57E-04	1.07E-03	3.06E-06 J	9.15E-06 J	2.93E-06 J	7.03E-05		
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)				6.72E-05 J	4.23E-05	1.13E-06 J	1.60E-04	9.54E-07 J	8.72E-06 J	6.88E-05	1.05E-04	9.75E-07 U	1.75E-06 J	8.15E-07 U	8.27E-06 J		
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)				9.49E-05 J	6.37E-05	1.76E-06 J	2.73E-04	2.35E-06 J	1.59E-05 J	1.12E-04	1.46E-04	1.52E-06 J	2.20E-06 J	1.38E-06 J	1.23E-05 J		
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)				3.97E-04	2.12E-04	8.13E-06 J	9.81E-04	5.34E-06 J	5.95E-05	4.26E-04	6.94E-04	2.36E-06 J	5.33E-06 J	1.63E-06 J	4.49E-05		
2,2',3,4,4',5,6,6'-Octachlorobiphenyl (204)				1.40E-05 U	2.85E-06 U	8.42E-07 U	6.91E-07 U	6.11E-07 U	1.13E-06 U	8.88E-07 U	7.55E-07 U	9.75E-07 U	3.91E-07 U	8.15E-07 U	5.00E-07 U		
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)				3.20E-05 J	1.65E-05 J	1.49E-06 U	6.15E-05	1.05E-06 U	4.54E-06 J	2.47E-05	5.67E-05	1.19E-06 U	6.58E-07 J	9.70E-07 U	2.79E-06 J		
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)				2.85E-04	1.87E-04	5.28E-06 J	5.20E-04	4.31E-06 J	4.49E-05	3.69E-04	2.51E-04	1.52E-06 J	3.15E-06 J	1.79E-06 U	3.30E-05		
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)				4.02E-05 J	2.22E-05	1.17E-06 U	6.13E-05	7.44E-07 U	5.38E-06 J	4.17E-05	3.37E-05	9.95E-07 U	9.46E-07 J	8.54E-07 U	4.09E-06 J		
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)				7.46E-05 J	4.44E-05	1.42E-06 U	1.05E-04	1.13E-06 J	1.30E-05 J	9.56E-05	4.92E-05	1.09E-06 U	1.21E-06 J	1.03E-06 J	8.82E-06 J		
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (209)				8.73E-05 J	4.49E-05	3.19E-06 J	2.36E-05	2.40E-06 J	1.68E-05 J	9.35E-05	4.31E-05	1.68E-06 U	2.20E-06 J	1.96E-06 J	8.27E-06 J		
PCB Homologs (ug/l)																	
Monochlorobiphenyl				5.66E-05 J	2.46E-05	7.19E-06 J	6.53E-06 J	5.06E-06 J	1.12E-05 J	1.66E-04	1.62E-05 J	0.00E+00 U	5.33E-06 J	3.32E-06 J	2.60E-06 J	2.15E-04	3.70E-05
Dichlorobiphenyl				7.23E-04	4.68E-04	9.63E-05	1.48E-04	8.54E-05	1.40E-04	4.95E-03	2.44E-04	8.70E-05	1.13E-04	1.03E-04	2.39E-04	1.66E-02	1.22E-03
Trichlorobiphenyl				1.95E-03	1.07E-03	9.69E-05	4.00E-04	1.01E-04	3.63E-04	2.77E-02	4.28E-04	8.66E-05	9.70E-05	9.99E-05	9.38E-04	1.60E-01	8.00E-03
Tetrachlorobiphenyl				8.38E-03	3.18E-03	1.63E-04	9.13E-04	1.39E-04	1.32E-03	4.71E-02	3.28E-03	7.97E-05	1.90E-04	1.03E-04	2.29E-03	2.62E-01	1.10E-02
Pentachlorobiphenyl				3.68E-02	7.66E-03	2.52E-04	2.09E-03	1.77E-04	3.24E-03	3.39E-02	3.13E-02	7.20E-05	5.76E-04	7.52E-05	4.79E-03	1.97E-01	1.25E-02
Hexachlorobiphenyl				3.13E-02	8.23E-03	3.05E-04	6.87E-03	2.28E-04	3.19E-03	2.47E-02	4.63E-02	7.95E-05	5.95E-04	6.35E-05	3.96E-03	1.51E-01	1.18E-02
Heptachlorobiphenyl				9.35E-03	4.17E-03	1.57E-04	1.19E-02	1.28E-04	1.28E-03	8.80E-03	2.28E-02	3.42E-05	1.90E-04	3.33E-05	1.16E-03	5.06E-02	4.24E-03
Octachlorobiphenyl				2.19E-03	1.22E-03	4.53E-05	5.49E-03	3.61E-05	3.40E-04	2.33E-03	4.25E-03	6.94E-06 J	3.37E-05	1.08E-05 J	2.56E-04	1.36E-02	1.16E-03
Nonachlorobiphenyl				4.00E-04	2.54E-04	5.28E-06 J	6.87E-04	5.44E-06 J	6.33E-05	5.07E-04	3.34E-04	1.52E-06 J	5.31E-06 J	1.03E-06 J	4.59E-05	2.84E-03	2.77E-04
Decachlorobiphenyl				8.73E-05 J	4.49E-05	3.19E-06 J	2.36E-05	2.40E-06 J	1.68E-05 J	9.35E-05	4.31E-05	1.95E-05 U	2.20E-06 J	1.96E-06 J	8.27E-06 J	9.64E-04	8.70E-05
Total Detected PCBs (Method 1668)	6.40E-05	6.40E-06	3.00E-01	9.13E-02	2.63E-02	1.13E-03	2.85E-02	9.08E-04	9.96E-03	1.50E-01	1.09E-01	4.47E-04	1.81E-03	4.95E-04	1.37E-02	8.54E-01	5.04E-02
Phthalates (ug/l)																	
Bis(2-ethylhexyl) phthalate	2.2	0.2	5	15	0.67	0.37 J	0.46	3.3	0.47	2.3	0.45	0.19 U	0.19 U	0.19 U	0.24 J	9.1 U	22 U
Butylbenzyl phthalate	3			1.9 U	0.22 U	0.19 U	0.21 U	0.21 U	0.19 U	0.95 J	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	12 U	30 U
Dibutyl phthalate	3			1.9 U	0.22 U	0.19 U	0.21 U	0.21 U	0.19 U	0.78 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	12 U	30 U
Diethyl phthalate	3			1.9 U	0.22 U	0.19 U	0.21 U	0.21 U	0.19 U	0.78 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	12 U	30 U
Dimethyl phthalate	3			1.9 U	0.22 U	0.19 U	0.21 U	0.21 U	0.19 U	0.78 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	12 U	30 U
Di-n-octyl phthalate	3			1.9 U	0.22 U	0.19 U	0.21 U	0.21 U	0.19 U	0.78 U	0.19 U	0.19 U	0.19 U	0.19 U	0.19 U	12 U	30 U
Pesticides (ug/l)																	
2,4'-DDD	3.10E-04	3.10E-05														9.71E-03 U	9.71E-03 U
2,4'-DDE	2.20E-04	1.80E-05														9.71E-03 U	9.71E-03 U
2,4'-DDT	2.00E-01	2.20E-05														9.71E-03 U	9.71E-03 U
4,4'-DDD	3.10E-04	3.10E-05														9.71E-03 U	9.71E-03 U
4,4'-DDE	2.20E-04	1.80E-05														9.71E-03 U	9.71E-03 U
4,4'-DDT	2.20E-04	2.20E-05														2.91E-02 U	9.71E-03 U
Total DDx		1.00E-02															
Aldrin	5.00E-05	7.70E-07														9.71E-03 U	9.71E-03 U
alpha-BHC	4.90E-03															9.71E-03 U	9.71E-03 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013
beta-BHC	1.70E-02															9.71E-03 U	9.71E-03 U
cis-Chlordane	8.10E-04	8.10E-05														9.71E-03 U	9.71E-03 U
cis-Nonachlor	1.90E-01															9.71E-03 U	9.71E-03 U
Chlordane Technical		8.10E-05														3.65E-01 U	3.65E-01 U
delta-BHC	5.20E-02															9.71E-03 U	9.71E-03 U
Dieldrin	5.40E-05															9.71E-03 U	9.71E-03 U
Endosulfan I	5.10E-02															4.85E-02 U	7.77E-02 U
Endosulfan II	5.10E-02															9.71E-03 U	9.71E-03 U
Endosulfan sulfate	8.90E+01															9.71E-03 U	9.71E-03 U
Endrin	3.60E-02															9.71E-03 U	9.71E-03 U
Endrin aldehyde																9.71E-03 U	9.71E-03 U
Endrin ketone																9.71E-03 U	9.71E-03 U
gamma-BHC	3.70E-02															9.71E-03 U	9.71E-03 U
Heptachlor	7.90E-05															9.71E-03 U	9.71E-03 U
Heptachlor epoxide	3.90E-05															9.71E-03 U	9.71E-03 U
Hexachlorobenzene	2.90E-04	2.90E-05														2.91E-02 U	2.91E-02 U
Hexachlorobutadiene	8.60E-01															9.71E-03 U	9.71E-03 U
Hexachloroethane	3.30E+00																
Methoxychlor	3.00E-02															2.91E-02 U	2.91E-02 U
Mirex	NC															9.71E-03 U	9.71E-03 U
Oxychlordane	1.90E-01	8.10E-05														9.71E-03 U	9.71E-03 U
Toxaphene	2.00E-04															3.65E-01 U	3.65E-01 U
trans-Chlordane	8.10E-04	8.10E-05														9.71E-03 U	9.71E-03 U
trans-Nonachlor	1.90E-01															9.71E-03 U	9.71E-03 U
Dioxins (ug/l)																	
1,2,3,4,6,7,8-HeptaCDD				9.30E-04	1.46E-05 J	6.77E-06 J	1.81E-05 J	1.78E-05 J	7.54E-05	8.32E-05	1.87E-05 J	5.98E-06 J	2.33E-05 J	1.23E-05 J	3.18E-05 J	4.94E-04	1.65E-04
1,2,3,4,6,7,8-HeptaCDF				1.81E-04	4.61E-06 J	1.23E-06 J	9.80E-06 J	1.08E-05 J	6.08E-06 J	1.27E-05 J	9.52E-06 J	1.01E-06 J	2.84E-06 J	1.44E-06 J	6.09E-06 J	8.30E-05 U	4.80E-05 U
1,2,3,4,7,8,9-HeptaCDF				1.33E-05 J	7.70E-07 U	5.40E-07 U	4.79E-07 J	5.19E-07 U	6.66E-07 U	1.07E-06 U	1.35E-06 U	7.26E-07 U	8.52E-07 U	7.55E-07 U	9.10E-07 U	6.80E-06 J	3.80E-06 J
1,2,3,4,7,8-HexaCDD				1.50E-05 J	1.04E-06 U	7.09E-07 U	7.36E-07 U	7.43E-07 U	1.72E-06 J	1.34E-06 J	9.23E-07 J	8.37E-07 U	9.27E-07 J	9.03E-07 U	8.43E-07 J	6.10E-06 J	3.20E-06 J
1,2,3,4,7,8-HexaCDF				1.30E-05 J	5.60E-07 J	5.05E-07 U	4.60E-07 J	5.38E-07 U	6.18E-07 J	1.34E-06 J	1.33E-06 J	3.86E-07 U	5.17E-07 U	5.32E-07 U	7.51E-07 U	1.08E-05 J	3.30E-06 J
1,2,3,6,7,8-HexaCDD				5.59E-05	9.65E-07 U	7.50E-07 J	1.25E-06 J	8.04E-07 J	2.47E-06 J	4.93E-06 J	1.23E-06 J	7.80E-07 U	1.42E-06 J	8.40E-07 U	1.49E-06 J	2.05E-05 J	6.90E-06 J
1,2,3,6,7,8-HexaCDF				1.17E-05 J	5.60E-07 J	4.77E-07 U	6.13E-07 J	9.19E-07 J	6.98E-07 J	1.58E-06 J	1.15E-06 J	3.63E-07 U	4.87E-07 U	5.01E-07 U	7.09E-07 U	5.40E-06 J	1.98E-06 J
1,2,3,7,8,9-HexaCDD				3.03E-05 J	1.02E-06 U	7.00E-07 U	1.13E-06 J	8.42E-07 J	2.19E-06 J	3.43E-06 J	1.44E-06 J	8.25E-07 U	1.64E-06 J	8.89E-07 U	1.23E-06 J	1.45E-05 J	7.30E-06 J
1,2,3,7,8,9-HexaCDF				5.39E-06 J	6.12E-07 U	5.94E-07 U	5.20E-07 U	6.32E-07 U	5.55E-07 U	7.70E-07 U	4.67E-07 U	4.52E-07 U	6.07E-07 U	6.25E-07 U	8.81E-07 U	1.30E-06 U	1.50E-06 U
1,2,3,7,8-PentaCDD				9.26E-06 J	7.47E-07 J	5.80E-07 U	5.18E-07 U	4.40E-07 J	9.97E-07 J	1.67E-06 J	1.71E-06 J	4.72E-07 U	6.43E-07 U	5.64E-07 U	7.47E-07 J	3.82E-06 J	1.30E-06 U
1,2,3,7,8-PentaCDF				3.31E-06 J	6.85E-07 J	5.57E-07 J	6.71E-07 J	3.02E-07 U	6.38E-07 J	8.67E-07 J	1.19E-06 J	3.24E-07 U	4.89E-07 U	6.49E-07 J	5.21E-07 U	2.80E-06 J	1.60E-06 U
2,3,4,6,7,8-HexaCDF				1.72E-05 J	5.39E-07 J	5.04E-07 U	8.44E-07 J	6.12E-07 J	9.58E-07 J	1.46E-06 J	1.88E-06 J	3.84E-07 U	5.15E-07 U	5.30E-07 U	7.49E-07 U	4.40E-06 J	1.50E-06 J
2,3,4,7,8-PentaCDF				7.43E-06 J	3.86E-07 U	4.61E-07 J	3.49E-07 U	2.76E-07 U	5.19E-07 J	1.52E-06 J	2.33E-06 J	2.97E-07 U	4.48E-07 U	5.86E-07 U	4.75E-07 U	4.80E-06 J	1.70E-06 U
2,3,7,8-TetraCDD	5.1E-09	5E-10		1.54E-06 J	5.35E-07 U	5.13E-07 U	4.16E-07 U	4.23E-07 U	5.17E-07 U	5.56E-07 U	5.21E-07 U	6.04E-07 U	6.63E-07 U	6.05E-07 U	6.03E-07 U	1.10E-06 U	1.00E-06 U
2,3,7,8-TetraCDF				2.58E-06 J	6.08E-07 U	6.03E-07 U	5.56E-07 U	4.82E-07 U	6.96E-07 U	1.10E-06 U	2.56E-06 J	5.49E-07 U	6.07E-07 U	6.66E-07 U	6.51E-07 U	6.80E-06 J	1.30E-06 U
OCDD				6.07E-03	8.17E-05 J	3.09E-05 J	9.14E-05 J	1.05E-04	7.62E-04	5.53E-04	8.88E-05 J	1.95E-05 J	7.58E-05 J	4.22E-05 J	3.12E-04	4.29E-03	1.29E-03
OCDF				3.72E-04	1.37E-05 J	2.48E-06 J	9.97E-06 J	1.32E-05 J	2.11E-05 J	3.40E-05 J	1.04E-05 J	1.71E-06 U	4.81E-06 J	3.31E-06 J	3.42E-05 J	2.05E-04	1.28E-04
HeptaCDD homologs				1.60E-03	3.26E-05 J	1.57E-05 J	3.80E-05 J	3.40E-05 J	3.29E-04	1.72E-04	3.95E-05 J	1.41E-05 J	5.42E-05	2.67E-05 J	5.97E-05	1.07E-03	3.47E-04
HeptaCDF homologs				5.04E-04	1.04E-05 J	4.25E-07 U	1.50E-05 J	1.61E-05 J	2.08E-05 J	3.36E-05 J	1.72E-05 J	5.71E-07 U	5.07E-06 J	1.46E-06 J	2.08E-05 J	1.51E-04	9.10E-05
HexaCDD homologs				3.15E-04	6.76E-06 J	4.50E-06 J	1.15E-05 J	8.04E-07 J	4.45E-05 J	3.22E-05 J	1.02E-05 J	1.59E-06 J	2.20E-05 J	8.28E-06 J	2.34E-06 J	1.50E-04	4.40E-05
HexaCDF homologs				3.63E-04	1.58E-06 J	7.88E-07 J	1.06E-05 J	9.15E-06 J	1.12E-05 J	1.74E-05 J	2.40E-05 J	5.43E-07 J	1.83E-06 J	1.01E-06 J	4.58E-06 J	1.41E-04	5.70E-05
PentaCDD homologs				5.37E-05	7.47E-07 J	5.80E-07 U	2.13E-06 J	4.40E-07 J	1.48E-06 J	1.67E-06 J	1.04E-06 J	4.72E-07 U	1.70E-06 J	8.32E-07 J	7.47E-07 J	1.29E-05 J	1.70E-06 J
PentaCDF homologs				1.50E-04	2.30E-06 J	5.57E-07 J	5.20E-06 J	1.51E-06 J	3.35E-06 J	1.66E-05 J	3.28E-05 J	2.39E-07 U	6.31E-07 J	1.18E-06 J	3.47E-07 U	7.49E-05	6.70E-06 J
TetraCDD homologs				8.18E-06 J	5.35E-07 U	5.13E-07 U	4.16E-07 U	4.23E-07 U	5.17E-07 U	7.49E-07 J	8.84E-07 J	6.04E-07 U	1.12E-06 J	6.05E-07 U	6.03E-07 U	5.40E-06 J	1.00E-06 U
TetraCDF homologs				1.76E-05	6.08E-07 U	6.03E-07 U	8.63E-07 J	4.82E-07 U	6.96E-07 U	5.32E-06 J	1.63E-05	5.49E-07 U	6.07E-07 U	6.66E-07 U	6.51E-07 U	5.56E-05	1.60E-06 U
Total Dioxin TEQ (ND=DL/2)	5.1E-09	5E-10		4.14E-05	1.70E-06	1.07E-06	1.37E-06	1.46E-06	3.41E-06	5.07E-06	4.10E-06	8.96E-07	1.55E-06	1.12E-06	2.16E-06	1.96E-05	6.34E-06
Total Dioxin TEQ (ND=0)	5.1E-09	5E-10		4.14E-05	1.15E-06	3.20E-07	7.64E-07	1.08E-06	3.09E-06	4.70E-06	3.81E-06	7.58E-08	6.84E-07	1.71E-07	1.59E-06	1.86E-05	4.53E-06
Butyltins (ug/l)																	
Butyltin ion				0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.0023 U	0.20 U	0.20 U
Dibutyltin ion				0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.0017 U	0.29 U	0.29 U
Tributyltin ion	0.072	0.063		0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.0013 U	0.19 U	0.19 U
Total Metals (ug/l)																	
Aluminum				2100	452	39 J	39 J	110	197	958	230	25 U	26 J	35 J	472	5140	7340

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	B18-D-CB3 10/13/2016	B18-F-1 10/13/2016	B18-F-2 10/13/2016	B18-F-3 10/13/2016	B18-F-4 10/13/2016	B18-F-5 10/13/2016	B18-F-6 10/13/2016	B18-F-7 10/13/2016	B18-F-R1 10/13/2016	B18-F-R2 10/13/2016	B18-F-R3 10/13/2016	B18-OF18 10/13/2016	Basin 18 SP1 1/7/2014	Basin 18 SP1 11/18/2013
Antimony	6			6.7	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	1.4	0.50 U	0.50 U	0.50 U	0.50 U	0.50 U	2.3	0.87 J
Arsenic	0.045	0.02	2	1.8	0.50 U	0.50 U	4.4	0.50 U	0.50 U	0.96 J	0.50 U	0.50 U	0.50 U	0.50 U	0.58 J	5.1	1.2
Cadmium	0.094		0.7	0.61	0.089 J	0.10 J	0.078 J	0.040 U	0.040 U	0.48	0.10 J	0.040 U	0.067 J	0.040 U	0.044 J	1.5	0.51 J
Chromium	100	100	10	10	4.5	0.60 J	2.6	0.54 J	5.2	18	1.6	0.50 U	0.50 U	0.50 U	2.6	50	41
Copper	2.7	3	60	59	5.1	2.9	18	3.1	4.9	25	8.5	1.0 J	2.2	1.0 J	4.5	86	43
Lead	0.54		50	75	2.5	0.84	2.0	0.38	2.3	33	14	0.13 J	0.42	0.62	2.3	122	32
Manganese	50	50		215	31	15	50	78	46	373	12	2.0	7.2	13	145	2230	581
Mercury	0.77		0.2	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.28	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.15	0.040 U
Nickel	16		8	5.9	2.4	0.50 J	2.7	1.7	0.77 J	3.8	0.93 J	0.50 U	0.50 U	0.50 U	1.1	15	13
Silver	0.12		0.1	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.10 J	0.10 U	0.10 U	0.10 U	0.10 U	0.10 U	0.22	0.10 U
Zinc	36	36.5	700	578	29	29	45	36	10	186	26	20	20	27	52	609	346
Dissolved Metals (ug/l)																	
Aluminum																25 U	71
Antimony	6															0.58 J	0.50 U
Arsenic	0.045	0.02	2													2.3	0.50 U
Cadmium	0.094		0.7													0.24	0.044 J
Chromium	100	100	10													0.50 U	0.52 J
Copper	2.7	3	60													6.4	6.7
Lead	0.54		50													0.26	0.29
Manganese	50															1120	42
Mercury	0.77		0.2													0.040 U	0.040 U
Nickel	16		8													2.6	1.3
Silver	0.12		0.1													0.10 U	0.10 U
Zinc	36	36.5	700													148	37
Petroleum Hydrocarbons (ug/l)																	
Gasoline				50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Diesel				98 U	106 U	95 U	94 U	95 U	98 U	106 U	95 U	95 U	96 U	97 U	95 U	485 U	485 U
Oil				564	431	209 J	545	190 U	196 U	653	190 U	190 U	192 U	194 U	190 U	2900	2970
TSS (ug/l)			70000	104000	17000	5000 U	5000	5000	5000	66000	10000	5000 U	5000 U	5000 U	5000 U	200000	300000
TOC (ug/l)				5770	2830	2140	4150	10700	4250	3340	2290	1670	1860	2320	1890	6110	5500

U - Not detected at noted detection limit
J- Estimated value

1 - Table 3-1 PH JSCS Guidance, 7/16/2007 revision
2 - Table 17 January 2017 PH ROD. Surface Water Cleanup Level.
3 - October 2010, DEQ Guidance for Evaluating Stormwater Pathway at Upland Sites, Appendix E, Tool For Evaluating Stormwater Data (12/2015 update)

Detected concentration > 10 x SLV (CL or JSCS if no CL)
Detected concentration > 100 x SLV (CL or JSCS if no CL)
Detected concentration > 1000 x SLV (CL or JSCS if no CL)

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
PAHs (ug/l)						
Acenaphthene	2.00E-01			2.34E-01 U	9.35E-02 U	9.35E-02 U
Acenaphthylene	2.00E-01			2.34E-01 U	9.35E-02 U	9.35E-02 U
Anthracene				2.34E-01 U	9.35E-02 U	9.35E-02 U
Benzo(a)anthracene	1.80E-02	1.20E-03		3.15E-01 J	1.75E-01 J	1.38E-01 J
Benzo(a)pyrene	1.80E-02	1.20E-04		6.19E-01 J	2.43E-01 J	2.00E-01 J
Benzo(b)fluoranthene	1.80E-02	1.20E-03				
Benzo(k)fluoranthene	1.80E-02	1.30E-03				
Benzo(b+k)fluoranthene	1.80E-02	1.20E-03		1.15E+00	3.39E-01	2.59E-01 J
Benzo(g,h,i)perylene	2.00E-01			4.01E-01 J	2.77E-01	2.12E-01
Chrysene	1.80E-02	1.30E-03		5.98E-01	3.20E-01	2.71E-01
Dibenzo(a,h)anthracene	1.80E-02	1.20E-04		2.34E-01 U	9.35E-02 U	9.35E-02 U
Fluoranthene	2.00E-01			6.60E-01	3.01E-01	2.15E-01
Fluorene	2.00E-01			2.34E-01 U	9.35E-02 U	9.35E-02 U
Indeno(1,2,3-cd)pyrene	1.80E-02	1.20E-03		3.63E-01 J	2.26E-01	1.65E-01 J
Naphthalene	2.00E-01	1.20E+01		5.80E-01 J	1.87E-01 U	1.87E-01 U
Phenanthrene	2.00E-01			3.02E-01 J	1.29E-01 J	1.10E-01 J
Pyrene	2.00E-01			8.14E-01	3.95E-01	2.99E-01
Total Detected CPAHs (BaP TEF)		1.20E-04		8.06E-01	3.20E-01	2.59E-01
Total Detected PAHs			1.50E+00	6.04E+00	2.41E+00	1.87E+00
PCBs (ug/l)						
Aroclor 1016	9.60E-01			1.87E-02 U	1.87E-02 U	3.74E-02 U
Aroclor 1221	3.40E-02			1.87E-02 U	1.87E-02 U	3.74E-02 U
Aroclor 1232	3.40E-02			1.87E-02 U	1.87E-02 U	3.74E-02 U
Aroclor 1242	3.40E-02			9.34E-02	4.60E-02	3.74E-02 U
Aroclor 1248	3.40E-02			1.87E-02 U	1.87E-02 U	3.74E-02 U
Aroclor 1254	3.40E-02			9.94E-02	5.12E-02	3.74E-02 U
Aroclor 1260	3.40E-02			4.53E-02	2.31E-02 J	3.74E-02 U
Total Detected PCB aroclors	6.40E-05	6.40E-06	0.3	2.38E-01	1.20E-01	0.00E+00
PCB Congeners (ug/l)						
2-MonoCB-(1)				6.52E-05 J	1.85E-05 J	6.20E-06 J
3-MonoCB-(2)				1.26E-05 J	6.00E-06 J	3.90E-06 J
4-MonoCB-(3)				4.90E-05 U	1.97E-05 J	7.50E-06 J
22'-DiCB-(4)				1.07E-03	2.55E-04	6.21E-05 J
2,3-DiCB-(5)				3.00E-05 J	8.10E-06 U	5.10E-06 U
2,3'-DiCB-(6)				4.22E-04	1.18E-04	2.30E-05 U
2,4-DiCB-(7)				6.70E-05 J	2.20E-05 J	5.30E-06 U
2,4'-DiCB-(8)				2.34E-03	6.23E-04	1.33E-04
2,5-DiCB-(9)				1.12E-04	2.90E-05 U	6.80E-06 J
2,6-DiCB-(10)				4.80E-05 J	1.83E-05 J	5.80E-06 J
3,3'-DiCB-(11)				4.85E-04	1.34E-04	8.11E-05 J
DiCB-(12)+(13)				2.70E-04	1.01E-04 J	1.80E-05 U
3,5-DiCB-(14)				1.20E-05 U	8.30E-06 U	5.10E-06 U
4,4'-DiCB-(15)				3.46E-03	1.45E-03	2.87E-04
22'3-TriCB-(16)				9.90E-05	1.33E-03	2.07E-04
22'4-TriCB-(17)				3.09E-03	1.04E-03	1.68E-04
TriCB-(18)+(30)				6.21E-03	2.19E-03	3.60E-04
22'6-TriCB-(19)				7.73E-04	2.95E-04	7.51E-05 J
TriCB-(20) + (28)				1.21E-02	4.61E-03	7.70E-04
TriCB-(21)+(33)				6.14E-03	1.93E-03	2.80E-04
234'-TriCB-(22)				4.29E-03	1.63E-03	2.42E-04
235-TriCB-(23)				1.07E-05 J	4.90E-06 U	4.80E-06 U
236-TriCB-(24)				3.39E-03	3.74E-05 J	6.60E-06 J
23'4-TriCB-(25)				8.12E-04	3.01E-04	4.50E-05 U
TriCB-(26)+(29)				1.87E-03	6.30E-04	9.35E-05 J
23'6-TriCB-(27)				4.78E-04	2.33E-04	5.21E-05 J
24'5-TriCB-(31)				9.56E-03	2.99E-03	4.53E-04
24'6-TriCB-(32)				2.30E-03	1.02E-03	1.98E-04
23'5'-TriCB-(34)				2.50E-05 U	7.40E-06 U	4.50E-06 U
33'4-TriCB-(35)				1.70E-04	7.45E-05 J	1.10E-05 U
33'5-TriCB-(36)				2.20E-06 U	4.10E-06 U	4.00E-06 U
344'-TriCB-(37)				4.17E-03	1.80E-03	2.58E-04
345-TriCB-(38)				2.50E-06 U	4.80E-06 U	4.70E-06 U
34'5-TriCB-(39)				4.15E-05 J	2.27E-05 J	4.30E-06 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
TetraCB-(40)+(41)+(71)				7.46E-03	3.79E-03	6.20E-04
22'34'-TetraCB-(42)				4.29E-03	1.90E-03	3.10E-04
22'35-TetraCB-(43)				6.52E-04	2.31E-04	3.78E-05 J
TetraCB-(44)+(47)+(65)				1.32E-02	6.20E-03	1.04E-03
TetraCB-(45)+(51)				2.44E-03	1.18E-03	2.50E-04
22'36'-TetraCB-(46)				8.96E-04	4.47E-04	9.90E-05
22'45-TetraCB-(48)				2.81E-03	1.23E-03	1.73E-04
TetraCB-(49)+TetraCB-(69)				7.55E-03	3.46E-03	5.60E-04
TetraCB-(50)+(53)				1.69E-03	8.70E-04	2.00E-04
22'55'-TetraCB-(52)				1.37E-02	5.96E-03	1.09E-03
22'66'-TetraCB-(54)				2.60E-05 J	1.06E-05 J	3.60E-06 U
233'4-TetraCB-(55)				8.10E-05 U	5.35E-05 J	9.50E-06 J
233'4'-Tetra CB(56)				3.55E-03	1.67E-03	2.56E-04
233'5-TetraCB-(57)				7.30E-06 U	1.63E-05 J	5.80E-06 U
233'5'-TetraCB-(58)				2.00E-04 U	6.40E-06 U	5.90E-06 U
TetraCB-(59)+(62)+(75)				1.15E-03	6.10E-04	1.14E-04 J
2344'-TetraCB -(60)				1.84E-03	8.24E-04	1.24E-04
TetraCB-(61)+(70)+(74)+(76)				1.49E-02	6.27E-03	9.00E-04
234'5-TetraCB-(63)				2.58E-04	1.17E-04	1.63E-05 J
234'6-TetraCB-(64)				6.33E-03	3.18E-03	5.74E-04
23'44'-TetraCB-(66)				7.01E-03	3.00E-03	4.70E-04
23'45-TetraCB-(67)				2.78E-04	1.26E-04	1.73E-05 J
23'45'-TetraCB-(68)				2.39E-05 J	9.60E-06 J	5.20E-06 U
23'55'-TetraCB-(72)				4.86E-05 J	1.96E-05 J	5.50E-06 U
23'5'6-TetraCB-(73)				4.30E-06 U	5.20E-06 U	5.30E-06 U
33'44'-TetraCB-(77)				7.88E-04	3.82E-04	7.06E-05 J
33'45-TetraCB-(78)				7.20E-06 U	6.30E-06 U	5.80E-06 U
33'45'-TetraCB(79)				8.50E-05 U	4.92E-05 J	7.40E-06 U
33'55'-TetraCB-(80)				6.70E-06 U	5.80E-06 U	5.30E-06 U
344'5-TetraCB-(81)				1.90E-05 U	1.20E-05 U	7.10E-06 U
22'33'4-PentaCB-(82)				1.40E-03	7.84E-04	1.38E-04
PentaCB-(83)+(99)				5.22E-03	2.93E-03	4.90E-04
22'33'6-PentaCB-(84)				3.12E-03	1.94E-03	3.56E-04
PentaCB-(85)+(116)+(117)				1.55E-03	9.70E-04	1.54E-04 J
PentaCB-(86)(87)(97)(109)(119)(125)				7.67E-03	4.32E-03	6.90E-04
PentaCB-(88)+(91)				1.48E-03	8.90E-04	1.74E-04 J
22'346'-PentaCB-(89)				1.48E-04	8.07E-05 J	1.77E-05 J
PentaCB-(90)+(101)+(113)				1.05E-02	5.67E-03	9.70E-04
22'355'-PentaCB-(92)				1.78E-03	1.01E-03	1.84E-04
PentaCB-(93)+(98)+(100)+(102)				4.60E-04	2.78E-04 J	5.68E-05 J
22'356'-PentaCB-(94)				5.41E-05 J	3.37E-05 J	8.10E-06 U
22'35'6-PentaCB-(95)				8.57E-03	5.27E-03	1.05E-03
22'366'-PentaCB-(96)				9.80E-05	6.23E-05 J	1.24E-05 J
22'45'6-PentaCB-(103)				4.87E-05 J	2.93E-05 J	5.30E-06 U
22'466'-PentaCB-(104)				8.60E-06 U	2.60E-06 U	5.40E-06 U
233'44'-PentaCB-(105)				5.28E-03	2.55E-03	4.16E-04
233'45-PentaCB-(106)				2.40E-06 U	5.90E-06 U	5.10E-06 U
233'4'5-PentaCB-(107)				6.46E-04	2.97E-04	5.27E-05 J
PentaCB-(108)+(124)				3.60E-04	1.76E-04 J	2.99E-05 J
PentaCB-(110)+(115)				1.49E-02	8.17E-03	1.66E-03
233'55'-PentaCB-(111)				2.40E-06 U	4.70E-06 U	4.30E-06 U
233'56-PentaCB-(112)				2.50E-06 U	4.90E-06 U	4.50E-06 U
2344'5-PentaCB-(114)				2.63E-04	1.12E-04	1.67E-05 J
23'44'5-PentaCB-(118)				1.16E-02	5.64E-03	8.71E-04
23'455'-PentaCB-(120)				2.30E-06 U	5.50E-06 U	4.10E-06 U
23'45'6-PentaCB-(121)				2.30E-06 U	4.70E-06 U	4.30E-06 U
233'4'5'-PentaCB-(122)				1.37E-04	6.53E-05 J	8.10E-06 U
23'44'5'-PentaCB-(123)				1.60E-04 U	7.27E-05 J	1.48E-05 J
33'44'5-PentaCB-(126)				4.95E-05 J	2.40E-05 J	5.70E-06 U
33'455'-PentaCB-(127)				2.50E-06 U	5.90E-06 U	5.10E-06 U
HexaCB-(128)+(166)				2.58E-03	1.17E-03	2.60E-04
HexaCB-(129)+(138)+(163)				1.79E-02	8.18E-03	1.81E-03
22'33'45'-HexaCB-(130)				9.24E-04	4.21E-04	1.02E-04
22'33'46-HexaCB-(131)				2.51E-04	1.12E-04	2.40E-05 U
22'33'46'-HexaCB-(132)				5.18E-03	2.53E-03	5.68E-04
22'33'55'-HexaCB-(133)				1.57E-04	6.87E-05 J	1.89E-05 J

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
HexaCB-(134)+(143)				7.90E-04	3.60E-04	8.88E-05 J
HexaCB-(135)+(151)				3.56E-03	1.94E-03	4.60E-04
22'33'66'-HexaCB-(136)				1.54E-03	8.36E-04	1.93E-04
22'344'5-HexaCB-(137)				7.84E-04	3.81E-04	7.06E-05 J
HexaCB-(139)+(140)				2.50E-04	1.13E-04 J	2.63E-05 J
22'3455'-HexaCB-(141)				2.82E-03	1.22E-03	2.67E-04
22'3456-HexaCB-(142)				1.00E-05 U	8.30E-06 U	8.00E-06 U
22'345'6-HexaCB-(144)				5.44E-04	2.71E-04	6.61E-05 J
22'3466'-HexaCB-(145)				3.60E-06 U	4.50E-06 U	4.70E-06 U
22'34'55'-HexaCB-(146)				1.70E-03	7.73E-04	1.94E-04
HexaCB-(147)+(149)				1.01E-02	4.86E-03	1.18E-03
22'34'56'-HexaCB-(148)				4.60E-06 U	5.90E-06 U	6.20E-06 U
22'34'66'-HexaCB-(150)				1.57E-05 J	4.10E-06 U	4.30E-06 U
22'3566'-HexaCB-(152)				1.20E-05 U	4.40E-06 U	4.60E-06 U
HexaCB-(153)+(168)				1.09E-02	4.66E-03	1.05E-03
22'44'56'-HexaCB-(154)				6.50E-05 U	4.12E-05 J	1.19E-05 J
22'44'66'-HexaCB-(155)				2.70E-06 U	5.20E-06 U	5.50E-06 U
HexaCB-(156)+(157)				1.93E-03	8.70E-04	1.70E-04 J
233'44'6-HexaCB-(158)				1.68E-03	7.52E-04	1.63E-04
233'455'-HexaCB-(159)				8.43E-05 J	4.46E-05 J	1.35E-05 J
233'456-HexaCB-(160)				7.30E-06 U	5.80E-06 U	5.60E-06 U
233'45'6-HexaCB-(161)				6.90E-06 U	5.80E-06 U	5.60E-06 U
233'4'55'-HexaCB-(162)				5.92E-05 J	2.15E-05 J	6.40E-06 U
233'4'5'6-HexaCB-(164)				1.03E-03	4.69E-04	1.26E-04
233'55'6-HexaCB-(165)				7.40E-06 U	6.10E-06 U	5.90E-06 U
23'44'55'-HexaCB-(167)				6.32E-04	2.86E-04	6.02E-05 J
33'44'55'-HexaCB-(169)				1.40E-05 U	6.60E-06 U	7.10E-06 U
22'33'44'5-HeptaCB-(170)				3.54E-03	1.42E-03	3.57E-04
HeptaCB-(171)+(173)				7.50E-04	3.70E-04	9.50E-05 J
22'33'455'-HeptaCB-(172)				4.45E-04	1.83E-04	5.67E-05 J
22'33'456'-HeptaCB-(174)				2.58E-03	1.20E-03	3.22E-04
22'33'45'6-HeptaCB-(175)				1.19E-04	5.95E-05 J	1.40E-05 J
22'33'466'-HeptaCB-(176)				3.11E-04	1.35E-04	4.01E-05 J
22'33'45'6'-HeptaCB-(177)				1.36E-03	6.41E-04	1.70E-04
22'33'55'6-HeptaCB-(178)				4.18E-04	2.12E-04	5.42E-05 J
22'33'566'-HeptaCB-(179)				8.61E-04	4.43E-04	1.24E-04
HeptaCB-(180)+(193)				5.92E-03	2.85E-03	7.20E-04
22'344'56-HeptaCB-(181)				4.30E-06 U	1.93E-05 J	6.60E-06 U
22'344'56'-HeptaCB-(182)				7.00E-06 U	5.30E-06 U	5.40E-06 U
22'344'5'6-HeptaCB-(183)				1.35E-03	7.06E-04	1.79E-04
22'344'66'-HeptaCB-(184)				5.00E-06 U	3.80E-06 U	3.90E-06 U
22'3455'6-HeptaCB-(185)				1.94E-04	8.59E-05 J	2.07E-05 J
22'34566'-HeptaCB-(186)				5.40E-06 U	4.00E-06 U	4.10E-06 U
22'34'55'6-HeptaCB-(187)				2.73E-03	1.32E-03	3.75E-04
22'34'566'-HeptaCB-(188)				6.10E-06 U	5.50E-06 U	5.70E-06 U
233'44'55'-HeptaCB-(189)				1.12E-04	4.98E-05 J	1.10E-05 U
233'44'56-HeptaCB-(190)				4.10E-04 U	2.21E-04	5.29E-05 J
233'44'5'6-HeptaCB-(191)				9.30E-05 U	4.54E-05 J	1.24E-05 J
233'455'6-HeptaCB-(192)				3.80E-06 U	2.30E-05 U	5.60E-06 U
22'33'44'55'-OctaCB-(194)				1.34E-03	6.12E-04	1.77E-04
22'33'44'56-OctaCB-(195)				4.47E-04	1.94E-04	6.36E-05 J
22'33'44'56'-OctaCB-(196)				6.70E-04 U	3.08E-04	1.00E-04
22'33'44'66'OctaCB-(197)				2.50E-05 U	2.04E-05 J	5.90E-06 J
OctaCB-(198)+(199)				1.46E-03	8.70E-04	2.50E-04
22'33'4566'-OctaCB-(200)				1.75E-04	9.01E-05 J	2.89E-05 J
22'33'45'66'-OctaCB-(201)				1.89E-04	8.98E-05 J	3.17E-05 J
22'33'55'66'-OctaCB-(202)				3.99E-04	1.74E-04	5.42E-05 J
22'344'55'6-OctaCB-(203)				9.84E-04	5.25E-04	1.51E-04
22'344'566'-OctaCB-(204)				4.70E-06 U	5.50E-06 U	4.70E-06 U
233'44'55'6-OctaCB-(205)				6.30E-05 U	2.74E-05 J	9.80E-06 J
22'33'44'55'6-NonaCB-(206)				1.00E-03	5.60E-04	1.61E-04
22'33'44'566'-NonaCB-(207)				1.20E-04 U	6.04E-05 J	1.82E-05 J
22'33'455'66'-NonaCB-(208)				2.83E-04	1.58E-04	4.53E-05 J
DecaCB-(209)				2.75E-04	1.45E-04	5.59E-05 J
PCB Congeners (ug/l)						

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
2-Chlorobiphenyl (1)						
3-Chlorobiphenyl (2)						
4-Chlorobiphenyl (3)						
2,2'-Dichlorobiphenyl (4)						
2,3-Dichlorobiphenyl (5)						
2,3'-Dichlorobiphenyl (6)						
2,4-Dichlorobiphenyl (7)						
2,4'-Dichlorobiphenyl (8)						
2,5-Dichlorobiphenyl (9)						
2,6-Dichlorobiphenyl (10)						
3,3'-Dichlorobiphenyl (11)						
3,4-Dichlorobiphenyl (12) (13)						
3,5-Dichlorobiphenyl (14)						
4,4'-Dichlorobiphenyl (15)						
2,2',3-Trichlorobiphenyl (16)						
2,2',4-Trichlorobiphenyl (17)						
2,2',5-Trichlorobiphenyl (18) (30)						
2,2',6-Trichlorobiphenyl (19)						
2,3,3'-Trichlorobiphenyl (20) (28)						
2,3,4-Trichlorobiphenyl (21) (33)						
2,3,4'-Trichlorobiphenyl (22)						
2,3,5-Trichlorobiphenyl (23)						
2,3,6-Trichlorobiphenyl (24)						
2,3',4-Trichlorobiphenyl (25)						
2,3',5-Trichlorobiphenyl (26) (29)						
2,3',6-Trichlorobiphenyl (27)						
2,4',5-Trichlorobiphenyl (31)						
2,4',6-Trichlorobiphenyl (32)						
2',3,5-Trichlorobiphenyl (34)						
3,3',4-Trichlorobiphenyl (35)						
3,3',5-Trichlorobiphenyl (36)						
3,4,4'-Trichlorobiphenyl (37)						
3,4,5-Trichlorobiphenyl (38)						
3,4',5-Trichlorobiphenyl (39)						
2,2',3,3'-Tetrachlorobiphenyl (40) (71)						
2,2',3,4-Tetrachlorobiphenyl (41)						
2,2',3,4'-Tetrachlorobiphenyl (42)						
2,2',3,5-Tetrachlorobiphenyl (43)						
2,2',3,5'-Tetrachlorobiphenyl (44) (47) (65)						
2,2',3,6-Tetrachlorobiphenyl (45) (51)						
2,2',3,6'-Tetrachlorobiphenyl (46)						
2,2',4,5-Tetrachlorobiphenyl (48)						
2,2',4,5'-Tetrachlorobiphenyl (49) (69)						
2,2',4,6-Tetrachlorobiphenyl (50) (53)						
2,2',5,5'-Tetrachlorobiphenyl (52)						
2,2',6,6'-Tetrachlorobiphenyl (54)						
2,3,3',4-Tetrachlorobiphenyl (55)						
2,3,3',4'-Tetrachlorobiphenyl (56)						
2,3,3',5-Tetrachlorobiphenyl (57)						
2,3,3',5'-Tetrachlorobiphenyl (58)						
2,3,3',6-Tetrachlorobiphenyl (59) (62) (75)						
2,3,4,4'-Tetrachlorobiphenyl (60)						
2,3,4,5-Tetrachlorobiphenyl (61) (70) (74) (76)						
2,3,4',5-Tetrachlorobiphenyl (63)						
2,3,4',6-Tetrachlorobiphenyl (64)						
2,3',4,4'-Tetrachlorobiphenyl (66)						
2,3',4,5-Tetrachlorobiphenyl (67)						
2,3',4,5'-Tetrachlorobiphenyl (68)						
2,3',5,5'-Tetrachlorobiphenyl (72)						
2,3',5',6-Tetrachlorobiphenyl (73)						
3,3',4,4'-Tetrachlorobiphenyl (77)						
3,3',4,5-Tetrachlorobiphenyl (78)						
3,3',4,5'-Tetrachlorobiphenyl (79)						
3,3',5,5'-Tetrachlorobiphenyl (80)						
3,4,4',5-Tetrachlorobiphenyl (81)						
2,2',3,3',4-Pentachlorobiphenyl (82)						

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
2,2',3,3',5-Pentachlorobiphenyl (83)						
2,2',3,3',6-Pentachlorobiphenyl (84)						
2,2',3,4,4'-Pentachlorobiphenyl (85) (116) (117)						
2,2',3,4,5-Pentachlorobiphenyl (86)(87)(97)(109)(119)(125)						
2,2',3,4,6-Pentachlorobiphenyl (88) (91)						
2,2',3,4,6'-Pentachlorobiphenyl (89)						
2,2',3,4',5-Pentachlorobiphenyl (90) (101) (113)						
2,2',3,5,5'-Pentachlorobiphenyl (92)						
2,2',3,5,6-Pentachlorobiphenyl (93) (100)						
2,2',3,5,6'-Pentachlorobiphenyl (94)						
2,2',3,5',6-Pentachlorobiphenyl (95)						
2,2',3,6,6'-Pentachlorobiphenyl (96)						
2,2',3',4,6-Pentachlorobiphenyl (98) (102)						
2,2',4,4',5-Pentachlorobiphenyl (99)						
2,2',4,5',6-Pentachlorobiphenyl (103)						
2,2',4,6,6'-Pentachlorobiphenyl (104)						
2,3,3',4,4'-Pentachlorobiphenyl (105)						
2,3,3',4,5-Pentachlorobiphenyl (106)						
2,3,3',4',5-Pentachlorobiphenyl (107)						
2,3,3',4,5'-Pentachlorobiphenyl (108)(124)						
2,3,3',4',6-Pentachlorobiphenyl (110)(115)						
2,3,3',5,5'-Pentachlorobiphenyl (111)						
2,3,3',5,6-Pentachlorobiphenyl (112)						
2,3,4,4',5-Pentachlorobiphenyl (114)						
2,3',4,4',5-Pentachlorobiphenyl (118)						
2,3',4,5,5'-Pentachlorobiphenyl (120)						
2,3',4,5',6-Pentachlorobiphenyl (121)						
2',3,3',4,5-Pentachlorobiphenyl (122)						
2',3,4,4',5-Pentachlorobiphenyl (123)						
3,3',4,4',5-Pentachlorobiphenyl (126)						
3,3',4,5,5'-Pentachlorobiphenyl (127)						
2,2',3,3',4,4'-Hexachlorobiphenyl (128)(166)						
2,2',3,3',4,5-Hexachlorobiphenyl (129)(138)(163)						
2,2',3,3',4,5'-Hexachlorobiphenyl (130)						
2,2',3,3',4,6-Hexachlorobiphenyl (131)						
2,2',3,3',4,6'-Hexachlorobiphenyl (132)						
2,2',3,3',5,5'-Hexachlorobiphenyl (133)						
2,2',3,3',5,6-Hexachlorobiphenyl (134)						
2,2',3,3',5,6'-Hexachlorobiphenyl (135)(151)						
2,2',3,3',6,6'-Hexachlorobiphenyl (136)						
2,2',3,4,4',5-Hexachlorobiphenyl (137)						
2,2',3,4,4',6-Hexachlorobiphenyl (139)(140)						
2,2',3,4,5,5'-Hexachlorobiphenyl (141)						
2,2',3,4,5,6-Hexachlorobiphenyl (142)						
2,2',3,4,5,6'-Hexachlorobiphenyl (143)						
2,2',3,4,5',6-Hexachlorobiphenyl (144)						
2,2',3,4,6,6'-Hexachlorobiphenyl (145)						
2,2',3,4',5,5'-Hexachlorobiphenyl (146)						
2,2',3,4',5,6-Hexachlorobiphenyl (147)(149)						
2,2',3,4',5,6'-Hexachlorobiphenyl (148)						
2,2',3,4',6,6'-Hexachlorobiphenyl (150)						
2,2',3,5,6,6'-Hexachlorobiphenyl (152)						
2,2',4,4',5,5'-Hexachlorobiphenyl (153)(168)						
2,2',4,4',5,6'-Hexachlorobiphenyl (154)						
2,2',4,4',6,6'-Hexachlorobiphenyl (155)						
2,3,3',4,4',5-Hexachlorobiphenyl (156)*157)						
2,3,3',4,4',6-Hexachlorobiphenyl (158)						
2,3,3',4,5,5'-Hexachlorobiphenyl (159)						
2,3,3',4,5,6-Hexachlorobiphenyl (160)						
2,3,3',4,5',6-Hexachlorobiphenyl (161)						
2,3,3',4',5,5'-Hexachlorobiphenyl (162)						
2,3,3',4',5',6-Hexachlorobiphenyl (164)						
2,3,3',5,5',6-Hexachlorobiphenyl (165)						
2,3',4,4',5,5'-Hexachlorobiphenyl (167)						
3,3',4,4',5,5'-Hexachlorobiphenyl (169)						
2,2',3,3',4,4',5-Heptachlorobiphenyl (170)						

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
2,2',3,3',4,4',6-Heptachlorobiphenyl (171)(173)						
2,2',3,3',4,5,5'-Heptachlorobiphenyl (172)						
2,2',3,3',4,5,6'-Heptachlorobiphenyl (174)						
2,2',3,3',4,5',6-Heptachlorobiphenyl (175)						
2,2',3,3',4,6,6'-Heptachlorobiphenyl (176)						
2,2',3,3',4',5,6-Heptachlorobiphenyl (177)						
2,2',3,3',5,5',6-Heptachlorobiphenyl (178)						
2,2',3,3',5,6,6'-Heptachlorobiphenyl (179)						
2,2',3,4,4',5,5'-Heptachlorobiphenyl (180)(193)						
2,2',3,4,4',5,6-Heptachlorobiphenyl (181)						
2,2',3,4,4',5,6'-Heptachlorobiphenyl (182)						
2,2',3,4,4',5',6-Heptachlorobiphenyl (183)(185)						
2,2',3,4,4',6,6'-Heptachlorobiphenyl (184)						
2,2',3,4,5,6,6'-Heptachlorobiphenyl (186)						
2,2',3,4',5,5',6-Heptachlorobiphenyl (187)						
2,2',3,4',5,6,6'-Heptachlorobiphenyl (188)						
2,3,3',4,4',5,5'-Heptachlorobiphenyl (189)						
2,3,3',4,4',5,6-Heptachlorobiphenyl (190)						
2,3,3',4,4',5',6-Heptachlorobiphenyl (191)						
2,3,3',4,5,5',6-Heptachlorobiphenyl (192)						
2,2',3,3',4,4',5,5'-Octachlorobiphenyl (194)						
2,2',3,3',4,4',5,6-Octachlorobiphenyl (195)						
2,2',3,3',4,4',5,6'-Octachlorobiphenyl (196)						
2,2',3,3',4,4',6,6'-Octachlorobiphenyl (197)(200)						
2,2',3,3',4,5,5',6-Octachlorobiphenyl (198)(199)						
2,2',3,3',4,5',6,6'-Octachlorobiphenyl (201)						
2,2',3,3',5,5',6,6'-Octachlorobiphenyl (202)						
2,2',3,4,4',5,5',6-Octachlorobiphenyl (203)						
2,2',3,4,4',5,6,6'-Octachlorobiphenyl (204)						
2,3,3',4,4',5,5',6-Octachlorobiphenyl (205)						
2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (206)						
2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (207)						
2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (208)						
2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (209)						
PCB Homologs (ug/l)						
Monochlorobiphenyl				7.78E-05	4.42E-05	1.76E-05
Dichlorobiphenyl				8.30E-03	2.72E-03	5.75E-04
Trichlorobiphenyl				5.55E-02	2.01E-02	3.16E-03
Tetrachlorobiphenyl				9.08E-02	4.16E-02	6.93E-03
Pentachlorobiphenyl				7.54E-02	4.14E-02	7.36E-03
Hexachlorobiphenyl				6.54E-02	3.04E-02	6.90E-03
Heptachlorobiphenyl				2.07E-02	9.96E-03	2.60E-03
Octachlorobiphenyl				4.99E-03	2.91E-03	8.71E-04
Nonachlorobiphenyl				1.28E-03	7.78E-04	2.25E-04
Decachlorobiphenyl				2.75E-04	1.45E-04	5.59E-05
Total Detected PCBs (Method 1668)	6.40E-05	6.40E-06	3.00E-01	3.23E-01	1.50E-01	2.87E-02
Phthalates (ug/l)						
Bis(2-ethylhexyl) phthalate	2.2	0.2	5	26 U	10 U	10 U
Butylbenzyl phthalate	3			35 U	14 U	14 U
Dibutyl phthalate	3			35 U	14 U	14 U
Diethyl phthalate	3			35 U	14 U	14 U
Dimethyl phthalate	3			35 U	14 U	14 U
Di-n-octyl phthalate	3			35 U	14 U	14 U
Pesticides (ug/l)						
2,4'-DDD	3.10E-04	3.10E-05		1.87E-02 U	9.35E-02 U	9.35E-02 U
2,4'-DDE	2.20E-04	1.80E-05		1.87E-02 U	9.35E-02 U	9.35E-02 U
2,4'-DDT	2.00E-01	2.20E-05		1.87E-02 U	9.35E-02 U	9.35E-02 U
4,4'-DDD	3.10E-04	3.10E-05		1.87E-02 U	9.35E-02 U	9.35E-02 U
4,4'-DDE	2.20E-04	1.80E-05		1.87E-02 U	9.35E-02 U	9.35E-02 U
4,4'-DDT	2.20E-04	2.20E-05		5.61E-02 U	9.35E-02 U	9.35E-02 U
Total DDx		1.00E-02				
Aldrin	5.00E-05	7.70E-07		1.87E-02 U	9.35E-02 U	9.35E-02 U
alpha-BHC	4.90E-03			1.87E-02 U	9.35E-02 U	9.35E-02 U

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
beta-BHC	1.70E-02			1.87E-02 U	9.35E-02 U	9.35E-02 U
cis-Chlordane	8.10E-04	8.10E-05		1.87E-02 U	9.35E-02 U	9.35E-02 U
cis-Nonachlor	1.90E-01			1.87E-02 U	9.35E-02 U	9.35E-02 U
Chlordane Technical		8.10E-05		1.87E-02 U	9.35E-02 U	9.35E-02 U
delta-BHC	5.20E-02			1.87E-02 U	9.35E-02 U	9.35E-02 U
Dieldrin	5.40E-05			1.87E-02 U	9.35E-02 U	9.35E-02 U
Endosulfan I	5.10E-02			5.61E-02 U	9.35E-02 U	9.35E-02 U
Endosulfan II	5.10E-02			1.87E-02 U	9.35E-02 U	9.35E-02 U
Endosulfan sulfate	8.90E+01			1.87E-02 U	9.35E-02 U	9.35E-02 U
Endrin	3.60E-02			1.87E-02 U	9.35E-02 U	9.35E-02 U
Endrin aldehyde				1.87E-02 U	9.35E-02 U	9.35E-02 U
Endrin ketone				1.87E-02 U	9.35E-02 U	9.35E-02 U
gamma-BHC	3.70E-02			1.87E-02 U	9.35E-02 U	9.35E-02 U
Heptachlor	7.90E-05			1.87E-02 U	9.35E-02 U	9.35E-02 U
Heptachlor epoxide	3.90E-05			1.87E-02 U	9.35E-02 U	9.35E-02 U
Hexachlorobenzene	2.90E-04	2.90E-05		1.87E-02 U	9.35E-02 U	9.35E-02 U
Hexachlorobutadiene	8.60E-01			1.87E-02 U	9.35E-02 U	9.35E-02 U
Hexachloroethane	3.30E+00					
Methoxychlor	3.00E-02			7.48E-02 U	3.74E-01 U	3.74E-01 U
Mirex	NC			1.87E-02 U	9.35E-02 U	9.35E-02 U
Oxychlordane	1.90E-01	8.10E-05		1.87E-02 U	9.35E-02 U	9.35E-02 U
Toxaphene	2.00E-04			1.87E+00 U	9.35E-01 U	9.35E-01 U
trans-Chlordane	8.10E-04	8.10E-05		1.87E-02 U	9.35E-02 U	9.35E-02 U
trans-Nonachlor	1.90E-01			1.87E-02 U	9.35E-02 U	9.35E-02 U
Dioxins (ug/l)						
1,2,3,4,6,7,8-HeptaCDD				2.64E-04	2.24E-04	1.55E-04
1,2,3,4,6,7,8-HeptaCDF				5.30E-05	2.60E-05 U	1.40E-05 U
1,2,3,4,7,8,9-HeptaCDF				5.80E-06 J	1.60E-06 U	1.10E-06 U
1,2,3,4,7,8-HexaCDD				4.50E-06 J	2.10E-06 J	1.00E-06 U
1,2,3,4,7,8-HexaCDF				5.16E-06 J	2.86E-06 J	1.66E-06 J
1,2,3,6,7,8-HexaCDD				1.15E-05 J	7.83E-06 J	4.84E-06 J
1,2,3,6,7,8-HexaCDF				3.08E-06 J	1.69E-06 J	9.30E-07 U
1,2,3,7,8,9-HexaCDD				1.03E-05 J	5.30E-06 J	3.41E-06 J
1,2,3,7,8,9-HexaCDF				1.20E-06 U	1.10E-06 U	1.10E-06 U
1,2,3,7,8-PentaCDD				1.80E-06 J	1.10E-06 U	1.10E-06 U
1,2,3,7,8-PentaCDF				1.59E-06 J	1.00E-06 U	9.80E-07 U
2,3,4,6,7,8-HexaCDF				2.90E-06 J	1.74E-06 J	1.00E-06 U
2,3,4,7,8-PentaCDF				2.20E-06 J	1.40E-06 J	9.90E-07 U
2,3,7,8-TetraCDD	5.1E-09	5E-10		9.80E-07 U	1.10E-06 U	1.00E-06 U
2,3,7,8-TetraCDF				2.90E-06 J	2.50E-06 J	1.50E-06 J
OCDD				2.11E-03	2.09E-03	1.53E-03
OCDF				1.80E-04	6.27E-05 J	3.79E-05 J
HeptaCDD homologs				5.43E-04	6.10E-04	4.59E-04
HeptaCDF homologs				1.55E-04	4.50E-05 J	2.74E-05 J
HexaCDD homologs				8.30E-05	7.60E-05	5.00E-05
HexaCDF homologs				7.80E-05	4.65E-05 J	2.50E-05 J
PentaCDD homologs				1.80E-06 J	2.50E-06 U	1.20E-06 U
PentaCDF homologs				3.54E-05 J	3.05E-05 J	1.40E-05 J
TetraCDD homologs				9.80E-07 U	1.10E-06 U	1.00E-06 U
TetraCDF homologs				1.39E-05 J	1.23E-05 J	1.50E-06 J
Total Dioxin TEQ (ND=DL/2)	5.1E-09	5E-10		1.10E-05	7.02E-06	4.65E-06
Total Dioxin TEQ (ND=0)	5.1E-09	5E-10		1.05E-05	5.71E-06	3.16E-06
Butyltins (ug/l)						
Butyltin ion				0.20 U	0.20 U	0.20 U
Dibutyltin ion				0.29 U	0.29 U	0.29 U
Tributyltin ion	0.072	0.063		0.19 U	0.19 U	0.19 U
Total Metals (ug/l)						
Aluminum				6670	14300	13800

Table 2
Storm Water Sample Analytical Laboratory Results
Burgard Industrial Park - Basin 18

Chemical	Portland Harbor SLV JSCS[1]	Portland Harbor SLV CL[2]	DEQ Appendix E "Typical PH Values"[3]	Basin 18 SP1 2/22/2013	Basin 18 SP1 12/11/2012	Basin 18 SP2 12/11/2012
Antimony	6			1.0 J	1.5	0.98 J
Arsenic	0.045	0.02	2	3.1	5.7	5.4
Cadmium	0.094		0.7	0.83 J	0.79 J	0.50 U
Chromium	100	100	10	34	47	41
Copper	2.7	3	60	52	52	42
Lead	0.54		50	48	50	32
Manganese	50	50		805	1730	1700
Mercury	0.77		0.2	0.074 J	0.072 J	0.040 U
Nickel	16		8	14	15	14
Silver	0.12		0.1	0.50 U	0.50 U	0.50 U
Zinc	36	36.5	700	319	277	203
Dissolved Metals (ug/l)						
Aluminum				25 U	25 U	25 U
Antimony	6			0.50 U	0.58 J	0.61 J
Arsenic	0.045	0.02	2	0.80 J	1.7 J	1.8 J
Cadmium	0.094		0.7	0.50 U	0.50 U	0.50 U
Chromium	100	100	10	0.50 U	1.8 J	2.9
Copper	2.7	3	60	2.3	3.4	3.3
Lead	0.54		50	0.50 U	0.50 U	0.50 U
Manganese	50			512	425	261
Mercury	0.77		0.2	0.040 U	0.040 U	0.040 U
Nickel	16		8	1.7 J	0.90 J	0.97 J
Silver	0.12		0.1	0.50 U	0.50 U	0.50 U
Zinc	36	36.5	700	43	17	6.8
Petroleum Hydrocarbons (ug/l)						
Gasoline				105	50 U	50 U
Diesel				467 U	94 U	94 U
Oil				3880	2590	2280
TSS (ug/l)			70000	301000	300000	137000
TOC (ug/l)				3280	4640	4150

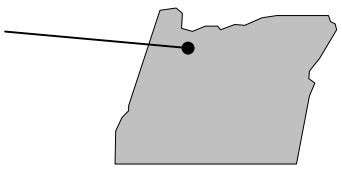
U - Not detected at noted detection limit
J- Estimated value

1 - Table 3-1 PH JSCS Guidance, 7/16/2007 revision
2 - Table 17 January 2017 PH ROD. Surface Water Cleanup Level.
3 - October 2010, DEQ Guidance for Evaluating Stormwater Pathway at Upland Sites, Appendix E, Tool For Evaluating Stormwater Data (12/2015 update)

Detected concentration > 10 x SLV (CL or JSCS if no CL)
Detected concentration > 100 x SLV (CL or JSCS if no CL)
Detected concentration > 1000 x SLV (CL or JSCS if no CL)

Figures

Portland, Oregon



N

Approximate Scale

5000 feet

Base photograph July 2016

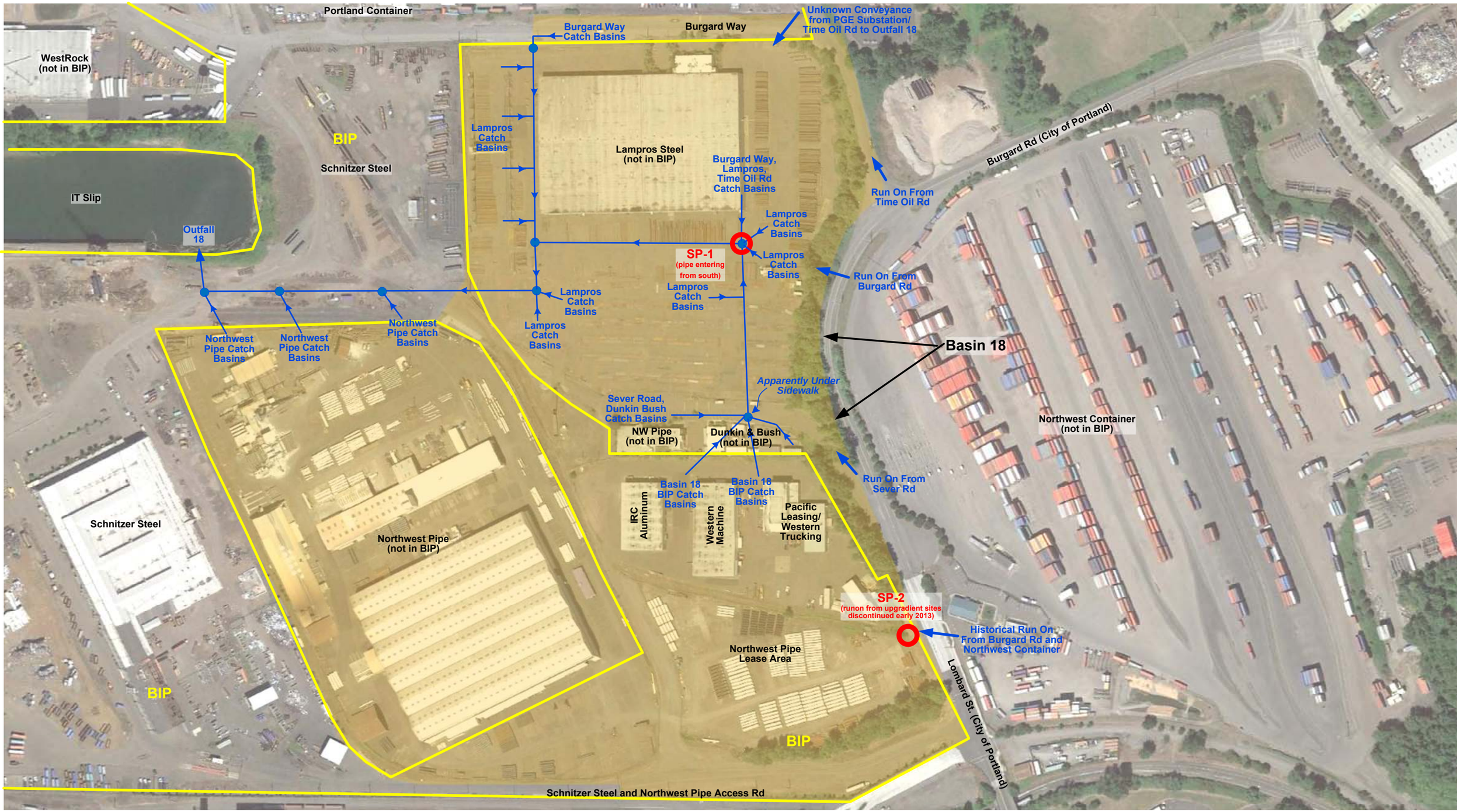
Figure 1
Site Location Map
Burgard Industrial Park

RIEKE CONSULTING SERVICES, LLC

Base photograph July 2016

Figure 2
Site Plan
Burgard Industrial Park
Portland, Oregon

RIEKE CONSULTING SERVICES, LLC



Base photograph July 2016

Approximate Scale

260 Feet

N

Previous Storm Water Sample Location

Manhole

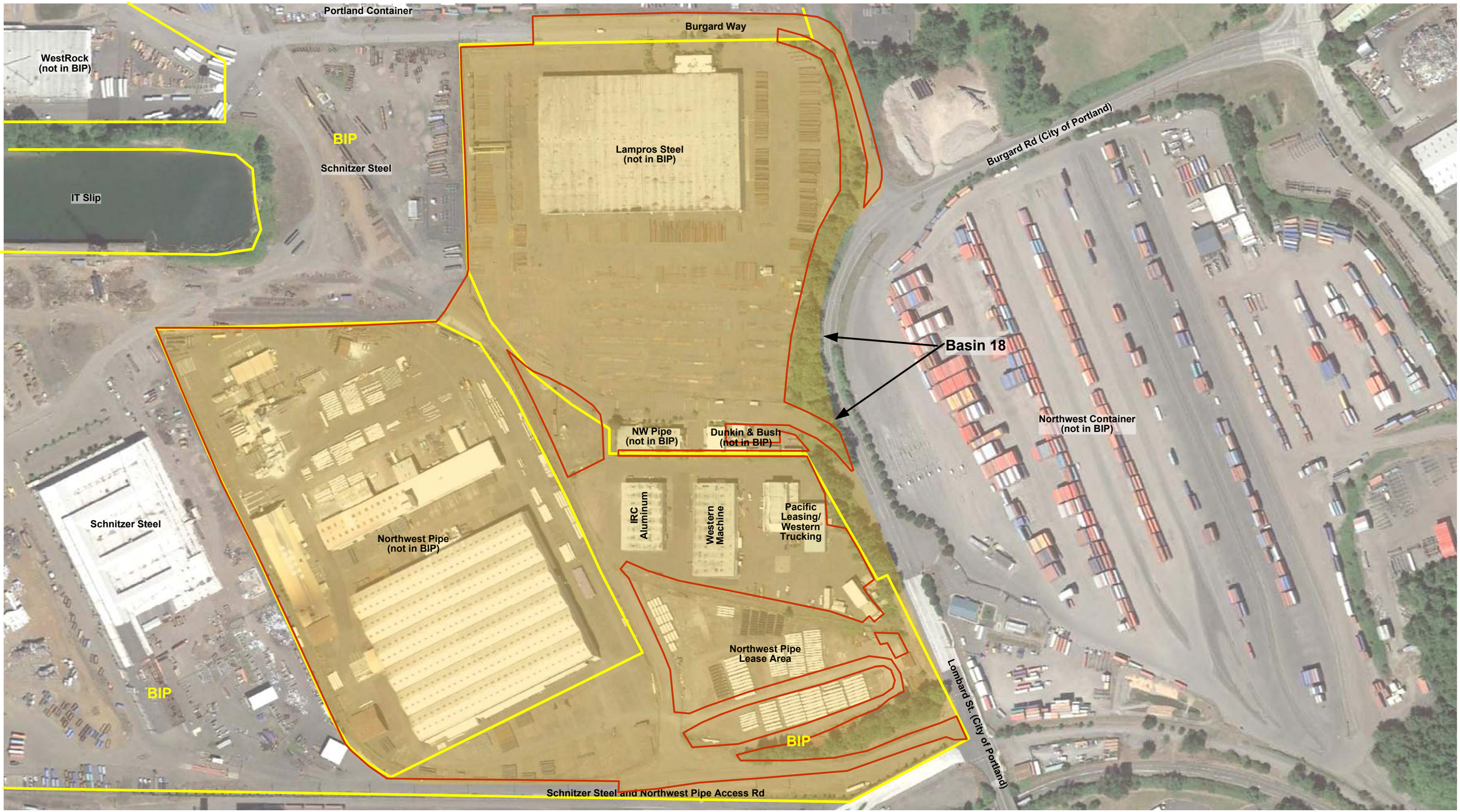
Storm Water Line

BIP Boundary

Basin 18 Area

Figure 3
Basin 18 Site Plan
Burgard Industrial Park
Portland, OR

RIEKE CONSULTING SERVICES, LLC



Base photograph July 2016

Approximate Scale

260 Feet

N

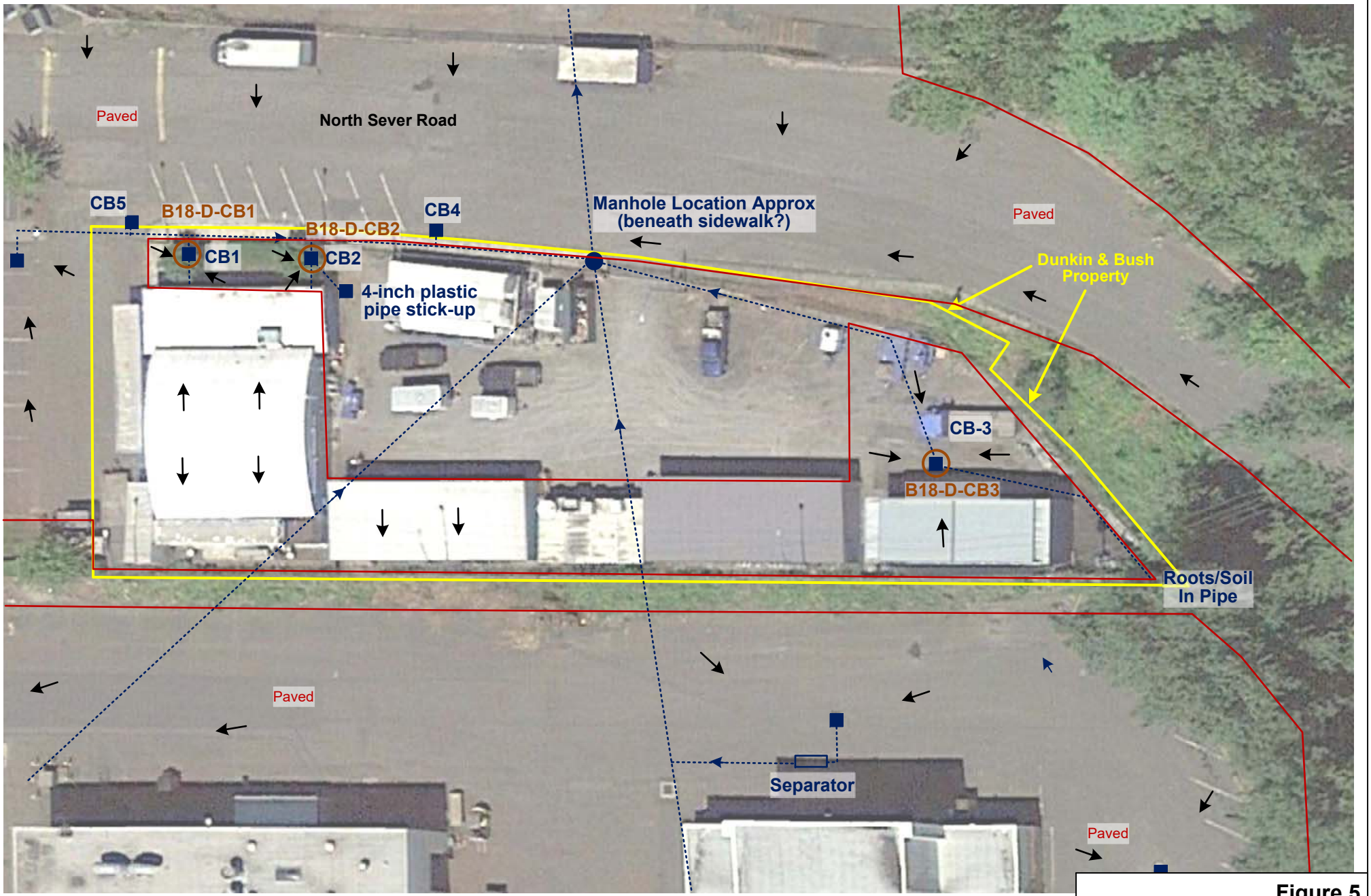
BIP Boundary

Impervious Surface

Basin 18 Area

Figure 4
Basin 18 Impervious Surfaces
Burgard Industrial Park
Portland, OR

RIEKE CONSULTING SERVICES, LLC



Base photograph July 2016

N

Approximate Scale

40 feet

Catch Basin

Manhole

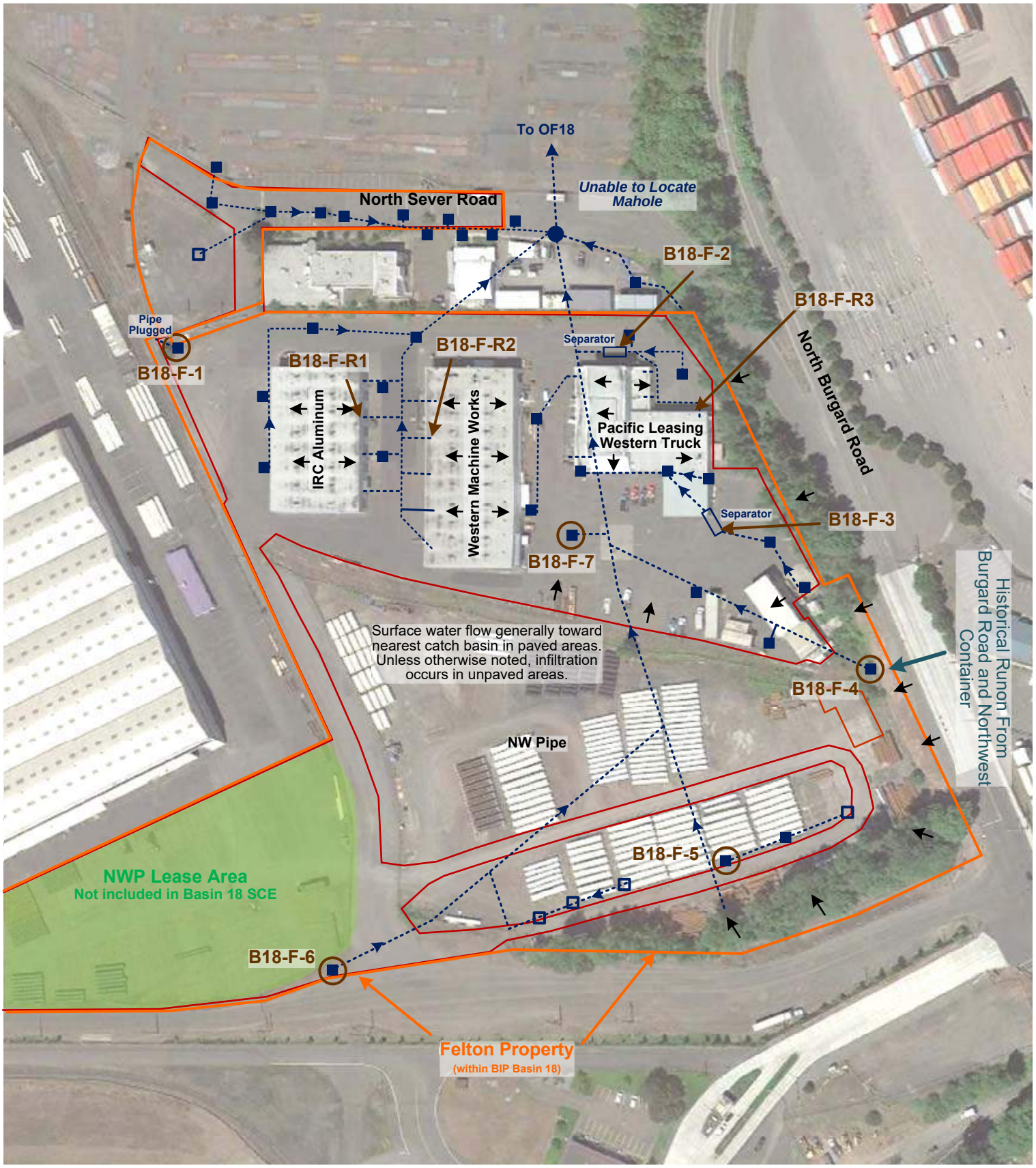
Impervious Surface

Storm Water Flow Direction

Property Boundary

Figure 5
Sample Locations
Dunkin & Bush Property
Burgard Industrial Park
Portland, OR

RIEKE CONSULTING SERVICES, LLC



Base photograph July 2016

N

Approximate Scale

180 feet

Impervious Surface

Manhole

Catch Basin (current)

Catch Basin (not found, historical)

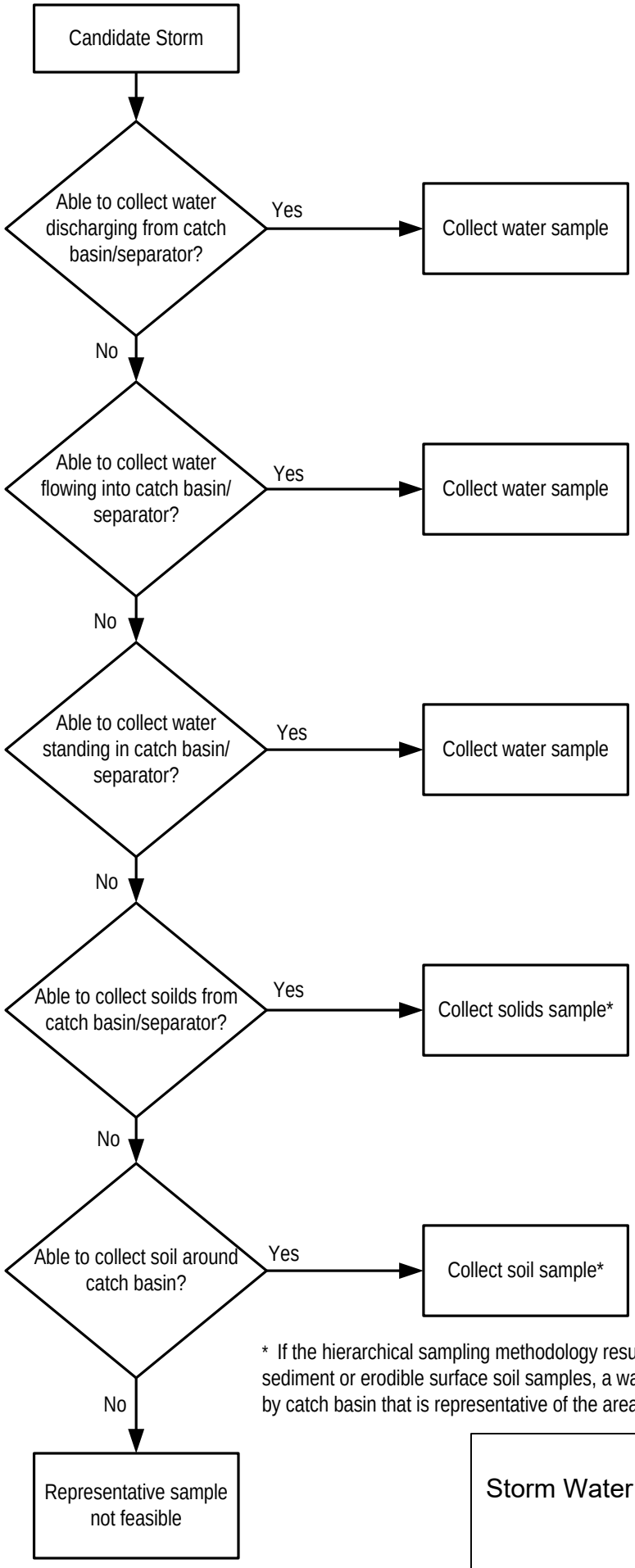
Buried Storm Water Line

Inferred Storm Water Flow Direction

Property Boundary

Figure 6
Sample Locations
Felton Property
Burgard Industrial Park
Portland, OR

RIEKE CONSULTING SERVICES, LLC



* If the hierarchical sampling methodology results in the collection of catch basin sediment or erodible surface soil samples, a water sample will be collected from a near-by catch basin that is representative of the area where the sediment/soil was collected.

Figure 7
Storm Water Sampling Hierarchy Flow Chart
Burgard Industrial Park
Portland, OR

RIEKE CONSULTING SERVICES, LLC

Appendix A – Analytical Laboratory Reports

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Thursday, December 15, 2016

Ross Rieke
Bridgewater Group
7100 SW Hampton St. Suite 235
Tigard, OR 97223

RE: Schnitzer-Burgard / 8001-20

Enclosed are the results of analyses for work order A6K0789, which was received by the laboratory on 11/23/2016 at 9:30:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: pnerenberg@apex-labs.com, or by phone at 503-718-2323.

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B18-D-CB1	A6K0789-01	Water	11/22/16 14:15	11/23/16 09:30
B18-D-CB3	A6K0789-02	Water	11/22/16 14:25	11/23/16 09:30
B18-F-1	A6K0789-03	Water	11/22/16 14:30	11/23/16 09:30
B18-F-2	A6K0789-04	Water	11/22/16 16:00	11/23/16 09:30
B18-F-3	A6K0789-05	Water	11/22/16 15:10	11/23/16 09:30
B18-F-4	A6K0789-06	Water	11/22/16 14:55	11/23/16 09:30
B18-F-5	A6K0789-07	Water	11/22/16 14:58	11/23/16 09:30
B18-F-6	A6K0789-08	Water	11/22/16 14:40	11/23/16 09:30
B18-F-7	A6K0789-09	Water	11/22/16 14:40	11/23/16 09:30
B18-F-R1	A6K0789-10	Water	11/22/16 15:20	11/23/16 09:30
B18-F-R2	A6K0789-11	Water	11/22/16 14:50	11/23/16 09:30
B18-F-R3	A6K0789-12	Water	11/22/16 14:30	11/23/16 09:30

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Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB1 (A6K0789-01)			**Matrix: Water**		**Batch: 6110943**			
Diesel	ND	0.103	0.206	mg/L	1	11/30/16 22:52	NWTPH-Dx	
Oil	**0.310**	0.206	0.412	"	"	"	"	F-17, J
Surrogate: o-Terphenyl (Surr)			*Recovery: 89 %*	*Limits: 50-150 %*	"	"	"	
B18-D-CB3 (A6K0789-02)			**Matrix: Water**		**Batch: 6110943**			
Diesel	ND	0.103	0.206	mg/L	1	11/30/16 23:13	NWTPH-Dx	
Oil	**0.303**	0.206	0.412	"	"	"	"	J
Surrogate: o-Terphenyl (Surr)			*Recovery: 89 %*	*Limits: 50-150 %*	"	"	"	
B18-F-1 (A6K0789-03)			**Matrix: Water**		**Batch: 6110943**			
Diesel	ND	0.112	0.225	mg/L	1	11/30/16 23:33	NWTPH-Dx	
Oil	**0.546**	0.225	0.449	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 88 %*	*Limits: 50-150 %*	"	"	"	
B18-F-2 (A6K0789-04)			**Matrix: Water**		**Batch: 6110943**			
Diesel	ND	0.103	0.206	mg/L	1	12/01/16 00:14	NWTPH-Dx	
Oil	**0.311**	0.206	0.412	"	"	"	"	J
Surrogate: o-Terphenyl (Surr)			*Recovery: 84 %*	*Limits: 50-150 %*	"	"	"	
B18-F-3 (A6K0789-05)			**Matrix: Water**		**Batch: 6110943**			
Diesel	ND	0.111	0.222	mg/L	1	12/01/16 00:34	NWTPH-Dx	
Oil	**0.298**	0.222	0.444	"	"	"	"	J
Surrogate: o-Terphenyl (Surr)			*Recovery: 84 %*	*Limits: 50-150 %*	"	"	"	
B18-F-4 (A6K0789-06)			**Matrix: Water**		**Batch: 6110943**			
Diesel	**0.279**	0.103	0.206	mg/L	1	12/01/16 00:55	NWTPH-Dx	F-17
Oil	**0.243**	0.206	0.412	"	"	"	"	F-17, J
Surrogate: o-Terphenyl (Surr)			*Recovery: 89 %*	*Limits: 50-150 %*	"	"	"	
B18-F-5 (A6K0789-07)			**Matrix: Water**		**Batch: 6110943**			
Diesel	ND	0.109	0.217	mg/L	1	12/01/16 01:15	NWTPH-Dx	
Oil	**0.515**	0.217	0.435	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 88 %*	*Limits: 50-150 %*	"	"	"	
B18-F-6 (A6K0789-08)			**Matrix: Water**		**Batch: 6110943**			
Diesel	ND	0.112	0.225	mg/L	1	12/01/16 01:36	NWTPH-Dx	
Oil	**6.74**	0.225	0.449	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 92 %*	*Limits: 50-150 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-7 (A6K0789-09)			**Matrix: Water**		**Batch: 6110943**			
Diesel	ND	0.102	0.204	mg/L	1	12/01/16 01:56	NWTPH-Dx	
Oil	**1.08**	0.204	0.408	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 90 %*	*Limits: 50-150 %*	"	"	"	
B18-F-R1 (A6K0789-10)			**Matrix: Water**		**Batch: 6120133**			
Diesel	ND	0.101	0.202	mg/L	1	12/01/16 23:00	NWTPH-Dx	
Oil	ND	0.202	0.404	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 96 %*	*Limits: 50-150 %*	"	"	"	
B18-F-R2 (A6K0789-11)			**Matrix: Water**		**Batch: 6120133**			
Diesel	ND	0.103	0.206	mg/L	1	12/01/16 23:20	NWTPH-Dx	
Oil	ND	0.206	0.412	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 97 %*	*Limits: 50-150 %*	"	"	"	
B18-F-R3 (A6K0789-12)			**Matrix: Water**		**Batch: 6120133**			
Diesel	ND	0.105	0.211	mg/L	1	12/01/16 23:41	NWTPH-Dx	
Oil	ND	0.211	0.421	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 95 %*	*Limits: 50-150 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB1 (A6K0789-01)			**Matrix: Water**		**Batch: 6110906**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	11/29/16 17:43	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 101 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*92 %*	*Limits: 50-150 %*	"	"	"	
B18-D-CB3 (A6K0789-02)			**Matrix: Water**		**Batch: 6110906**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	11/29/16 18:10	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 101 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*92 %*	*Limits: 50-150 %*	"	"	"	
B18-F-1 (A6K0789-03)			**Matrix: Water**		**Batch: 6110906**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	11/29/16 18:38	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 101 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*91 %*	*Limits: 50-150 %*	"	"	"	
B18-F-2 (A6K0789-04)			**Matrix: Water**		**Batch: 6110906**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	11/29/16 19:05	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 102 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*93 %*	*Limits: 50-150 %*	"	"	"	
B18-F-3 (A6K0789-05)			**Matrix: Water**		**Batch: 6110906**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	11/29/16 19:33	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 101 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*93 %*	*Limits: 50-150 %*	"	"	"	
B18-F-4 (A6K0789-06)			**Matrix: Water**		**Batch: 6110906**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	11/29/16 20:01	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 104 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*94 %*	*Limits: 50-150 %*	"	"	"	
B18-F-5 (A6K0789-07)			**Matrix: Water**		**Batch: 6110906**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	11/29/16 20:28	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 102 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*93 %*	*Limits: 50-150 %*	"	"	"	
B18-F-6 (A6K0789-08)			**Matrix: Water**		**Batch: 6110920**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	11/29/16 16:22	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 101 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*111 %*	*Limits: 50-150 %*	"	"	"	

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Philip Nerenberg

Philip Nerenberg, Lab Director

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Tigard, OR 97223
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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-7 (A6K0789-09)			**Matrix: Water**		**Batch: 6110920**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	11/29/16 16:50	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 99 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*111 %*	*Limits: 50-150 %*	"	"	"	
B18-F-R1 (A6K0789-10)			**Matrix: Water**		**Batch: 6110920**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	11/29/16 17:17	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 100 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*114 %*	*Limits: 50-150 %*	"	"	"	
B18-F-R2 (A6K0789-11)			**Matrix: Water**		**Batch: 6110920**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	11/29/16 17:45	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 100 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*112 %*	*Limits: 50-150 %*	"	"	"	
B18-F-R3 (A6K0789-12)			**Matrix: Water**		**Batch: 6110920**			**V-20**
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	11/29/16 18:12	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 101 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*112 %*	*Limits: 50-150 %*	"	"	"	

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Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB1 (A6K0789-01)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Aroclor 1016	ND	0.00943	0.0189	ug/L	1	12/07/16 12:04	EPA 8082A	
Aroclor 1221	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1232	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1242	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1248	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1254	ND	0.00943	0.0189	"	"	"	"	
Aroclor 1260	ND	0.00943	0.0189	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 69 %*	*Limits: 39-120 %*	"	"	"	
B18-D-CB3 (A6K0789-02)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Aroclor 1016	ND	0.00952	0.0190	ug/L	1	12/07/16 12:22	EPA 8082A	
Aroclor 1221	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1232	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1242	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1248	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1254	**0.0202**	0.00952	0.0190	"	"	"	"	
Aroclor 1260	ND	0.00952	0.0190	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 66 %*	*Limits: 39-120 %*	"	"	"	
B18-F-1 (A6K0789-03)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Aroclor 1016	ND	0.0103	0.0206	ug/L	1	12/07/16 12:39	EPA 8082A	
Aroclor 1221	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1232	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1242	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1248	ND	0.0103	0.0206	"	"	"	"	
Aroclor 1254	**0.0108**	0.0103	0.0206	"	"	"	"	J
Aroclor 1260	**0.0123**	0.0103	0.0206	"	"	"	"	J
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 61 %*	*Limits: 39-120 %*	"	"	"	
B18-F-2 (A6K0789-04)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Aroclor 1016	ND	0.00952	0.0190	ug/L	1	12/07/16 12:57	EPA 8082A	
Aroclor 1221	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1232	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1242	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1248	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1254	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1260	ND	0.00952	0.0190	"	"	"	"	

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Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-2 (A6K0789-04)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 71 %*	*Limits: 39-120 %*	1	"	EPA 8082A	
B18-F-3 (A6K0789-05)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Aroclor 1016	ND	0.0102	0.0204	ug/L	1	12/07/16 13:14	EPA 8082A	
Aroclor 1221	ND	0.0102	0.0204	"	"	"	"	
Aroclor 1232	ND	0.0102	0.0204	"	"	"	"	
Aroclor 1242	ND	0.0102	0.0204	"	"	"	"	
Aroclor 1248	ND	0.0102	0.0204	"	"	"	"	
Aroclor 1254	ND	0.0102	0.0204	"	"	"	"	
Aroclor 1260	**0.0205**	0.0102	0.0204	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 80 %*	*Limits: 39-120 %*	"	"	"	
B18-F-4 (A6K0789-06)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Aroclor 1016	ND	0.00952	0.0190	ug/L	1	12/07/16 10:00	EPA 8082A	
Aroclor 1221	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1232	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1242	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1248	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1254	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1260	ND	0.00952	0.0190	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 73 %*	*Limits: 39-120 %*	"	"	"	
B18-F-5 (A6K0789-07RE1)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Aroclor 1016	ND	0.0115	0.0230	ug/L	1	12/08/16 08:39	EPA 8082A	
Aroclor 1221	ND	0.0115	0.0230	"	"	"	"	
Aroclor 1232	ND	0.0115	0.0230	"	"	"	"	
Aroclor 1242	ND	0.0115	0.0230	"	"	"	"	
Aroclor 1248	ND	0.0115	0.0230	"	"	"	"	
Aroclor 1254	**0.0388**	0.0115	0.0230	"	"	"	"	P-10
Aroclor 1260	**0.0224**	0.0115	0.0230	"	"	"	"	J
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 74 %*	*Limits: 39-120 %*	"	"	"	
B18-F-6 (A6K0789-08)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Aroclor 1016	ND	0.00962	0.0192	ug/L	1	12/07/16 10:35	EPA 8082A	
Aroclor 1221	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1232	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1242	**1.26**	0.00962	0.0192	"	"	"	"	P-10

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-6 (A6K0789-08)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Aroclor 1248	ND	0.00962	0.0192	ug/L	1	"	EPA 8082A	
Aroclor 1254	**0.493**	0.00962	0.0192	"	"	"	"	P-10
Aroclor 1260	**0.137**	0.00962	0.0192	"	"	"	"	P-10
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 71 %*	*Limits: 39-120 %*	"	"	"	
B18-F-7 (A6K0789-09)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Aroclor 1016	ND	0.00962	0.0192	ug/L	1	12/07/16 10:53	EPA 8082A	
Aroclor 1221	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1232	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1242	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1248	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1254	**0.354**	0.00962	0.0192	"	"	"	"	P-10
Aroclor 1260	**0.354**	0.00962	0.0192	"	"	"	"	P-10
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 59 %*	*Limits: 39-120 %*	"	"	"	
B18-F-R1 (A6K0789-10)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Aroclor 1016	ND	0.00952	0.0190	ug/L	1	12/07/16 11:11	EPA 8082A	
Aroclor 1221	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1232	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1242	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1248	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1254	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1260	ND	0.00952	0.0190	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 59 %*	*Limits: 39-120 %*	"	"	"	
B18-F-R2 (A6K0789-11)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Aroclor 1016	ND	0.00952	0.0190	ug/L	1	12/07/16 11:28	EPA 8082A	
Aroclor 1221	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1232	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1242	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1248	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1254	ND	0.00952	0.0190	"	"	"	"	
Aroclor 1260	ND	0.00952	0.0190	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 67 %*	*Limits: 39-120 %*	"	"	"	
B18-F-R3 (A6K0789-12)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Aroclor 1016	ND	0.00962	0.0192	ug/L	1	12/07/16 11:46	EPA 8082A	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-R3 (A6K0789-12)			**Matrix: Water**		**Batch: 6120261**			**C-07**
Aroclor 1221	ND	0.00962	0.0192	ug/L	1	"	EPA 8082A	
Aroclor 1232	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1242	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1248	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1254	ND	0.00962	0.0192	"	"	"	"	
Aroclor 1260	ND	0.00962	0.0192	"	"	"	"	
Surrogate: Decachlorobiphenyl (Surr)			*Recovery: 64 %*	*Limits: 39-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB1 (A6K0789-01)			**Matrix: Water**		**Batch: 6110871**			
Acenaphthene	ND	0.0190	0.0190	ug/L	1	11/28/16 17:34	EPA 8270D	
Acenaphthylene	ND	0.00952	0.0190	"	"	"	"	
Anthracene	ND	0.00952	0.0190	"	"	"	"	
Benz(a)anthracene	**0.0122**	0.00952	0.0190	"	"	"	"	J
Benzo(a)pyrene	ND	0.0286	0.0286	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0190	0.0190	"	"	"	"	
Chrysene	**0.0114**	0.00952	0.0190	"	"	"	"	J
Dibenz(a,h)anthracene	ND	0.00952	0.0190	"	"	"	"	
Fluoranthene	**0.0204**	0.00952	0.0190	"	"	"	"	
Fluorene	**0.0114**	0.00952	0.0190	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	ND	0.0190	0.0190	"	"	"	"	
1-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
2-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
Naphthalene	ND	0.0381	0.0381	"	"	"	"	
Phenanthrene	**0.0307**	0.00952	0.0190	"	"	"	"	
Pyrene	**0.0181**	0.00952	0.0190	"	"	"	"	J
Carbazole	ND	0.0143	0.0286	"	"	"	"	
Dibenzofuran	**0.00996**	0.00952	0.0190	"	"	"	"	J
Butyl benzyl phthalate	ND	0.381	0.381	"	"	"	"	
Diethylphthalate	ND	0.190	0.381	"	"	"	"	
Dimethylphthalate	ND	0.190	0.381	"	"	"	"	
Di-n-butylphthalate	ND	0.190	0.381	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery: 72 %*	*Limits: 44-120 %*	"	"	"		
2-Fluorobiphenyl (Surr)		*66 %*	*Limits: 44-120 %*	"	"	"		
Phenol-d6 (Surr)		*24 %*	*Limits: 10-120 %*	"	"	"		
p-Terphenyl-d14 (Surr)		*84 %*	*Limits: 50-133 %*	"	"	"		
2-Fluorophenol (Surr)		*38 %*	*Limits: 19-120 %*	"	"	"		
2,4,6-Tribromophenol (Surr)		*109 %*	*Limits: 43-140 %*	"	"	"		

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Philip Nerenberg, Lab Director

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB1 (A6K0789-01RE1)			**Matrix: Water**		**Batch: 6110871**			
Bis(2-ethylhexyl)phthalate	**15.4**	3.81	7.62	ug/L	20	11/29/16 00:10	EPA 8270D	
Di-n-octyl phthalate	**20.5**	3.81	7.62	"	"	"	"	
B18-D-CB3 (A6K0789-02RE1)			**Matrix: Water**		**Batch: 6110871**			
Acenaphthene	ND	0.0952	0.190	ug/L	10	11/29/16 11:28	EPA 8270D	
Acenaphthylene	ND	0.0952	0.190	"	"	"	"	
Anthracene	ND	0.0952	0.190	"	"	"	"	
Benz(a)anthracene	**0.234**	0.0952	0.190	"	"	"	"	M-02
Benzo(a)pyrene	**0.415**	0.143	0.286	"	"	"	"	
Benzo(b)fluoranthene	**0.526**	0.143	0.286	"	"	"	"	M-02
Benzo(k)fluoranthene	**0.198**	0.143	0.286	"	"	"	"	J
Benzo(g,h,i)perylene	**0.426**	0.0952	0.190	"	"	"	"	
Chrysene	**0.471**	0.0952	0.190	"	"	"	"	M-02
Dibenz(a,h)anthracene	ND	0.0952	0.190	"	"	"	"	
Fluoranthene	**0.592**	0.0952	0.190	"	"	"	"	
Fluorene	ND	0.0952	0.190	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**0.405**	0.0952	0.190	"	"	"	"	
1-Methylnaphthalene	ND	0.190	0.381	"	"	"	"	
2-Methylnaphthalene	ND	0.190	0.381	"	"	"	"	
Naphthalene	ND	0.190	0.381	"	"	"	"	
Phenanthrene	**0.344**	0.0952	0.190	"	"	"	"	
Pyrene	**0.694**	0.0952	0.190	"	"	"	"	
Carbazole	ND	0.143	0.286	"	"	"	"	
Dibenzofuran	ND	0.0952	0.190	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**11.1**	1.90	3.81	"	"	"	"	
Butyl benzyl phthalate	ND	1.90	3.81	"	"	"	"	
Diethylphthalate	ND	1.90	3.81	"	"	"	"	
Dimethylphthalate	ND	1.90	3.81	"	"	"	"	
Di-n-butylphthalate	ND	1.90	3.81	"	"	"	"	
Di-n-octyl phthalate	ND	1.90	3.81	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery: 44 %*	*Limits: 44-120 %*		"	"	"	
2-Fluorobiphenyl (Surr)		*62 %*	*Limits: 44-120 %*		"	"	"	
Phenol-d6 (Surr)		*21 %*	*Limits: 10-120 %*		"	"	"	
p-Terphenyl-d14 (Surr)		*65 %*	*Limits: 50-133 %*		"	"	"	
2-Fluorophenol (Surr)		*28 %*	*Limits: 19-120 %*		"	"	"	
2,4,6-Tribromophenol (Surr)		*141 %*	*Limits: 43-140 %*		"	"	"	*Q-41, S-06*

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Philip Nerenberg, Lab Director

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-1 (A6K0789-03RE1)			**Matrix: Water**		**Batch: 6110871**			
Acenaphthene	ND	0.0417	0.0833	ug/L	4	11/29/16 12:04	EPA 8270D	
Acenaphthylene	ND	0.0417	0.0833	"	"	"	"	
Anthracene	ND	0.0417	0.0833	"	"	"	"	
Benz(a)anthracene	**0.0524**	0.0417	0.0833	"	"	"	"	J
Benzo(a)pyrene	**0.0703**	0.0625	0.125	"	"	"	"	J
Benzo(b)fluoranthene	**0.0698**	0.0625	0.125	"	"	"	"	J
Benzo(k)fluoranthene	ND	0.0625	0.125	"	"	"	"	
Benzo(g,h,i)perylene	**0.0569**	0.0417	0.0833	"	"	"	"	J
Chrysene	**0.0602**	0.0417	0.0833	"	"	"	"	J
Dibenz(a,h)anthracene	ND	0.0417	0.0833	"	"	"	"	
Fluoranthene	**0.0826**	0.0417	0.0833	"	"	"	"	J
Fluorene	ND	0.0417	0.0833	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0417	0.0833	"	"	"	"	
1-Methylnaphthalene	ND	0.0833	0.167	"	"	"	"	
2-Methylnaphthalene	ND	0.0833	0.167	"	"	"	"	
Naphthalene	ND	0.0833	0.167	"	"	"	"	
Phenanthrene	**0.0446**	0.0417	0.0833	"	"	"	"	J
Pyrene	**0.0921**	0.0417	0.0833	"	"	"	"	
Carbazole	ND	0.0625	0.125	"	"	"	"	
Dibenzofuran	ND	0.0417	0.0833	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	0.833	1.67	"	"	"	"	
Butyl benzyl phthalate	ND	0.833	1.67	"	"	"	"	
Diethylphthalate	ND	0.833	1.67	"	"	"	"	
Dimethylphthalate	ND	0.833	1.67	"	"	"	"	
Di-n-butylphthalate	ND	0.833	1.67	"	"	"	"	
Di-n-octyl phthalate	ND	0.833	1.67	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 51 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*60 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*22 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*78 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*34 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*121 %*	*Limits: 43-140 %*	"	"	"	*Q-41*

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-2 (A6K0789-04)			**Matrix: Water**		**Batch: 6110871**			
Acenaphthene	ND	0.00952	0.0190	ug/L	1	11/28/16 19:13	EPA 8270D	
Acenaphthylene	ND	0.00952	0.0190	"	"	"	"	
Anthracene	ND	0.00952	0.0190	"	"	"	"	
Benz(a)anthracene	ND	0.0190	0.0190	"	"	"	"	
Benzo(a)pyrene	ND	0.0286	0.0286	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0286	0.0286	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0190	0.0190	"	"	"	"	
Chrysene	**0.00952**	0.00952	0.0190	"	"	"	"	J
Dibenz(a,h)anthracene	ND	0.00952	0.0190	"	"	"	"	
Fluoranthene	**0.0170**	0.00952	0.0190	"	"	"	"	J
Fluorene	**0.0110**	0.00952	0.0190	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	ND	0.00952	0.0190	"	"	"	"	
1-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
2-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
Naphthalene	ND	0.0190	0.0381	"	"	"	"	
Phenanthrene	**0.0200**	0.00952	0.0190	"	"	"	"	
Pyrene	**0.0207**	0.00952	0.0190	"	"	"	"	
Carbazole	ND	0.0143	0.0286	"	"	"	"	
Dibenzofuran	ND	0.00952	0.0190	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**0.811**	0.190	0.381	"	"	"	"	
Butyl benzyl phthalate	ND	0.190	0.381	"	"	"	"	
Diethylphthalate	ND	0.190	0.381	"	"	"	"	
Dimethylphthalate	ND	0.190	0.381	"	"	"	"	
Di-n-butylphthalate	ND	0.190	0.381	"	"	"	"	
Di-n-octyl phthalate	ND	0.381	0.381	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 63 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*52 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*21 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*64 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*32 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*98 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-3 (A6K0789-05)			**Matrix: Water**		**Batch: 6110871**			
Acenaphthene	ND	0.00943	0.0189	ug/L	1	11/28/16 19:50	EPA 8270D	
Acenaphthylene	ND	0.00943	0.0189	"	"	"	"	
Anthracene	ND	0.00943	0.0189	"	"	"	"	
Benz(a)anthracene	ND	0.00943	0.0189	"	"	"	"	
Benzo(a)pyrene	ND	0.0142	0.0283	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0142	0.0283	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0142	0.0283	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.00943	0.0189	"	"	"	"	
Chrysene	ND	0.00943	0.0189	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00943	0.0189	"	"	"	"	
Fluoranthene	**0.0120**	0.00943	0.0189	"	"	"	"	J
Fluorene	ND	0.00943	0.0189	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00943	0.0189	"	"	"	"	
1-Methylnaphthalene	ND	0.0189	0.0377	"	"	"	"	
2-Methylnaphthalene	ND	0.0189	0.0377	"	"	"	"	
Naphthalene	ND	0.0189	0.0377	"	"	"	"	
Phenanthrene	**0.0155**	0.00943	0.0189	"	"	"	"	J
Pyrene	**0.0145**	0.00943	0.0189	"	"	"	"	J
Carbazole	ND	0.0142	0.0283	"	"	"	"	
Dibenzofuran	ND	0.00943	0.0189	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**0.960**	0.189	0.377	"	"	"	"	
Butyl benzyl phthalate	ND	0.189	0.377	"	"	"	"	
Diethylphthalate	ND	0.189	0.377	"	"	"	"	
Dimethylphthalate	ND	0.189	0.377	"	"	"	"	
Di-n-butylphthalate	ND	0.189	0.377	"	"	"	"	
Di-n-octyl phthalate	ND	0.189	0.377	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 46 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*40 %*	*Limits: 44-120 %*	"	"	"	*S-06*
Phenol-d6 (Surr)			*16 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*73 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*22 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*97 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-4 (A6K0789-06)			**Matrix: Water**		**Batch: 6110871**			
Acenaphthene	ND	0.00962	0.0192	ug/L	1	11/28/16 20:28	EPA 8270D	
Acenaphthylene	ND	0.00962	0.0192	"	"	"	"	
Anthracene	**0.0177**	0.00962	0.0192	"	"	"	"	J
Benz(a)anthracene	ND	0.00962	0.0192	"	"	"	"	
Benzo(a)pyrene	ND	0.0144	0.0288	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0144	0.0288	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0144	0.0288	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.00962	0.0192	"	"	"	"	
Chrysene	ND	0.00962	0.0192	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00962	0.0192	"	"	"	"	
Fluoranthene	ND	0.00962	0.0192	"	"	"	"	
Fluorene	ND	0.00962	0.0192	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00962	0.0192	"	"	"	"	
1-Methylnaphthalene	ND	0.0192	0.0385	"	"	"	"	
2-Methylnaphthalene	ND	0.0192	0.0385	"	"	"	"	
Naphthalene	ND	0.0192	0.0385	"	"	"	"	
Phenanthrene	**0.0161**	0.00962	0.0192	"	"	"	"	J
Pyrene	ND	0.00962	0.0192	"	"	"	"	
Carbazole	ND	0.0144	0.0288	"	"	"	"	
Dibenzofuran	ND	0.00962	0.0192	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**1.55**	0.192	0.385	"	"	"	"	
Butyl benzyl phthalate	ND	0.192	0.385	"	"	"	"	
Diethylphthalate	ND	0.192	0.385	"	"	"	"	
Dimethylphthalate	ND	0.192	0.385	"	"	"	"	
Di-n-butylphthalate	ND	0.192	0.385	"	"	"	"	
Di-n-octyl phthalate	ND	0.192	0.385	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 77 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*74 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*27 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*80 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*39 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*116 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-5 (A6K0789-07RE1)			**Matrix: Water**		**Batch: 6110871**			
Acenaphthene	ND	0.0385	0.0769	ug/L	4	11/29/16 12:40	EPA 8270D	
Acenaphthylene	**0.0734**	0.0385	0.0769	"	"	"	"	J
Anthracene	**0.107**	0.0385	0.0769	"	"	"	"	
Benz(a)anthracene	**0.182**	0.0385	0.0769	"	"	"	"	M-02
Benzo(a)pyrene	**0.366**	0.0577	0.115	"	"	"	"	
Benzo(b)fluoranthene	**0.809**	0.0577	0.115	"	"	"	"	M-02
Benzo(k)fluoranthene	**0.251**	0.0577	0.115	"	"	"	"	M-02
Benzo(g,h,i)perylene	**0.407**	0.0385	0.0769	"	"	"	"	
Chrysene	**0.582**	0.0385	0.0769	"	"	"	"	M-02
Dibenz(a,h)anthracene	**0.0756**	0.0385	0.0769	"	"	"	"	J
Fluoranthene	**0.361**	0.0385	0.0769	"	"	"	"	
Fluorene	ND	0.0385	0.0769	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**0.384**	0.0385	0.0769	"	"	"	"	
1-Methylnaphthalene	ND	0.0769	0.154	"	"	"	"	
2-Methylnaphthalene	ND	0.0769	0.154	"	"	"	"	
Naphthalene	ND	0.0769	0.154	"	"	"	"	
Phenanthrene	**0.0751**	0.0385	0.0769	"	"	"	"	J
Pyrene	**0.415**	0.0385	0.0769	"	"	"	"	
Carbazole	**0.0625**	0.0577	0.115	"	"	"	"	J
Dibenzofuran	ND	0.0385	0.0769	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	0.769	1.54	"	"	"	"	
Butyl benzyl phthalate	ND	0.769	1.54	"	"	"	"	
Diethylphthalate	ND	0.769	1.54	"	"	"	"	
Dimethylphthalate	ND	0.769	1.54	"	"	"	"	
Di-n-butylphthalate	ND	0.769	1.54	"	"	"	"	
Di-n-octyl phthalate	ND	0.769	1.54	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 63 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*76 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*23 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*64 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*38 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*129 %*	*Limits: 43-140 %*	"	"	"	*Q-41*

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-6 (A6K0789-08)			**Matrix: Water**		**Batch: 6110871**			
Acenaphthene	ND	0.396	0.792	ug/L	40	11/28/16 22:08	EPA 8270D	
Acenaphthylene	ND	0.396	0.792	"	"	"	"	
Anthracene	ND	0.396	0.792	"	"	"	"	
Benz(a)anthracene	**1.67**	0.396	0.792	"	"	"	"	M-02
Benzo(a)pyrene	**2.07**	0.594	1.19	"	"	"	"	
Benzo(b)fluoranthene	**2.75**	0.594	1.19	"	"	"	"	M-02
Benzo(k)fluoranthene	**0.923**	0.594	1.19	"	"	"	"	J
Benzo(g,h,i)perylene	**1.51**	0.396	0.792	"	"	"	"	
Chrysene	**2.66**	0.396	0.792	"	"	"	"	M-02
Dibenz(a,h)anthracene	ND	0.396	0.792	"	"	"	"	
Fluoranthene	**3.72**	0.396	0.792	"	"	"	"	
Fluorene	ND	0.396	0.792	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**1.15**	0.396	0.792	"	"	"	"	
1-Methylnaphthalene	ND	0.792	1.58	"	"	"	"	
2-Methylnaphthalene	ND	0.792	1.58	"	"	"	"	
Naphthalene	ND	0.792	1.58	"	"	"	"	
Phenanthrene	**1.77**	0.396	0.792	"	"	"	"	
Pyrene	**4.07**	0.396	0.792	"	"	"	"	
Carbazole	ND	0.594	1.19	"	"	"	"	
Dibenzofuran	ND	0.396	0.792	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**12.4**	7.92	15.8	"	"	"	"	J
Butyl benzyl phthalate	ND	7.92	15.8	"	"	"	"	
Diethylphthalate	ND	7.92	15.8	"	"	"	"	
Dimethylphthalate	ND	7.92	15.8	"	"	"	"	
Di-n-butylphthalate	ND	7.92	15.8	"	"	"	"	
Di-n-octyl phthalate	ND	7.92	15.8	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery: 40 %*	*Limits: 44-120 %*	"	"	"	"	*S-05*
2-Fluorobiphenyl (Surr)		*63 %*	*Limits: 44-120 %*	"	"	"	"	*S-05*
Phenol-d6 (Surr)		*18 %*	*Limits: 10-120 %*	"	"	"	"	*S-05*
p-Terphenyl-d14 (Surr)		*77 %*	*Limits: 50-133 %*	"	"	"	"	*S-05*
2-Fluorophenol (Surr)		*21 %*	*Limits: 19-120 %*	"	"	"	"	*S-05*
2,4,6-Tribromophenol (Surr)		*125 %*	*Limits: 43-140 %*	"	"	"	"	*S-05*

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-7 (A6K0789-09RE1)			**Matrix: Water**		**Batch: 6110871**			
Acenaphthene	ND	0.0385	0.0769	ug/L	4	11/29/16 13:15	EPA 8270D	
Acenaphthylene	ND	0.0385	0.0769	"	"	"	"	
Anthracene	ND	0.0385	0.0769	"	"	"	"	
Benz(a)anthracene	**0.0661**	0.0385	0.0769	"	"	"	"	J
Benzo(a)pyrene	**0.141**	0.0577	0.115	"	"	"	"	
Benzo(b)fluoranthene	**0.141**	0.0577	0.115	"	"	"	"	M-02
Benzo(k)fluoranthene	ND	0.0577	0.115	"	"	"	"	
Benzo(g,h,i)perylene	**0.171**	0.0385	0.0769	"	"	"	"	
Chrysene	**0.125**	0.0385	0.0769	"	"	"	"	M-02
Dibenz(a,h)anthracene	ND	0.0385	0.0769	"	"	"	"	
Fluoranthene	**0.185**	0.0385	0.0769	"	"	"	"	
Fluorene	ND	0.0385	0.0769	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**0.106**	0.0385	0.0769	"	"	"	"	
1-Methylnaphthalene	ND	0.0769	0.154	"	"	"	"	
2-Methylnaphthalene	ND	0.0769	0.154	"	"	"	"	
Naphthalene	ND	0.0769	0.154	"	"	"	"	
Phenanthrene	**0.0936**	0.0385	0.0769	"	"	"	"	
Pyrene	**0.263**	0.0385	0.0769	"	"	"	"	
Carbazole	ND	0.0577	0.115	"	"	"	"	
Dibenzofuran	ND	0.0385	0.0769	"	"	"	"	
Bis(2-ethylhexyl)phthalate	**0.832**	0.769	1.54	"	"	"	"	J
Butyl benzyl phthalate	ND	0.769	1.54	"	"	"	"	
Diethylphthalate	ND	0.769	1.54	"	"	"	"	
Dimethylphthalate	ND	0.769	1.54	"	"	"	"	
Di-n-butylphthalate	ND	0.769	1.54	"	"	"	"	
Di-n-octyl phthalate	ND	0.769	1.54	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)		*Recovery: 32 %*	*Limits: 44-120 %*	"	"	"	"	*S-06*
2-Fluorobiphenyl (Surr)		*41 %*	*Limits: 44-120 %*	"	"	"	"	*S-06*
Phenol-d6 (Surr)		*12 %*	*Limits: 10-120 %*	"	"	"	"	
p-Terphenyl-d14 (Surr)		*75 %*	*Limits: 50-133 %*	"	"	"	"	
2-Fluorophenol (Surr)		*19 %*	*Limits: 19-120 %*	"	"	"	"	
2,4,6-Tribromophenol (Surr)		*117 %*	*Limits: 43-140 %*	"	"	"	"	*Q-41*

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-R1 (A6K0789-10)			**Matrix: Water**		**Batch: 6110871**			
Acenaphthene	ND	0.00952	0.0190	ug/L	1	11/28/16 21:05	EPA 8270D	
Acenaphthylene	ND	0.00952	0.0190	"	"	"	"	
Anthracene	ND	0.00952	0.0190	"	"	"	"	
Benz(a)anthracene	ND	0.00952	0.0190	"	"	"	"	
Benzo(a)pyrene	ND	0.0143	0.0286	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.00952	0.0190	"	"	"	"	
Chrysene	ND	0.00952	0.0190	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00952	0.0190	"	"	"	"	
Fluoranthene	ND	0.00952	0.0190	"	"	"	"	
Fluorene	ND	0.00952	0.0190	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00952	0.0190	"	"	"	"	
1-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
2-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
Naphthalene	ND	0.0190	0.0381	"	"	"	"	
Phenanthrene	**0.0135**	0.00952	0.0190	"	"	"	"	J
Pyrene	ND	0.00952	0.0190	"	"	"	"	
Carbazole	ND	0.0143	0.0286	"	"	"	"	
Dibenzofuran	ND	0.00952	0.0190	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	0.190	0.381	"	"	"	"	
Butyl benzyl phthalate	ND	0.190	0.381	"	"	"	"	
Diethylphthalate	ND	0.190	0.381	"	"	"	"	
Dimethylphthalate	ND	0.190	0.381	"	"	"	"	
Di-n-butylphthalate	ND	0.190	0.381	"	"	"	"	
Di-n-octyl phthalate	ND	0.190	0.381	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 56 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*40 %*	*Limits: 44-120 %*	"	"	"	*S-06*
Phenol-d6 (Surr)			*17 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*63 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*26 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*77 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-R2 (A6K0789-11)			**Matrix: Water**		**Batch: 6110871**			
Acenaphthene	ND	0.00943	0.0189	ug/L	1	11/28/16 21:42	EPA 8270D	
Acenaphthylene	ND	0.00943	0.0189	"	"	"	"	
Anthracene	ND	0.00943	0.0189	"	"	"	"	
Benz(a)anthracene	ND	0.00943	0.0189	"	"	"	"	
Benzo(a)pyrene	**0.0142**	0.0142	0.0283	"	"	"	"	J
Benzo(b)fluoranthene	**0.0142**	0.0142	0.0283	"	"	"	"	J
Benzo(k)fluoranthene	ND	0.0142	0.0283	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.00943	0.0189	"	"	"	"	
Chrysene	ND	0.00943	0.0189	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00943	0.0189	"	"	"	"	
Fluoranthene	**0.0194**	0.00943	0.0189	"	"	"	"	
Fluorene	ND	0.00943	0.0189	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00943	0.0189	"	"	"	"	
1-Methylnaphthalene	ND	0.0189	0.0377	"	"	"	"	
2-Methylnaphthalene	ND	0.0189	0.0377	"	"	"	"	
Naphthalene	**0.0241**	0.0189	0.0377	"	"	"	"	J
Phenanthrene	**0.0252**	0.00943	0.0189	"	"	"	"	
Pyrene	**0.0173**	0.00943	0.0189	"	"	"	"	J
Carbazole	ND	0.0142	0.0283	"	"	"	"	
Dibenzofuran	**0.00945**	0.00943	0.0189	"	"	"	"	J
Bis(2-ethylhexyl)phthalate	**0.567**	0.189	0.377	"	"	"	"	
Butyl benzyl phthalate	ND	0.189	0.377	"	"	"	"	
Diethylphthalate	ND	0.189	0.377	"	"	"	"	
Dimethylphthalate	ND	0.189	0.377	"	"	"	"	
Di-n-butylphthalate	ND	0.189	0.377	"	"	"	"	
Di-n-octyl phthalate	ND	0.189	0.377	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 82 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*61 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*27 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*73 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*40 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*107 %*	*Limits: 43-140 %*	"	"	"	

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-R3 (A6K0789-12)			**Matrix: Water**		**Batch: 6110871**			
Acenaphthene	ND	0.00971	0.0194	ug/L	1	11/28/16 22:19	EPA 8270D	
Acenaphthylene	ND	0.00971	0.0194	"	"	"	"	
Anthracene	ND	0.00971	0.0194	"	"	"	"	
Benz(a)anthracene	**0.0148**	0.00971	0.0194	"	"	"	"	J
Benzo(a)pyrene	**0.0159**	0.0146	0.0291	"	"	"	"	J
Benzo(b)fluoranthene	**0.0294**	0.0146	0.0291	"	"	"	"	M-02
Benzo(k)fluoranthene	ND	0.0146	0.0291	"	"	"	"	
Benzo(g,h,i)perylene	**0.0160**	0.00971	0.0194	"	"	"	"	J
Chrysene	**0.0183**	0.00971	0.0194	"	"	"	"	J
Dibenz(a,h)anthracene	ND	0.00971	0.0194	"	"	"	"	
Fluoranthene	**0.0302**	0.00971	0.0194	"	"	"	"	
Fluorene	ND	0.00971	0.0194	"	"	"	"	
Indeno(1,2,3-cd)pyrene	**0.0152**	0.00971	0.0194	"	"	"	"	J
1-Methylnaphthalene	ND	0.0194	0.0388	"	"	"	"	
2-Methylnaphthalene	ND	0.0194	0.0388	"	"	"	"	
Naphthalene	ND	0.0194	0.0388	"	"	"	"	
Phenanthrene	**0.0289**	0.00971	0.0194	"	"	"	"	
Pyrene	**0.0296**	0.00971	0.0194	"	"	"	"	
Carbazole	ND	0.0146	0.0291	"	"	"	"	
Dibenzofuran	ND	0.00971	0.0194	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	0.194	0.388	"	"	"	"	
Butyl benzyl phthalate	ND	0.194	0.388	"	"	"	"	
Diethylphthalate	ND	0.194	0.388	"	"	"	"	
Dimethylphthalate	ND	0.194	0.388	"	"	"	"	
Di-n-butylphthalate	ND	0.194	0.388	"	"	"	"	
Di-n-octyl phthalate	ND	0.194	0.388	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 53 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*43 %*	*Limits: 44-120 %*	"	"	"	*S-06*
Phenol-d6 (Surr)			*17 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*73 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*27 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*101 %*	*Limits: 43-140 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB1 (A6K0789-01)			**Matrix: Water**					
Batch: 6120323								
Aluminum	**31.7**	25.0	50.0	ug/L	1	12/08/16 12:28	EPA 6020A	J
Antimony	**9.28**	0.500	1.00	"	"	"	"	
Cadmium	ND	0.0400	0.200	"	"	"	"	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**9.63**	0.500	1.00	"	"	"	"	
Lead	**0.367**	0.100	0.200	"	"	"	"	
Manganese	**8.90**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**0.500**	0.500	1.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**18.3**	2.00	4.00	"	"	"	"	
B18-D-CB1 (A6K0789-01RE1)			**Matrix: Water**					
Batch: 6120323								
Arsenic	ND	0.500	1.00	ug/L	1	12/09/16 16:05	EPA 6020A	
B18-D-CB3 (A6K0789-02)			**Matrix: Water**					
Batch: 6120323								
Aluminum	**5370**	25.0	50.0	ug/L	1	12/08/16 12:31	EPA 6020A	
Antimony	**7.06**	0.500	1.00	"	"	"	"	
Arsenic	**3.01**	0.500	1.00	"	"	"	"	
Cadmium	**0.633**	0.0400	0.200	"	"	"	"	
Chromium	**23.6**	0.500	1.00	"	"	"	"	
Copper	**156**	0.500	1.00	"	"	"	"	
Lead	**130**	0.100	0.200	"	"	"	"	
Manganese	**498**	0.500	1.00	"	"	"	"	
Mercury	**0.0400**	0.0400	0.0800	"	"	"	"	J
Nickel	**11.8**	0.500	1.00	"	"	"	"	
Silver	**0.144**	0.100	0.200	"	"	"	"	J
Zinc	**802**	2.00	4.00	"	"	"	"	
B18-F-1 (A6K0789-03)			**Matrix: Water**					
Batch: 6120323								
Aluminum	**1090**	25.0	50.0	ug/L	1	12/08/16 12:34	EPA 6020A	
Antimony	**0.678**	0.500	1.00	"	"	"	"	J
Arsenic	**1.06**	0.500	1.00	"	"	"	"	
Cadmium	**0.100**	0.0400	0.200	"	"	"	"	J

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Tigard, OR 97223
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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-1 (A6K0789-03)			**Matrix: Water**					
Chromium	**6.18**	0.500	1.00	ug/L	1	"	EPA 6020A	
Copper	**13.2**	0.500	1.00	"	"	"	"	
Lead	**5.59**	0.100	0.200	"	"	"	"	
Manganese	**63.0**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**3.89**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**61.0**	2.00	4.00	"	"	"	"	
B18-F-2 (A6K0789-04)			**Matrix: Water**					
Batch: 6120323								
Aluminum	**160**	25.0	50.0	ug/L	1	12/08/16 12:37	EPA 6020A	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.122**	0.0400	0.200	"	"	"	"	J
Chromium	**2.64**	0.500	1.00	"	"	"	"	
Copper	**6.09**	0.500	1.00	"	"	"	"	
Lead	**2.08**	0.100	0.200	"	"	"	"	
Manganese	**36.5**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**0.667**	0.500	1.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**34.9**	2.00	4.00	"	"	"	"	
B18-F-3 (A6K0789-05)			**Matrix: Water**					
Batch: 6120323								
Aluminum	**64.4**	25.0	50.0	ug/L	1	12/08/16 12:56	EPA 6020A	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	**0.967**	0.500	1.00	"	"	"	"	J
Cadmium	**0.122**	0.0400	0.200	"	"	"	"	J
Chromium	**1.32**	0.500	1.00	"	"	"	"	
Copper	**29.8**	0.500	1.00	"	"	"	"	
Lead	**3.23**	0.100	0.200	"	"	"	"	
Manganese	**68.3**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**3.16**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	

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Tigard, OR 97223
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503-718-0333 Fax

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7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-3 (A6K0789-05)			**Matrix: Water**					
Zinc	**35.0**	2.00	4.00	ug/L	1	"	EPA 6020A	
B18-F-4 (A6K0789-06)			**Matrix: Water**					
Batch: 6120323								
Aluminum	**79.7**	25.0	50.0	ug/L	1	12/08/16 13:00	EPA 6020A	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	ND	0.0400	0.200	"	"	"	"	
Chromium	**0.922**	0.500	1.00	"	"	"	"	J
Copper	**2.46**	0.500	1.00	"	"	"	"	
Lead	**0.244**	0.100	0.200	"	"	"	"	
Manganese	**69.8**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**1.64**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**19.0**	2.00	4.00	"	"	"	"	
B18-F-5 (A6K0789-07)			**Matrix: Water**					
Batch: 6120323								
Aluminum	**1730**	25.0	50.0	ug/L	1	12/08/16 13:05	EPA 6020A	
Antimony	**0.611**	0.500	1.00	"	"	"	"	J
Arsenic	**0.978**	0.500	1.00	"	"	"	"	J
Cadmium	**0.200**	0.0400	0.200	"	"	"	"	
Chromium	**31.9**	0.500	1.00	"	"	"	"	
Copper	**16.6**	0.500	1.00	"	"	"	"	
Lead	**18.5**	0.100	0.200	"	"	"	"	
Manganese	**442**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**3.41**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**78.4**	2.00	4.00	"	"	"	"	
B18-F-6 (A6K0789-08)			**Matrix: Water**					
Batch: 6120323								
Aluminum	**10900**	25.0	50.0	ug/L	1	12/08/16 13:08	EPA 6020A	
Antimony	**6.82**	0.500	1.00	"	"	"	"	
Arsenic	**6.39**	0.500	1.00	"	"	"	"	
Cadmium	**5.58**	0.0400	0.200	"	"	"	"	

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-6 (A6K0789-08)			**Matrix: Water**					
Chromium	**196**	0.500	1.00	ug/L	1	"	EPA 6020A	
Copper	**317**	0.500	1.00	"	"	"	"	
Lead	**460**	0.100	0.200	"	"	"	"	
Mercury	**2.08**	0.0400	0.0800	"	"	"	"	
Nickel	**48.6**	0.500	1.00	"	"	"	"	
Silver	**1.19**	0.100	0.200	"	"	"	"	
Zinc	**2180**	2.00	4.00	"	"	"	"	
B18-F-6 (A6K0789-08RE1)			**Matrix: Water**					
Batch: 6120323								
Manganese	**4070**	5.00	10.0	ug/L	10	12/09/16 16:11	EPA 6020A	
B18-F-7 (A6K0789-09)			**Matrix: Water**					
Batch: 6120323								
Aluminum	**1080**	25.0	50.0	ug/L	1	12/08/16 13:11	EPA 6020A	
Antimony	**1.77**	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.333**	0.0400	0.200	"	"	"	"	
Chromium	**9.57**	0.500	1.00	"	"	"	"	
Copper	**58.1**	0.500	1.00	"	"	"	"	
Lead	**109**	0.100	0.200	"	"	"	"	
Manganese	**72.0**	0.500	1.00	"	"	"	"	
Nickel	**3.32**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**149**	2.00	4.00	"	"	"	"	
B18-F-7 (A6K0789-09RE1)			**Matrix: Water**					
Batch: 6120323								
Mercury	**0.169**	0.0400	0.0800	ug/L	1	12/09/16 16:08	EPA 6020A	
B18-F-R1 (A6K0789-10)			**Matrix: Water**					
Batch: 6120323								
Aluminum	ND	25.0	50.0	ug/L	1	12/08/16 13:14	EPA 6020A	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	ND	0.0400	0.200	"	"	"	"	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**1.07**	0.500	1.00	"	"	"	"	
Lead	**0.533**	0.100	0.200	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-R1 (A6K0789-10)			**Matrix: Water**					
Manganese	**5.57**	0.500	1.00	ug/L	1	"	EPA 6020A	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	ND	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**11.3**	2.00	4.00	"	"	"	"	
B18-F-R2 (A6K0789-11)			**Matrix: Water**					
Batch: 6120323								
Aluminum	**32.5**	25.0	50.0	ug/L	1	12/08/16 13:17	EPA 6020A	J
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	ND	0.0400	0.200	"	"	"	"	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**3.59**	0.500	1.00	"	"	"	"	
Lead	**0.700**	0.100	0.200	"	"	"	"	
Manganese	**7.00**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**0.622**	0.500	1.00	"	"	"	"	J
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**13.5**	2.00	4.00	"	"	"	"	
B18-F-R3 (A6K0789-12)			**Matrix: Water**					
Batch: 6120323								
Aluminum	**652**	25.0	50.0	ug/L	1	12/08/16 13:20	EPA 6020A	
Antimony	ND	0.500	1.00	"	"	"	"	
Arsenic	ND	0.500	1.00	"	"	"	"	
Cadmium	**0.0889**	0.0400	0.200	"	"	"	"	J
Chromium	**7.56**	0.500	1.00	"	"	"	"	
Copper	**8.38**	0.500	1.00	"	"	"	"	
Lead	**6.41**	0.100	0.200	"	"	"	"	
Manganese	**202**	0.500	1.00	"	"	"	"	
Mercury	ND	0.0400	0.0800	"	"	"	"	
Nickel	**2.16**	0.500	1.00	"	"	"	"	
Silver	ND	0.100	0.200	"	"	"	"	
Zinc	**71.8**	2.00	4.00	"	"	"	"	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-D-CB1 (A6K0789-01)			**Matrix: Water**					
Batch: 6110903								
Total Suspended Solids	ND	5.00	5.00	mg/L	1	11/29/16 14:41	SM 2540 D	
Batch: 6110917								
Total Organic Carbon	ND	1.00	1.00	"	"	11/30/16 00:17	SM 5310 B	
B18-D-CB3 (A6K0789-02)			**Matrix: Water**					
Batch: 6110903								
Total Suspended Solids	**245**	5.00	5.00	mg/L	1	11/29/16 14:41	SM 2540 D	
Batch: 6110917								
Total Organic Carbon	**8.26**	1.00	1.00	"	"	11/30/16 00:17	SM 5310 B	
B18-F-1 (A6K0789-03)			**Matrix: Water**					
Batch: 6110903								
Total Suspended Solids	**37.0**	5.00	5.00	mg/L	1	11/29/16 14:41	SM 2540 D	
Batch: 6110917								
Total Organic Carbon	**4.36**	1.00	1.00	"	"	11/30/16 00:17	SM 5310 B	
B18-F-2 (A6K0789-04)			**Matrix: Water**					
Batch: 6110876								
Total Suspended Solids	**10.0**	5.00	5.00	mg/L	1	11/28/16 18:35	SM 2540 D	
Batch: 6110917								
Total Organic Carbon	**1.09**	1.00	1.00	"	"	11/30/16 00:17	SM 5310 B	
B18-F-3 (A6K0789-05)			**Matrix: Water**					
Batch: 6110876								
Total Suspended Solids	ND	5.00	5.00	mg/L	1	11/28/16 18:35	SM 2540 D	
Batch: 6110917								
Total Organic Carbon	**1.92**	1.00	1.00	"	"	11/30/16 00:17	SM 5310 B	
B18-F-4 (A6K0789-06)			**Matrix: Water**					
Batch: 6110876								
Total Suspended Solids	ND	5.00	5.00	mg/L	1	11/28/16 18:35	SM 2540 D	
Batch: 6110917								
Total Organic Carbon	**6.45**	1.00	1.00	"	"	11/30/16 00:17	SM 5310 B	
B18-F-5 (A6K0789-07)			**Matrix: Water**					
Batch: 6110876								
Total Suspended Solids	**88.0**	5.00	5.00	mg/L	1	11/28/16 18:35	SM 2540 D	
Batch: 6110917								
Total Organic Carbon	**8.35**	1.00	1.00	"	"	11/30/16 00:17	SM 5310 B	
B18-F-6 (A6K0789-08)			**Matrix: Water**					

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
B18-F-6 (A6K0789-08)			**Matrix: Water**					
Batch: 6110903								
Total Suspended Solids	**618**	10.0	10.0	mg/L	1	11/29/16 14:41	SM 2540 D	
Batch: 6110917								
Total Organic Carbon	**3.00**	1.00	1.00	"	"	11/30/16 00:17	SM 5310 B	
B18-F-7 (A6K0789-09)			**Matrix: Water**					
Batch: 6110903								
Total Suspended Solids	**52.0**	5.00	5.00	mg/L	1	11/29/16 14:41	SM 2540 D	
Batch: 6110917								
Total Organic Carbon	**1.14**	1.00	1.00	"	"	11/30/16 00:17	SM 5310 B	
B18-F-R1 (A6K0789-10)			**Matrix: Water**					
Batch: 6110903								
Total Suspended Solids	ND	5.00	5.00	mg/L	1	11/29/16 14:41	SM 2540 D	
Batch: 6110917								
Total Organic Carbon	ND	1.00	1.00	"	"	11/30/16 00:17	SM 5310 B	
B18-F-R2 (A6K0789-11)			**Matrix: Water**					
Batch: 6110917								
Total Organic Carbon	**1.10**	1.00	1.00	mg/L	1	11/30/16 00:17	SM 5310 B	
Batch: 6110925								
Total Suspended Solids	ND	5.00	5.00	"	"	11/30/16 08:59	SM 2540 D	
B18-F-R3 (A6K0789-12)			**Matrix: Water**					
Batch: 6110917								
Total Organic Carbon	ND	1.00	1.00	mg/L	1	11/30/16 00:17	SM 5310 B	
Batch: 6110925								
Total Suspended Solids	**24.0**	5.00	5.00	"	"	11/30/16 08:59	SM 2540 D	

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110943 - EPA 3510C (Fuels/Acid Ext.)									**Water**			
Blank (6110943-BLK1)					Prepared: 11/30/16 07:17 Analyzed: 11/30/16 21:51							
NWTPH-Dx												
Diesel	ND	0.100	0.200	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.200	0.400	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 84 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS (6110943-BS1)					Prepared: 11/30/16 07:17 Analyzed: 11/30/16 22:12							
NWTPH-Dx												
Diesel	1.07	0.100	0.200	mg/L	1	1.25	---	86	58-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 90 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS Dup (6110943-BSD1)					Prepared: 11/30/16 07:17 Analyzed: 11/30/16 22:32							**Q-19**
NWTPH-Dx												
Diesel	1.04	0.100	0.200	mg/L	1	1.25	---	83	58-115%	3	20%	
Surr: o-Terphenyl (Surr)			*Recovery: 84 %*	*Limits: 50-150 %*		*Dilution: 1x*						
Batch 6120133 - EPA 3510C (Fuels/Acid Ext.)									**Water**			
Blank (6120133-BLK1)					Prepared: 12/01/16 12:47 Analyzed: 12/01/16 21:59							
NWTPH-Dx												
Diesel	ND	0.0909	0.182	mg/L	1	---	---	---	---	---	---	
Oil	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 95 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS (6120133-BS1)					Prepared: 12/01/16 12:47 Analyzed: 12/01/16 22:19							
NWTPH-Dx												
Diesel	1.06	0.100	0.200	mg/L	1	1.25	---	85	58-115%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 99 %*	*Limits: 50-150 %*		*Dilution: 1x*						
LCS Dup (6120133-BSD1)					Prepared: 12/01/16 12:47 Analyzed: 12/01/16 22:40							**Q-19**
NWTPH-Dx												
Diesel	1.12	0.100	0.200	mg/L	1	1.25	---	90	58-115%	5	20%	
Surr: o-Terphenyl (Surr)			*Recovery: 97 %*	*Limits: 50-150 %*		*Dilution: 1x*						

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Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110906 - EPA 5030B									Water			
Blank (6110906-BLK1)					Prepared: 11/29/16 10:20 Analyzed: 11/29/16 12:38							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 104 %*		*Limits: 50-150 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Sur)			*93 %*		*50-150 %*				*"*			
LCS (6110906-BS2)					Prepared: 11/29/16 10:20 Analyzed: 11/29/16 12:11							
NWTPH-Gx (MS)												
Gasoline Range Organics	0.520	0.0500	0.100	mg/L	1	0.500	---	104	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 100 %*		*Limits: 50-150 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Sur)			*92 %*		*50-150 %*				*"*			

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

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7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110920 - EPA 5030B									Water			
Blank (6110920-BLK1)					Prepared: 11/29/16 13:40 Analyzed: 11/29/16 15:55							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	0.0500	0.100	mg/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 98 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*112 %*	*50-150 %*			*"*					
LCS (6110920-BS2)					Prepared: 11/29/16 13:40 Analyzed: 11/29/16 15:27							
NWTPH-Gx (MS)												
Gasoline Range Organics	0.467	0.0500	0.100	mg/L	1	0.500	---	93	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 96 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*101 %*	*50-150 %*			*"*					

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

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QUALITY CONTROL (QC) SAMPLE RESULTS

Polychlorinated Biphenyls -- EPA 8082A

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6120261 - EPA 3510C (Neutral pH)									Water			
Blank (6120261-BLK1)					Prepared: 12/06/16 11:13 Analyzed: 12/07/16 10:00							**C-07**
EPA 8082A												
Aroclor 1016	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Aroclor 1221	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1232	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1242	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1248	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1254	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Aroclor 1260	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 86 %*	*Limits: 39-120 %*			*Dilution: 1x*					
LCS (6120261-BS1)					Prepared: 12/06/16 11:13 Analyzed: 12/07/16 10:18							**C-07**
EPA 8082A												
Aroclor 1016	0.864	0.0100	0.0200	ug/L	1	1.25	---	69	46-129%	---	---	
Aroclor 1260	1.04	0.0100	0.0200	"	"	"	---	83	45-134%	---	---	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 78 %*	*Limits: 39-120 %*			*Dilution: 1x*					
LCS Dup (6120261-BSD1)					Prepared: 12/06/16 11:13 Analyzed: 12/07/16 10:35							**C-07, Q-19**
EPA 8082A												
Aroclor 1016	0.868	0.0100	0.0200	ug/L	1	1.25	---	69	46-129%	0.4	30%	
Aroclor 1260	1.02	0.0100	0.0200	"	"	"	---	81	45-134%	2	30%	
Surr: Decachlorobiphenyl (Surr)			*Recovery: 82 %*	*Limits: 39-120 %*			*Dilution: 1x*					

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110871 - EPA 3510C (Acid Extraction)							**Water**					
Blank (6110871-BLK1)					Prepared: 11/28/16 10:16 Analyzed: 11/28/16 15:00							
EPA 8270D												
Acenaphthene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Chrysene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluoranthene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluorene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Naphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Phenanthrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Carbazole	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	0.182	0.364	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	0.182	0.364	"	"	---	---	---	---	---	---	

Surr: Nitrobenzene-d5 (Surr)	*Recovery: 58 %*	*Limits: 44-120 %*	*Dilution: 1x*
2-Fluorobiphenyl (Surr)	*75 %*	*44-120 %*	*"*
Phenol-d6 (Surr)	*25 %*	*10-120 %*	*"*
p-Terphenyl-d14 (Surr)	*101 %*	*50-133 %*	*"*

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110871 - EPA 3510C (Acid Extraction)									**Water**			
Blank (6110871-BLK1)					Prepared: 11/28/16 10:16 Analyzed: 11/28/16 15:00							
Surr: 2-Fluorophenol (Surr)			*Recovery: 41 %*	*Limits: 19-120 %*			*Dilution: 1x*					
2,4,6-Tribromophenol (Surr)			*96 %*	*43-140 %*			*"*					*Q-41*
LCS (6110871-BS1)					Prepared: 11/28/16 10:16 Analyzed: 11/28/16 15:37							
EPA 8270D												
Acenaphthene	2.97	0.0100	0.0200	ug/L	1	4.00	---	74	47-122%	---	---	
Acenaphthylene	3.14	0.0100	0.0200	"	"	"	---	79	41-130%	---	---	
Anthracene	3.65	0.0100	0.0200	"	"	"	---	91	57-123%	---	---	
Benz(a)anthracene	3.82	0.0100	0.0200	"	"	"	---	95	58-125%	---	---	
Benzo(a)pyrene	3.93	0.0150	0.0300	"	"	"	---	98	54-128%	---	---	
Benzo(b)fluoranthene	4.15	0.0150	0.0300	"	"	"	---	104	53-131%	---	---	
Benzo(k)fluoranthene	4.18	0.0150	0.0300	"	"	"	---	105	57-129%	---	---	
Benzo(g,h,i)perylene	4.04	0.0100	0.0200	"	"	"	---	101	50-134%	---	---	
Chrysene	3.77	0.0100	0.0200	"	"	"	---	94	59-123%	---	---	
Dibenz(a,h)anthracene	4.03	0.0100	0.0200	"	"	"	---	101	51-134%	---	---	
Fluoranthene	3.91	0.0100	0.0200	"	"	"	---	98	57-128%	---	---	
Fluorene	3.53	0.0100	0.0200	"	"	"	---	88	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	3.95	0.0100	0.0200	"	"	"	---	99	52-133%	---	---	
1-Methylnaphthalene	2.35	0.0200	0.0400	"	"	"	---	59	41-120%	---	---	
2-Methylnaphthalene	2.29	0.0200	0.0400	"	"	"	---	57	40-121%	---	---	
Naphthalene	2.14	0.0200	0.0400	"	"	"	---	54	"	---	---	
Phenanthrene	3.58	0.0100	0.0200	"	"	"	---	89	59-120%	---	---	
Pyrene	4.01	0.0100	0.0200	"	"	"	---	100	57-126%	---	---	
Carbazole	4.33	0.0150	0.0300	"	"	"	---	108	60-122%	---	---	
Dibenzofuran	3.37	0.0100	0.0200	"	"	"	---	84	53-120%	---	---	
Bis(2-ethylhexyl)phthalate	3.69	0.200	0.400	"	"	"	---	92	55-135%	---	---	
Butyl benzyl phthalate	3.59	0.200	0.400	"	"	"	---	90	53-134%	---	---	
Diethylphthalate	3.58	0.200	0.400	"	"	"	---	90	55-125%	---	---	
Dimethylphthalate	3.55	0.200	0.400	"	"	"	---	89	45-127%	---	---	
Di-n-butylphthalate	3.81	0.200	0.400	"	"	"	---	95	59-127%	---	---	
Di-n-octyl phthalate	3.36	0.200	0.400	"	"	"	---	84	51-140%	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 66 %*	*Limits: 44-120 %*			*Dilution: 1x*					

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7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110871 - EPA 3510C (Acid Extraction)									**Water**			
LCS (6110871-BS1)					Prepared: 11/28/16 10:16 Analyzed: 11/28/16 15:37							
Surr: 2-Fluorobiphenyl (Surr)			*Recovery: 73 %*	*Limits: 44-120 %*		*Dilution: 1x*						
Phenol-d6 (Surr)			*29 %*	*10-120 %*		*"*						
p-Terphenyl-d14 (Surr)			*93 %*	*50-133 %*		*"*						
2-Fluorophenol (Surr)			*45 %*	*19-120 %*		*"*						
2,4,6-Tribromophenol (Surr)			*107 %*	*43-140 %*		*"*						*Q-41*
LCS Dup (6110871-BSD1)					Prepared: 11/28/16 10:16 Analyzed: 11/28/16 16:12							**Q-19**
EPA 8270D												
Acenaphthene	3.35	0.0100	0.0200	ug/L	1	4.00	---	84	47-122%	12	30%	
Acenaphthylene	3.52	0.0100	0.0200	"	"	"	---	88	41-130%	11	30%	
Anthracene	3.77	0.0100	0.0200	"	"	"	---	94	57-123%	3	30%	
Benz(a)anthracene	3.60	0.0100	0.0200	"	"	"	---	90	58-125%	6	30%	
Benzo(a)pyrene	3.75	0.0150	0.0300	"	"	"	---	94	54-128%	5	30%	
Benzo(b)fluoranthene	4.08	0.0150	0.0300	"	"	"	---	102	53-131%	2	30%	
Benzo(k)fluoranthene	4.06	0.0150	0.0300	"	"	"	---	101	57-129%	3	30%	
Benzo(g,h,i)perylene	3.84	0.0100	0.0200	"	"	"	---	96	50-134%	5	30%	
Chrysene	3.63	0.0100	0.0200	"	"	"	---	91	59-123%	4	30%	
Dibenz(a,h)anthracene	3.85	0.0100	0.0200	"	"	"	---	96	51-134%	5	30%	
Fluoranthene	3.84	0.0100	0.0200	"	"	"	---	96	57-128%	2	30%	
Fluorene	3.69	0.0100	0.0200	"	"	"	---	92	52-124%	4	30%	
Indeno(1,2,3-cd)pyrene	3.68	0.0100	0.0200	"	"	"	---	92	52-133%	7	30%	
1-Methylnaphthalene	3.15	0.0200	0.0400	"	"	"	---	79	41-120%	29	30%	
2-Methylnaphthalene	3.18	0.0200	0.0400	"	"	"	---	79	40-121%	33	30%	Q-24
Naphthalene	2.85	0.0200	0.0400	"	"	"	---	71	"	28	30%	
Phenanthrene	3.56	0.0100	0.0200	"	"	"	---	89	59-120%	0.5	30%	
Pyrene	3.91	0.0100	0.0200	"	"	"	---	98	57-126%	3	30%	
Carbazole	4.08	0.0150	0.0300	"	"	"	---	102	60-122%	6	30%	
Dibenzofuran	3.60	0.0100	0.0200	"	"	"	---	90	53-120%	7	30%	
Bis(2-ethylhexyl)phthalate	3.61	0.200	0.400	"	"	"	---	90	55-135%	2	30%	
Butyl benzyl phthalate	3.61	0.200	0.400	"	"	"	---	90	53-134%	0.7	30%	
Diethylphthalate	3.58	0.200	0.400	"	"	"	---	89	55-125%	0.2	30%	
Dimethylphthalate	3.84	0.200	0.400	"	"	"	---	96	45-127%	8	30%	

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110871 - EPA 3510C (Acid Extraction)							**Water**					
LCS Dup (6110871-BSD1)					Prepared: 11/28/16 10:16		Analyzed: 11/28/16 16:12					**Q-19**
Di-n-butylphthalate	3.78	0.200	0.400	ug/L	"	"	---	94	59-127%	0.9	30%	
Di-n-octyl phthalate	3.41	0.200	0.400	"	"	"	---	85	51-140%	1	30%	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 66 %*		*Limits: 44-120 %*		*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*79 %*		*44-120 %*		*"*					
Phenol-d6 (Surr)			*27 %*		*10-120 %*		*"*					
p-Terphenyl-d14 (Surr)			*93 %*		*50-133 %*		*"*					
2-Fluorophenol (Surr)			*43 %*		*19-120 %*		*"*					
2,4,6-Tribromophenol (Surr)			*107 %*		*43-140 %*		*"*					*Q-41*

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6120323 - EPA 3015A									**Water**			
Blank (6120323-BLK1)					Prepared: 12/07/16 13:59 Analyzed: 12/08/16 12:22							
EPA 6020A												
Aluminum	ND	25.0	50.0	ug/L	1	---	---	---	---	---	---	
Antimony	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Arsenic	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Cadmium	ND	0.0400	0.200	"	"	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Manganese	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Mercury	ND	0.0400	0.0800	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Silver	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
LCS (6120323-BS1)					Prepared: 12/07/16 13:59 Analyzed: 12/08/16 12:25							
EPA 6020A												
Aluminum	5060	25.0	50.0	ug/L	1	5560	---	91	80-120%	---	---	
Antimony	26.6	0.500	1.00	"	"	27.8	---	96	"	---	---	
Arsenic	51.9	0.500	1.00	"	"	55.6	---	93	"	---	---	
Cadmium	50.7	0.0400	0.200	"	"	"	---	91	"	---	---	
Chromium	52.1	0.500	1.00	"	"	"	---	94	"	---	---	
Copper	52.6	0.500	1.00	"	"	"	---	95	"	---	---	
Lead	53.3	0.100	0.200	"	"	"	---	96	"	---	---	
Manganese	53.0	0.500	1.00	"	"	"	---	95	"	---	---	
Mercury	1.11	0.0400	0.0800	"	"	1.11	---	100	"	---	---	
Nickel	52.9	0.500	1.00	"	"	55.6	---	95	"	---	---	
Silver	26.8	0.100	0.200	"	"	27.8	---	96	"	---	---	
Zinc	53.2	2.00	4.00	"	"	55.6	---	96	"	---	---	
Duplicate (6120323-DUP1)					Prepared: 12/07/16 13:59 Analyzed: 12/08/16 12:49							
QC Source Sample: B18-F-2 (A6K0789-04)												
EPA 6020A												

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Philip Nerenberg, Lab Director

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6120323 - EPA 3015A									**Water**			
Duplicate (6120323-DUP1)					Prepared: 12/07/16 13:59 Analyzed: 12/08/16 12:49							
QC Source Sample: B18-F-2 (A6K0789-04)												
Aluminum	**164**	25.0	50.0	ug/L	1	---	160	---	---	2	20%	
Antimony	ND	0.500	1.00	"	"	---	ND	---	---	---	20%	
Arsenic	ND	0.500	1.00	"	"	---	ND	---	---	---	20%	
Cadmium	**0.133**	0.0400	0.200	"	"	---	0.122	---	---	9	20%	J
Chromium	**2.74**	0.500	1.00	"	"	---	2.64	---	---	4	20%	
Copper	**6.04**	0.500	1.00	"	"	---	6.09	---	---	0.7	20%	
Lead	**2.06**	0.100	0.200	"	"	---	2.08	---	---	1	20%	
Manganese	**36.9**	0.500	1.00	"	"	---	36.5	---	---	1	20%	
Mercury	ND	0.0400	0.0800	"	"	---	ND	---	---	---	20%	
Nickel	**0.722**	0.500	1.00	"	"	---	0.667	---	---	8	20%	J
Silver	ND	0.100	0.200	"	"	---	ND	---	---	---	20%	
Zinc	**34.3**	2.00	4.00	"	"	---	34.9	---	---	2	20%	
Matrix Spike (6120323-MS1)					Prepared: 12/07/16 13:59 Analyzed: 12/08/16 12:53							
QC Source Sample: B18-F-2 (A6K0789-04)												
EPA 6020A												
Aluminum	5370	25.0	50.0	ug/L	1	5560	160	94	75-125%	---	---	
Antimony	26.8	0.500	1.00	"	"	27.8	ND	96	"	---	---	
Arsenic	52.6	0.500	1.00	"	"	55.6	ND	95	"	---	---	
Cadmium	51.6	0.0400	0.200	"	"	"	0.122	93	"	---	---	
Chromium	56.6	0.500	1.00	"	"	"	2.64	97	"	---	---	
Copper	58.7	0.500	1.00	"	"	"	6.09	95	"	---	---	
Lead	55.9	0.100	0.200	"	"	"	2.08	97	"	---	---	
Manganese	92.7	0.500	1.00	"	"	"	36.5	101	"	---	---	
Mercury	1.13	0.0400	0.0800	"	"	1.11	ND	102	"	---	---	
Nickel	54.8	0.500	1.00	"	"	55.6	0.667	97	"	---	---	
Silver	27.5	0.100	0.200	"	"	27.8	ND	99	"	---	---	
Zinc	85.7	2.00	4.00	"	"	55.6	34.9	91	"	---	---	

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Philip Nerenberg, Lab Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110876 - Total Suspended Solids									Water			
Blank (6110876-BLK1)					Prepared: 11/28/16 13:24		Analyzed: 11/28/16 18:35					
SM 2540 D												
Total Suspended Solids	ND	5.00	5.00	mg/L	1	---	---	---	---	---	---	
Reference (6110876-SRM1)					Prepared: 11/28/16 13:24		Analyzed: 11/28/16 18:35					
SM 2540 D												
Total Suspended Solids	96.0	5.00	5.00	mg/L	1	96.0		100	77.1-110%	---	---	

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503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110903 - Total Suspended Solids									Water			
Blank (6110903-BLK1)					Prepared: 11/29/16 10:31		Analyzed: 11/29/16 14:41					
SM 2540 D												
Total Suspended Solids	ND	2.00	2.00	mg/L	1	---	---	---	---	---	---	
Duplicate (6110903-DUP2)					Prepared: 11/29/16 10:31		Analyzed: 11/29/16 14:41					
QC Source Sample: B18-F-1 (A6K0789-03)												
SM 2540 D												
Total Suspended Solids	**36.0**	5.00	5.00	mg/L	1	---	37.0	---	---	3	10%	
Reference (6110903-SRM1)					Prepared: 11/29/16 10:31		Analyzed: 11/29/16 14:41					
SM 2540 D												
Total Suspended Solids	89.0			mg/L	1	100		89	77.1-110%	---	---	

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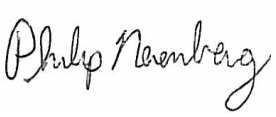

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503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110917 - Method Prep: Aq								**Water**				
Blank (6110917-BLK1)					Prepared: 11/29/16 11:09		Analyzed: 11/30/16 00:17					
SM 5310 B												
Total Organic Carbon	ND	1.00	1.00	mg/L	1	---	---	---	---	---	---	
LCS (6110917-BS1)					Prepared: 11/29/16 11:09		Analyzed: 11/30/16 00:17					
SM 5310 B												
Total Organic Carbon	9.77	1.00	1.00	mg/L	1	10.0	---	98	85-115%	---	---	
LCS (6110917-BS2)					Prepared: 11/29/16 11:09		Analyzed: 11/30/16 00:17					
SM 5310 B												
Total Organic Carbon	ND	1.00	1.00	mg/L	1	0.00	---		85-115%	---	---	TOC_I
Duplicate (6110917-DUP1)					Prepared: 11/29/16 11:09		Analyzed: 11/30/16 00:17					
QC Source Sample: B18-D-CB1 (A6K0789-01)												
SM 5310 B												
Total Organic Carbon	ND	1.00	1.00	mg/L	1	---	ND	---	---	---	20%	
Matrix Spike (6110917-MS1)					Prepared: 11/29/16 11:09		Analyzed: 11/30/16 00:17					
QC Source Sample: B18-D-CB1 (A6K0789-01)												
SM 5310 B												
Total Organic Carbon	9.79	1.01	1.01	mg/L	1	10.0	ND	98	75-125%	---	---	

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503-718-2323 Phone
503-718-0333 Fax

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7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110925 - Total Suspended Solids									Water			
Blank (6110925-BLK1)					Prepared: 11/29/16 15:03		Analyzed: 11/30/16 08:59					
SM 2540 D												
Total Suspended Solids	ND	2.00	2.00	mg/L	1	---	---	---	---	---	---	
Duplicate (6110925-DUP1)					Prepared: 11/29/16 15:03		Analyzed: 11/30/16 08:59					
QC Source Sample: B18-F-R3 (A6K0789-12)												
SM 2540 D												
Total Suspended Solids	**33.0**	5.00	5.00	mg/L	1	---	24.0	---	---	32	10%	Q-04
Reference (6110925-SRM1)					Prepared: 11/29/16 15:03		Analyzed: 11/30/16 08:59					
SM 2540 D												
Total Suspended Solids	92.0			mg/L	1	100		92	77.1-110%	---	---	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110943							
A6K0789-01	Water	NWTPH-Dx	11/22/16 14:15	11/30/16 07:17	970mL/5mL	1000mL/5mL	1.03
A6K0789-02	Water	NWTPH-Dx	11/22/16 14:25	11/30/16 07:17	970mL/5mL	1000mL/5mL	1.03
A6K0789-03	Water	NWTPH-Dx	11/22/16 14:30	11/30/16 07:17	890mL/5mL	1000mL/5mL	1.12
A6K0789-04	Water	NWTPH-Dx	11/22/16 16:00	11/30/16 07:17	970mL/5mL	1000mL/5mL	1.03
A6K0789-05	Water	NWTPH-Dx	11/22/16 15:10	11/30/16 07:17	900mL/5mL	1000mL/5mL	1.11
A6K0789-06	Water	NWTPH-Dx	11/22/16 14:55	11/30/16 07:17	970mL/5mL	1000mL/5mL	1.03
A6K0789-07	Water	NWTPH-Dx	11/22/16 14:58	11/30/16 07:17	920mL/5mL	1000mL/5mL	1.09
A6K0789-08	Water	NWTPH-Dx	11/22/16 14:40	11/30/16 07:17	890mL/5mL	1000mL/5mL	1.12
A6K0789-09	Water	NWTPH-Dx	11/22/16 14:40	11/30/16 07:17	980mL/5mL	1000mL/5mL	1.02
Batch: 6120133							
A6K0789-10	Water	NWTPH-Dx	11/22/16 15:20	12/01/16 12:47	990mL/5mL	1000mL/5mL	1.01
A6K0789-11	Water	NWTPH-Dx	11/22/16 14:50	12/01/16 12:47	970mL/5mL	1000mL/5mL	1.03
A6K0789-12	Water	NWTPH-Dx	11/22/16 14:30	12/01/16 12:47	950mL/5mL	1000mL/5mL	1.05

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110906							
A6K0789-01	Water	NWTPH-Gx (MS)	11/22/16 14:15	11/29/16 12:24	5mL/5mL	5mL/5mL	1.00
A6K0789-02	Water	NWTPH-Gx (MS)	11/22/16 14:25	11/29/16 12:24	5mL/5mL	5mL/5mL	1.00
A6K0789-03	Water	NWTPH-Gx (MS)	11/22/16 14:30	11/29/16 12:24	5mL/5mL	5mL/5mL	1.00
A6K0789-04	Water	NWTPH-Gx (MS)	11/22/16 16:00	11/29/16 12:24	5mL/5mL	5mL/5mL	1.00
A6K0789-05	Water	NWTPH-Gx (MS)	11/22/16 15:10	11/29/16 12:24	5mL/5mL	5mL/5mL	1.00
A6K0789-06	Water	NWTPH-Gx (MS)	11/22/16 14:55	11/29/16 12:24	5mL/5mL	5mL/5mL	1.00
A6K0789-07	Water	NWTPH-Gx (MS)	11/22/16 14:58	11/29/16 12:24	5mL/5mL	5mL/5mL	1.00
Batch: 6110920							
A6K0789-08	Water	NWTPH-Gx (MS)	11/22/16 14:40	11/29/16 15:44	5mL/5mL	5mL/5mL	1.00
A6K0789-09	Water	NWTPH-Gx (MS)	11/22/16 14:40	11/29/16 15:44	5mL/5mL	5mL/5mL	1.00
A6K0789-10	Water	NWTPH-Gx (MS)	11/22/16 15:20	11/29/16 15:44	5mL/5mL	5mL/5mL	1.00
A6K0789-11	Water	NWTPH-Gx (MS)	11/22/16 14:50	11/29/16 15:44	5mL/5mL	5mL/5mL	1.00
A6K0789-12	Water	NWTPH-Gx (MS)	11/22/16 14:30	11/29/16 15:44	5mL/5mL	5mL/5mL	1.00

Polychlorinated Biphenyls -- EPA 8082A

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

SAMPLE PREPARATION INFORMATION

Polychlorinated Biphenyls -- EPA 8082A

Prep: EPA 3510C (Neutral pH)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6120261							
A6K0789-01	Water	EPA 8082A	11/22/16 14:15	12/06/16 11:13	1060mL/1mL	1000mL/1mL	0.94
A6K0789-02	Water	EPA 8082A	11/22/16 14:25	12/06/16 11:13	1050mL/1mL	1000mL/1mL	0.95
A6K0789-03	Water	EPA 8082A	11/22/16 14:30	12/06/16 11:13	970mL/1mL	1000mL/1mL	1.03
A6K0789-04	Water	EPA 8082A	11/22/16 16:00	12/06/16 11:13	1050mL/1mL	1000mL/1mL	0.95
A6K0789-05	Water	EPA 8082A	11/22/16 15:10	12/06/16 11:13	980mL/1mL	1000mL/1mL	1.02
A6K0789-06	Water	EPA 8082A	11/22/16 14:55	12/06/16 11:13	1050mL/1mL	1000mL/1mL	0.95
A6K0789-07RE1	Water	EPA 8082A	11/22/16 14:58	12/06/16 15:11	870mL/1mL	1000mL/1mL	1.15
A6K0789-08	Water	EPA 8082A	11/22/16 14:40	12/06/16 15:11	1040mL/1mL	1000mL/1mL	0.96
A6K0789-09	Water	EPA 8082A	11/22/16 14:40	12/06/16 15:11	1040mL/1mL	1000mL/1mL	0.96
A6K0789-10	Water	EPA 8082A	11/22/16 15:20	12/06/16 15:11	1050mL/1mL	1000mL/1mL	0.95
A6K0789-11	Water	EPA 8082A	11/22/16 14:50	12/06/16 15:11	1050mL/1mL	1000mL/1mL	0.95
A6K0789-12	Water	EPA 8082A	11/22/16 14:30	12/06/16 15:11	1040mL/1mL	1000mL/1mL	0.96

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3510C (Acid Extraction)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110871							
A6K0789-01	Water	EPA 8270D	11/22/16 14:15	11/28/16 10:25	1050mL/1mL	1000mL/1mL	0.95
A6K0789-01RE1	Water	EPA 8270D	11/22/16 14:15	11/28/16 10:25	1050mL/1mL	1000mL/1mL	0.95
A6K0789-02RE1	Water	EPA 8270D	11/22/16 14:25	11/28/16 13:02	1050mL/1mL	1000mL/1mL	0.95
A6K0789-03RE1	Water	EPA 8270D	11/22/16 14:30	11/28/16 13:02	960mL/1mL	1000mL/1mL	1.04
A6K0789-04	Water	EPA 8270D	11/22/16 16:00	11/28/16 13:02	1050mL/1mL	1000mL/1mL	0.95
A6K0789-05	Water	EPA 8270D	11/22/16 15:10	11/28/16 13:02	1060mL/1mL	1000mL/1mL	0.94
A6K0789-06	Water	EPA 8270D	11/22/16 14:55	11/28/16 13:02	1040mL/1mL	1000mL/1mL	0.96
A6K0789-07RE1	Water	EPA 8270D	11/22/16 14:58	11/28/16 13:02	1040mL/1mL	1000mL/1mL	0.96
A6K0789-08	Water	EPA 8270D	11/22/16 14:40	11/28/16 13:02	1010mL/1mL	1000mL/1mL	0.99
A6K0789-09RE1	Water	EPA 8270D	11/22/16 14:40	11/28/16 13:02	1040mL/1mL	1000mL/1mL	0.96
A6K0789-10	Water	EPA 8270D	11/22/16 15:20	11/28/16 13:02	1050mL/1mL	1000mL/1mL	0.95
A6K0789-11	Water	EPA 8270D	11/22/16 14:50	11/28/16 13:02	1060mL/1mL	1000mL/1mL	0.94
A6K0789-12	Water	EPA 8270D	11/22/16 14:30	11/28/16 13:02	1030mL/1mL	1000mL/1mL	0.97

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3015A

Sample	Default	RL Prep

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

SAMPLE PREPARATION INFORMATION

Total Metals by EPA 6020 (ICPMS)

Lab Number	Matrix	Method	Sampled	Prepared	Initial/Final	Initial/Final	Factor
Batch: 6120323							
A6K0789-01	Water	EPA 6020A	11/22/16 14:15	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00
A6K0789-01RE1	Water	EPA 6020A	11/22/16 14:15	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00
A6K0789-02	Water	EPA 6020A	11/22/16 14:25	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00
A6K0789-03	Water	EPA 6020A	11/22/16 14:30	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00
A6K0789-04	Water	EPA 6020A	11/22/16 16:00	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00
A6K0789-05	Water	EPA 6020A	11/22/16 15:10	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00
A6K0789-06	Water	EPA 6020A	11/22/16 14:55	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00
A6K0789-07	Water	EPA 6020A	11/22/16 14:58	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00
A6K0789-08	Water	EPA 6020A	11/22/16 14:40	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00
A6K0789-08RE1	Water	EPA 6020A	11/22/16 14:40	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00
A6K0789-09	Water	EPA 6020A	11/22/16 14:40	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00
A6K0789-09RE1	Water	EPA 6020A	11/22/16 14:40	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00
A6K0789-10	Water	EPA 6020A	11/22/16 15:20	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00
A6K0789-11	Water	EPA 6020A	11/22/16 14:50	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00
A6K0789-12	Water	EPA 6020A	11/22/16 14:30	12/07/16 13:59	45mL/50mL	45mL/50mL	1.00

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110917							
A6K0789-01	Water	SM 5310 B	11/22/16 14:15	11/29/16 11:09	40mL/40mL	40mL/40mL	1.00
A6K0789-02	Water	SM 5310 B	11/22/16 14:25	11/29/16 11:09	40mL/40mL	40mL/40mL	1.00
A6K0789-03	Water	SM 5310 B	11/22/16 14:30	11/29/16 11:09	40mL/40mL	40mL/40mL	1.00
A6K0789-04	Water	SM 5310 B	11/22/16 16:00	11/29/16 11:09	40mL/40mL	40mL/40mL	1.00
A6K0789-05	Water	SM 5310 B	11/22/16 15:10	11/29/16 11:09	40mL/40mL	40mL/40mL	1.00
A6K0789-06	Water	SM 5310 B	11/22/16 14:55	11/29/16 11:09	40mL/40mL	40mL/40mL	1.00
A6K0789-07	Water	SM 5310 B	11/22/16 14:58	11/29/16 11:09	40mL/40mL	40mL/40mL	1.00
A6K0789-08	Water	SM 5310 B	11/22/16 14:40	11/29/16 11:09	40mL/40mL	40mL/40mL	1.00
A6K0789-09	Water	SM 5310 B	11/22/16 14:40	11/29/16 11:09	40mL/40mL	40mL/40mL	1.00
A6K0789-10	Water	SM 5310 B	11/22/16 15:20	11/29/16 11:09	40mL/40mL	40mL/40mL	1.00
A6K0789-11	Water	SM 5310 B	11/22/16 14:50	11/29/16 11:09	40mL/40mL	40mL/40mL	1.00
A6K0789-12	Water	SM 5310 B	11/22/16 14:30	11/29/16 11:09	40mL/40mL	40mL/40mL	1.00

Prep: Total Suspended Solids

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

SAMPLE PREPARATION INFORMATION

Conventional Chemistry Parameters

Prep: Total Suspended Solids

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110876							
A6K0789-04	Water	SM 2540 D	11/22/16 16:00	11/28/16 13:24	1N/A/1N/A	1N/A/1N/A	NA
A6K0789-05	Water	SM 2540 D	11/22/16 15:10	11/28/16 13:24	1N/A/1N/A	1N/A/1N/A	NA
A6K0789-06	Water	SM 2540 D	11/22/16 14:55	11/28/16 13:24	1N/A/1N/A	1N/A/1N/A	NA
A6K0789-07	Water	SM 2540 D	11/22/16 14:58	11/28/16 13:24	1N/A/1N/A	1N/A/1N/A	NA
Batch: 6110903							
A6K0789-01	Water	SM 2540 D	11/22/16 14:15	11/29/16 10:31	1N/A/1N/A	1N/A/1N/A	NA
A6K0789-02	Water	SM 2540 D	11/22/16 14:25	11/29/16 10:31	1N/A/1N/A	1N/A/1N/A	NA
A6K0789-03	Water	SM 2540 D	11/22/16 14:30	11/29/16 10:31	1N/A/1N/A	1N/A/1N/A	NA
A6K0789-08	Water	SM 2540 D	11/22/16 14:40	11/29/16 10:31	1N/A/1N/A	1N/A/1N/A	NA
A6K0789-09	Water	SM 2540 D	11/22/16 14:40	11/29/16 10:31	1N/A/1N/A	1N/A/1N/A	NA
A6K0789-10	Water	SM 2540 D	11/22/16 15:20	11/29/16 10:31	1N/A/1N/A	1N/A/1N/A	NA
Batch: 6110925							
A6K0789-11	Water	SM 2540 D	11/22/16 14:50	11/29/16 15:03	1N/A/1N/A	1N/A/1N/A	NA
A6K0789-12	Water	SM 2540 D	11/22/16 14:30	11/29/16 15:03	1N/A/1N/A	1N/A/1N/A	NA

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Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

Notes and Definitions

Qualifiers:

C-07	Extract has undergone Sulfuric Acid Cleanup by EPA 3665A, Sulfur Cleanup by EPA 3660B, and Florisil Cleanup by EPA 3620B in order to minimize matrix interference.
F-17	No fuel pattern detected. The Diesel result represents carbon range C12 to C24, and the Oil result represents >C24 to C40.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
M-02	Due to matrix interference, this analyte cannot be accurately quantified. The reported result is estimated.
P-10	Result estimated due to the presence of multiple PCB Aroclors and/or matrix interference.
Q-04	Spike recovery and/or RPD is outside control limits due to a non-homogeneous sample matrix.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-24	RPD for spike and spike duplicate is above established control limit. Recoveries for both spike and spike duplicate are within control limits.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
S-05	Surrogate recovery is estimated due to sample dilution required for high analyte concentration and/or matrix interference.
S-06	Surrogate recovery is outside of established control limits.
TOC_I	Inorganic Carbon Spike Check. Results valid if Non Detect (No Inorganic Carbon detected.)
V-20	Appropriate containers for volatiles analysis were not provided by the client. VOA vials were poured off in the laboratory from nonpreserved amber.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit
NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.

Apex Laboratories

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Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

Blank Policy

Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses.

For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor.

Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.

QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.

***

Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

AQK0789

HAHN AND ASSOCIATES, INC.
Environmental Consultants
434 NW Sixth Avenue, Suite 203 • Portland OR 97209
(503) 796-0717 • Fax (503) 227-2209

CHAIN OF CUSTODY

Laboratory: Apex
Lab Project No.:
Chain of Custody No.:

Project Manager: Ross Rieke (Bridgewater Group)
Project No.: 8001-20
Project Name: Schnitzer - Burgard
Collected by: Mike Krzeminski

Liquid with Sediment Sample — Test Filtrate / Test Sediment / Test Both
Multi-Phase Sample — Test Separately / Shake / Test One (which)

Samples Received at 4C (Y or N)
Appropriate Containers Used (Y or N)
Provide Verbal Results (Y or N) — No
Provide Preliminary Fax Results — Yes

Comments:
Results & Invoice to Ross Rieke at Bridgewater Group (rrieke@bridgeh2o.com)
Place all samples on hold until analysis confirmed by Ross Rieke

Lab ID	Sample #	Date	Time	Sample Description	Matrix: Soil/Sediment	Matrix: Water	Matrix: Other	Number of Containers	Metals: Aluminum, Antimony, Arsenic, Cadmium, Chromium, Copper, Lead, Manganese, Mercury, Nickel, Silver, Zinc (EPA 6020)	Tributyltin (KRONE)	PCBs - Congeners, Homologs, Aroclors (EPA 1668A)	Tributyltin (KRONE)	Dioxins/Furans (EPA 8290)	Phthalates (EPA 8270 SIM)	PAHs (EPA 8270 SIM)	Total Organic Carbon (SM 5310 MOD)	NWTPH - Gx	NWTPH-Dx	Total Suspended Solids (SM 2540D)	RUSH	Remarks
	B18-D-CB1	11/23/16	1415	CB1		X		9	X												
	B18-D-CB3		1425	CB3		X		9	X												
	B18-F-1		1430	HS1		X		9	X												
	B18-F-2		1600	HS2		X		9	X												
	B18-F-3		1510	HS3		X		9	X												
	B18-F-4		1455	HS4		X		9	X												
	B18-F-5		1458	HS5		X		9	X												
	B18-F-6		1440	HS6		X		9	X												
	B18-F-7		1440	HS7		X		9	X												
	B18-F-R1		1500	RD1		X		9	X												
	B18-F-R2		1450	RD2		X		9	X												
	B18-F-R3		1430	RD3		X		9	X												

Relinquished by: Company HAI — Date 11/23/16 — Time 0930 — Received by — Company Apex — Date 11/23/16 — Time 9:30
Relinquished by — Company — Date — Time — Received by — Company
Relinquished by — Company — Date — Time — Received by — Company

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Bridgewater Group	Project: **Schnitzer-Burgard**	
7100 SW Hampton St. Suite 235	Project Number: 8001-20	**Reported:**
Tigard, OR 97223	Project Manager: Ross Rieke	12/15/16 16:14

APEX LABS COOLER RECEIPT FORM

Client: Hahn Bridgewater Element WO#: A6 K0789

Project/Project #: Schnitzer - Burgard / 8001-20

Delivery info:

Date/Time Received: 11/23/16 @ 930 By: MS

Delivered by: Apex ___ Client X ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: MS : 11/23/16 @ 9:56

Chain of Custody Included? Yes X No ___ Custody Seals? Yes ___ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	2.1	2.6	2.0	2.0	1.1	2.1	
Received on Ice? (Y/N)	Y						
Temp. Blanks? (Y/N)	N						
Ice Type: (Gel/Real/Other)	Real						
Condition:	good						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: AB : 11/23/16 @ 1041

All Samples Intact? Yes X No ___ Comments:

Bottle Labels/COCs agree? Yes X No ___ Comments: No info on Nitric poly for B18-F-R2 AB 11/23/16

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments: HCL VOAs need to be poured off

Do VOA Vials have Visible Headspace? Yes ___ No ___ NA Y

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No ___ NA ___

Comments:

Additional Information:

Labeled by: AB Witness: KP Cooler Inspected by: MS See Project Contact Form: Y

Apex Laboratories

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Philip Nerenberg

Philip Nerenberg, Lab Director

CFA | Cape Fear Analytical LLC
an affiliate of The GEL Group INC

3306 Kitty Hawk Road, Suite 120 Wilmington, NC 28405
P 910.795.0421
www.capefearanalytical.com

December 28, 2016

Mr. Philip Nerenberg
Apex Laboratories
12232 S.W. Garden Place
Portland, Oregon 97223

Re: Burgard Subcontract
Work Order: 10144
SDG: A6K0789

Dear Mr. Nerenberg:

Cape Fear Analytical LLC (CFA) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on November 29, 2016. This original data report has been prepared and reviewed in accordance with CFA's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at 910-795-0421.

Sincerely,

Cynde Larkins

Cynde Larkins
Project Manager

Enclosures

problem solved

SUBCONTRACT ORDER

Apex Laboratories

A6K0789

11/26/16 WAM

SENDING LABORATORY:	**RECEIVING LABORATORY:**
Apex Laboratories	Cape Fear Analytical, LLC
12232 S.W. Garden Place	3306 Kitty Hawk Rd Suite 120
Tigard, OR 97223	Wilmington, NC 28405
Phone: (503) 718-2323	Phone :(910) 795-0421
Fax: (503) 718-0333	Fax: -
Project Manager: Philip Nerenberg	CFA WO # 10144

Sample Name: B18-D-CB1 **Water** **Sampled: 11/22/16 14:15** (A6K0789-01)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	12/08/16 17:00	11/29/16 14:15	
8290 Dioxins/Furans by HRGC/HRMS (SUB)	12/08/16 17:00	05/21/17 14:15	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.0

Sample Name: B18-D-CB3 **Water** **Sampled: 11/22/16 14:25** (A6K0789-02)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	12/08/16 17:00	11/29/16 14:25	
8290 Dioxins/Furans by HRGC/HRMS (SUB)	12/08/16 17:00	05/21/17 14:25	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.0

Sample Name: B18-F-1 **Water** **Sampled: 11/22/16 14:30** (A6K0789-03)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	12/08/16 17:00	11/29/16 14:30	
8290 Dioxins/Furans by HRGC/HRMS (SUB)	12/08/16 17:00	05/21/17 14:30	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.1

1.0

Standard TAT

Released By: [signature]	Date: 11/28/16	Received By: Fed Ex (Shipper)	Date
Released By: Fed Ex (Shipper)	Date	Received By: [signature]	Date: 29 Nov 2016 10:25

SUBCONTRACT ORDER

Apex Laboratories

A6K0789 CFA WO #10144

Sample Name: B18-F-2 **Water** **Sampled: 11/22/16 16:00** (A6K0789-04)

Analysis	Due	Expires	Comments	
1668A PCB Cong and Homologs (SUB)	12/08/16 17:00	11/29/16 16:00		1.1
8290 Dioxins/Furans by HRGC/HRMS (SUB)	12/08/16 17:00	05/21/17 16:00	Cape Fear	
Containers Supplied:				1.0
(F)1 L Amber Glass - Non Preserved				
(G)1 L Amber Glass - Non Preserved				

Sample Name: B18-F-3 **Water** **Sampled: 11/22/16 15:10** (A6K0789-05)

Analysis	Due	Expires	Comments	
1668A PCB Cong and Homologs (SUB)	12/08/16 17:00	11/29/16 15:10		1.0
8290 Dioxins/Furans by HRGC/HRMS (SUB)	12/08/16 17:00	05/21/17 15:10	Cape Fear	
Containers Supplied:				
(F)1 L Amber Glass - Non Preserved				
(G)1 L Amber Glass - Non Preserved				

Sample Name: B18-F-4 **Water** **Sampled: 11/22/16 14:55** (A6K0789-06)

Analysis	Due	Expires	Comments	
1668A PCB Cong and Homologs (SUB)	12/08/16 17:00	11/29/16 14:55		1.1
8290 Dioxins/Furans by HRGC/HRMS (SUB)	12/08/16 17:00	05/21/17 14:55	Cape Fear	
Containers Supplied:				
(F)1 L Amber Glass - Non Preserved				
(G)1 L Amber Glass - Non Preserved				

Sample Name: B18-F-5 **Water** **Sampled: 11/22/16 14:58** (A6K0789-07)

Analysis	Due	Expires	Comments	
1668A PCB Cong and Homologs (SUB)	12/08/16 17:00	11/29/16 14:58		3.8
8290 Dioxins/Furans by HRGC/HRMS (SUB)	12/08/16 17:00	05/21/17 14:58	Cape Fear	
Containers Supplied:				1.1
(F)1 L Amber Glass - Non Preserved				
(G)1 L Amber Glass - Non Preserved				

Standard TAT

Released By	Date	Received By	Date
[illegible]	11/28/16	Fed Ex (Shipper)	
Fed Ex (Shipper)		[illegible]	29 NOV 2016 10:25

SUBCONTRACT ORDER

Apex Laboratories

A6K0789

CFA WO #10144

Sample Name: B18-F-6 **Water** **Sampled: 11/22/16 14:40** (A6K0789-08)

Analysis	Due	Expires	Comments	
1668A PCB Cong and Homologs (SUB)	12/08/16 17:00	11/29/16 14:40		3.8
8290 Dioxins/Furans by HRGC/HRMS (SUB)	12/08/16 17:00	05/21/17 14:40	Cape Fear	

Containers Supplied:

(F)1 L Amber Glass - Non Preserved

(G)1 L Amber Glass - Non Preserved

Sample Name: B18-F-7 **Water** **Sampled: 11/22/16 14:40** (A6K0789-09)

Analysis	Due	Expires	Comments	
1668A PCB Cong and Homologs (SUB)	12/08/16 17:00	11/29/16 14:40		3.8
8290 Dioxins/Furans by HRGC/HRMS (SUB)	12/08/16 17:00	05/21/17 14:40	Cape Fear	

Containers Supplied:

(F)1 L Amber Glass - Non Preserved

(G)1 L Amber Glass - Non Preserved

Sample Name: B18-F-R1 **Water** **Sampled: 11/22/16 15:20** (A6K0789-10)

Analysis	Due	Expires	Comments	
1668A PCB Cong and Homologs (SUB)	12/08/16 17:00	11/29/16 15:20		3.8
8290 Dioxins/Furans by HRGC/HRMS (SUB)	12/08/16 17:00	05/21/17 15:20	Cape Fear	1.1

Containers Supplied:

(F)1 L Amber Glass - Non Preserved

(G)1 L Amber Glass - Non Preserved

Sample Name: B18-F-R2 **Water** **Sampled: 11/22/16 14:50** (A6K0789-11)

Analysis	Due	Expires	Comments	
1668A PCB Cong and Homologs (SUB)	12/08/16 17:00	11/29/16 14:50		3.8
8290 Dioxins/Furans by HRGC/HRMS (SUB)	12/08/16 17:00	05/21/17 14:50	Cape Fear	

Containers Supplied:

(F)1 L Amber Glass - Non Preserved

(G)1 L Amber Glass - Non Preserved

Standard TAT

Anissa Kya 11/28/16 Fed Ex (Shipper)

Released By Date Received By Date

Fed Ex (Shipper) 29 NOV 2016 10:25

Released By Date Received By Date

SUBCONTRACT ORDER

Apex Laboratories

A6K0789

CFA WO#10144

Sample Name: B18-F-R3 **Water** **Sampled: 11/22/16 14:30** (A6K0789-12)

Analysis	Due	Expires	Comments
1668A PCB Cong and Homologs (SUB)	12/08/16 17:00	11/29/16 14:30	
8290 Dioxins/Furans by HRGC/HRMS (SUB)	12/08/16 17:00	05/21/17 14:30	Cape Fear
Containers Supplied:			
(F)1 L Amber Glass - Non Preserved			
(G)1 L Amber Glass - Non Preserved			

1.1

Standard TAT

Released By 11/28/16 Date — Fed Ex (Shipper) — Received By — Date

Released By — Date — Received By 29/11/2016 10:25 Date

SAMPLE RECEIPT CHECKLIST

Cape Fear Analytical

Client: APEX	Work Order: 10144
Shipping Company: Fed EX	Date/Time Received: 29 NOV 2016 10:25

Suspected Hazard Information	Yes	NA	No
Shipped as DOT Hazardous?			✓
Samples identified as Foreign Soil?			✓

DOE Site Sample Packages	Yes	NA	No*
Screened <0.5 mR/hr?		✓	
Samples < 2x background?		✓	

* Notify RSO of any responses in this column immediately.

Air Sample Receipt Specifics	Yes	NA	No
Air sample in shipment?			✓

Air Witness: _____

	Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (required for Non-Conforming Items)
1	Shipping containers received intact and sealed?	✓			Circle Applicable: seals broken damaged container leaking container other(describe)
2	Chain of Custody documents included with shipment?	✓			
3	Samples requiring cold preservation within 0-6°C?	✓			Preservation Method: (ice bags) blue ice dry ice none other (describe) 3 coolers at 1.1, 1.0, and 3.8°C
4	Aqueous samples found to have visible solids?	✓			Sample IDs, containers affected: all samples, c/i
5	Samples requiring chemical preservation at proper pH?		✓		Sample IDs, containers affected and pH observed: pH=8 for all If preservative added, Lot#:
6	Samples requiring preservation have no residual chlorine?	✓			Sample IDs, containers affected: If preservative added, Lot#:
7	Samples received within holding time?	✓			Sample IDs, tests affected:
8	Sample IDs on COC match IDs on containers?	✓			Sample IDs, containers affected:
9	Date & time of COC match date & time on containers?	✓			Sample IDs, containers affected:
10	Number of containers received match number indicated on COC?	✓			List type and number of containers / Sample IDs, containers affected: 2-1L NMAS each
11	COC form is properly signed in relinquished/received sections?	✓			

Comments:

Checklist performed by: Initials: MJD Date: 29NOV2016

CF-UD-F-7

High Resolution Dioxins and Furans Analysis

Case Narrative

HDOX Case Narrative
Apex Laboratories (APEX)
SDG A6K0789
Work Order 10144

Method/Analysis Information

Product:	**Dioxins/Furans by SW846 Method 8290A in Liquids**
Analytical Method:	SW846 8290A
Extraction Method:	SW846 3520C
Analytical Batch Number:	33522
Clean Up Batch Number:	33521
Extraction Batch Number:	33520

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 8290A:

Sample ID	Client ID
10144001	B18-D-CB1
10144002	B18-D-CB3
10144003	B18-F-1
10144004	B18-F-2
10144005	B18-F-3
10144006	B18-F-4
10144007	B18-F-5
10144008	B18-F-6
10144009	B18-F-7
10144010	B18-F-R1
10144011	B18-F-R2
10144012	B18-F-R3
12017530	Method Blank (MB)
12017531	Laboratory Control Sample (LCS)
12017532	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-002 REV# 14.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
One surrogate recovered below acceptance criteria. However, all detection limit, signal-to-noise and ion ratio requirements were still met. 10144011 (B18-F-R2), 10144012 (B18-F-R3) and 12017531 (LCS).

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
The samples in this SDG did not require dilutions.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction. Manual integrations were required for data files in this SDG.

System Configuration
This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP763_2	Confirmation Analysis	TCDF Confirmation	DB-225	30m x 0.25mm, 0.25um
HRP763_1	Primary Dioxin Analysis	Dioxin Analysis	DB-5MS	60m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

APEX001 Apex Laboratories

Client SDG: A6K0789 CFA Work Order: 10144

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: **Name: Erin Suhrie**

Date: 28 DEC 2016 **Title: Data Validator**

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144001**	**Date Collected:**	**11/22/2016 14:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/13/2016 19:43**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b13dec16c-5**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**1043.7 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.607		pg/L	0.607	9.58
40321-76-4	1,2,3,7,8-PeCDD	U	.464		pg/L	0.464	47.9
39227-28-6	1,2,3,4,7,8-HxCDD	U	.502		pg/L	0.502	47.9
57653-85-7	1,2,3,6,7,8-HxCDD	U	.487		pg/L	0.487	47.9
19408-74-3	1,2,3,7,8,9-HxCDD	U	.51		pg/L	0.510	47.9
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	3.49		pg/L	0.675	47.9
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	18.5		pg/L	1.58	95.8
51207-31-9	2,3,7,8-TCDF	U	.811		pg/L	0.811	9.58
57117-41-6	1,2,3,7,8-PeCDF	JK		0.556	pg/L	0.345	47.9
57117-31-4	2,3,4,7,8-PeCDF	U	.299		pg/L	0.299	47.9
70648-26-9	1,2,3,4,7,8-HxCDF	U	.402		pg/L	0.402	47.9
57117-44-9	1,2,3,6,7,8-HxCDF	U	.383		pg/L	0.383	47.9
60851-34-5	2,3,4,6,7,8-HxCDF	U	.397		pg/L	0.397	47.9
72918-21-9	1,2,3,7,8,9-HxCDF	U	.506		pg/L	0.506	47.9
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.939		pg/L	0.360	47.9
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.481		pg/L	0.481	47.9
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	2.01		pg/L	1.84	95.8
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.395		pg/L	0.395	9.58
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.293		pg/L	0.293	47.9
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	0.671	1.61	pg/L	0.487	47.9
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	7.86		pg/L	0.675	47.9
30402-14-3	Total Tetrachlorodibenzofuran	U	.811		pg/L	0.811	9.58
30402-15-4	Total Pentachlorodibenzofuran	U	.295	0.901	pg/L	0.295	47.9
55684-94-1	Total Hexachlorodibenzofuran	J	0.613		pg/L	0.383	47.9
38998-75-3	Total Heptachlorodibenzofuran	J	2.20		pg/L	0.360	47.9
3333-30-0	TEQ WHO2005 ND=0		0.0504	0.0671	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		0.838	0.850	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1580	1920	pg/L	82.3	(40%-135%)
13C-1,2,3,7,8-PeCDD		1650	1920	pg/L	86.1	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1570	1920	pg/L	82.0	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1690	1920	pg/L	88.2	(40%-135%)
13C-OCDD		2220	3830	pg/L	58.0	(40%-135%)
13C-2,3,7,8-TCDF		1430	1920	pg/L	74.6	(40%-135%)
13C-1,2,3,7,8-PeCDF		1640	1920	pg/L	85.7	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1400	1920	pg/L	72.9	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1400	1920	pg/L	73.2	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144002**	**Date Collected:**	**11/22/2016 14:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/13/2016 20:31**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b13dec16c-6**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**1034.6 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.566		pg/L	0.566	9.67
40321-76-4	1,2,3,7,8-PeCDD	J	1.14		pg/L	0.584	48.3
39227-28-6	1,2,3,4,7,8-HxCDD	J	1.78		pg/L	0.742	48.3
57653-85-7	1,2,3,6,7,8-HxCDD	J	7.27		pg/L	0.717	48.3
19408-74-3	1,2,3,7,8,9-HxCDD	J	2.90		pg/L	0.752	48.3
35822-46-9	1,2,3,4,6,7,8-HpCDD		120		pg/L	1.29	48.3
3268-87-9	1,2,3,4,6,7,8,9-OCDD		833		pg/L	3.11	96.7
51207-31-9	2,3,7,8-TCDF	U	1.04		pg/L	1.04	9.67
57117-41-6	1,2,3,7,8-PeCDF	J	0.619		pg/L	0.578	48.3
57117-31-4	2,3,4,7,8-PeCDF	J	0.986		pg/L	0.503	48.3
70648-26-9	1,2,3,4,7,8-HxCDF	J	1.64		pg/L	0.419	48.3
57117-44-9	1,2,3,6,7,8-HxCDF	J	1.57		pg/L	0.398	48.3
60851-34-5	2,3,4,6,7,8-HxCDF	J	2.30		pg/L	0.412	48.3
72918-21-9	1,2,3,7,8,9-HxCDF	J	1.02		pg/L	0.528	48.3
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	18.2		pg/L	0.493	48.3
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	1.18		pg/L	0.657	48.3
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	30.7		pg/L	2.20	96.7
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.566		pg/L	0.566	9.67
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	1.14	3.07	pg/L	0.584	48.3
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	33.5		pg/L	0.717	48.3
37871-00-4	Total Heptachlorodibenzo-p-dioxin		202		pg/L	1.29	48.3
30402-14-3	Total Tetrachlorodibenzofuran	U	1.04		pg/L	1.04	9.67
30402-15-4	Total Pentachlorodibenzofuran	J	15.2		pg/L	0.275	48.3
55684-94-1	Total Hexachlorodibenzofuran	J	38.6		pg/L	0.398	48.3
38998-75-3	Total Heptachlorodibenzofuran		50.2		pg/L	0.493	48.3
3333-30-0	TEQ WHO2005 ND=0		4.95	4.95	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		5.29	5.29	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1590	1930	pg/L	82.2	(40%-135%)
13C-1,2,3,7,8-PeCDD		1620	1930	pg/L	83.6	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1550	1930	pg/L	80.0	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1670	1930	pg/L	86.6	(40%-135%)
13C-OCDD		2040	3870	pg/L	52.8	(40%-135%)
13C-2,3,7,8-TCDF		1440	1930	pg/L	74.3	(40%-135%)
13C-1,2,3,7,8-PeCDF		1610	1930	pg/L	83.2	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1400	1930	pg/L	72.4	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1340	1930	pg/L	69.5	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144003**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/13/2016 21:20**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b13dec16c-7**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**1018 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.56		pg/L	0.560	9.82
40321-76-4	1,2,3,7,8-PeCDD	J	0.904		pg/L	0.399	49.1
39227-28-6	1,2,3,4,7,8-HxCDD	JK		0.766	pg/L	0.446	49.1
57653-85-7	1,2,3,6,7,8-HxCDD	J	2.08		pg/L	0.430	49.1
19408-74-3	1,2,3,7,8,9-HxCDD	J	1.43		pg/L	0.452	49.1
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	39.1		pg/L	1.00	49.1
3268-87-9	1,2,3,4,6,7,8,9-OCDD		283		pg/L	1.95	98.2
51207-31-9	2,3,7,8-TCDF	U	.859		pg/L	0.859	9.82
57117-41-6	1,2,3,7,8-PeCDF	U	.627		pg/L	0.627	49.1
57117-31-4	2,3,4,7,8-PeCDF	J	1.06		pg/L	0.544	49.1
70648-26-9	1,2,3,4,7,8-HxCDF	J	0.727		pg/L	0.519	49.1
57117-44-9	1,2,3,6,7,8-HxCDF	JK		0.766	pg/L	0.493	49.1
60851-34-5	2,3,4,6,7,8-HxCDF	JK		0.982	pg/L	0.509	49.1
72918-21-9	1,2,3,7,8,9-HxCDF	U	.652		pg/L	0.652	49.1
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	10.3		pg/L	0.424	49.1
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	0.845		pg/L	0.568	49.1
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	34.0		pg/L	1.82	98.2
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.56		pg/L	0.560	9.82
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	1.59	2.81	pg/L	0.399	49.1
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	16.7	18.8	pg/L	0.430	49.1
37871-00-4	Total Heptachlorodibenzo-p-dioxin		94.8		pg/L	1.00	49.1
30402-14-3	Total Tetrachlorodibenzofuran	J	1.20		pg/L	0.859	9.82
30402-15-4	Total Pentachlorodibenzofuran	J	4.79	10.8	pg/L	0.248	49.1
55684-94-1	Total Hexachlorodibenzofuran	J	13.1	14.9	pg/L	0.493	49.1
38998-75-3	Total Heptachlorodibenzofuran	J	28.6		pg/L	0.424	49.1
3333-30-0	TEQ WHO2005 ND=0		2.24	2.49	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		2.68	2.86	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1670	1960	pg/L	85.0	(40%-135%)
13C-1,2,3,7,8-PeCDD		1740	1960	pg/L	88.6	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1590	1960	pg/L	80.8	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1690	1960	pg/L	86.2	(40%-135%)
13C-OCDD		2140	3930	pg/L	54.5	(40%-135%)
13C-2,3,7,8-TCDF		1520	1960	pg/L	77.3	(40%-135%)
13C-1,2,3,7,8-PeCDF		1580	1960	pg/L	80.3	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1400	1960	pg/L	71.4	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1370	1960	pg/L	69.6	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144004**	**Date Collected:**	**11/22/2016 16:00**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/13/2016 22:08**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b13dec16c-8**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**1032.7 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.48		pg/L	0.480	9.68
40321-76-4	1,2,3,7,8-PeCDD	U	.42		pg/L	0.420	48.4
39227-28-6	1,2,3,4,7,8-HxCDD	U	.445		pg/L	0.445	48.4
57653-85-7	1,2,3,6,7,8-HxCDD	JK		0.484	pg/L	0.430	48.4
19408-74-3	1,2,3,7,8,9-HxCDD	U	.451		pg/L	0.451	48.4
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	8.46		pg/L	0.645	48.4
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	61.8		pg/L	1.82	96.8
51207-31-9	2,3,7,8-TCDF	U	.744		pg/L	0.744	9.68
57117-41-6	1,2,3,7,8-PeCDF	U	.339		pg/L	0.339	48.4
57117-31-4	2,3,4,7,8-PeCDF	U	.294		pg/L	0.294	48.4
70648-26-9	1,2,3,4,7,8-HxCDF	U	.362		pg/L	0.362	48.4
57117-44-9	1,2,3,6,7,8-HxCDF	U	.345		pg/L	0.345	48.4
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.387		pg/L	0.356	48.4
72918-21-9	1,2,3,7,8,9-HxCDF	U	.457		pg/L	0.457	48.4
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	2.13		pg/L	0.459	48.4
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.612		pg/L	0.612	48.4
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	7.49		pg/L	1.64	96.8
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.48		pg/L	0.480	9.68
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.42		pg/L	0.420	48.4
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	2.79	3.27	pg/L	0.430	48.4
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	16.7		pg/L	0.645	48.4
30402-14-3	Total Tetrachlorodibenzofuran	U	.744		pg/L	0.744	9.68
30402-15-4	Total Pentachlorodibenzofuran	J	2.19		pg/L	0.223	48.4
55684-94-1	Total Hexachlorodibenzofuran	J	2.96	3.43	pg/L	0.345	48.4
38998-75-3	Total Heptachlorodibenzofuran	J	5.91		pg/L	0.459	48.4
3333-30-0	TEQ WHO2005 ND=0		0.165	0.214	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		0.830	0.857	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1680	1940	pg/L	86.7	(40%-135%)
13C-1,2,3,7,8-PeCDD		1710	1940	pg/L	88.2	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1560	1940	pg/L	80.7	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1650	1940	pg/L	85.3	(40%-135%)
13C-OCDD		2090	3870	pg/L	53.9	(40%-135%)
13C-2,3,7,8-TCDF		1510	1940	pg/L	77.9	(40%-135%)
13C-1,2,3,7,8-PeCDF		1650	1940	pg/L	85.3	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1380	1940	pg/L	71.4	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1330	1940	pg/L	68.9	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144005**	**Date Collected:**	**11/22/2016 15:10**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/13/2016 22:56**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b13dec16c-9**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**1045.2 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.492		pg/L	0.492	9.57
40321-76-4	1,2,3,7,8-PeCDD	U	.476		pg/L	0.476	47.8
39227-28-6	1,2,3,4,7,8-HxCDD	U	.509		pg/L	0.509	47.8
57653-85-7	1,2,3,6,7,8-HxCDD	JK		0.593	pg/L	0.492	47.8
19408-74-3	1,2,3,7,8,9-HxCDD	U	.515		pg/L	0.515	47.8
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	8.21		pg/L	1.21	47.8
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	33.7		pg/L	2.45	95.7
51207-31-9	2,3,7,8-TCDF	U	.779		pg/L	0.779	9.57
57117-41-6	1,2,3,7,8-PeCDF	JK		0.421	pg/L	0.360	47.8
57117-31-4	2,3,4,7,8-PeCDF	U	.312		pg/L	0.312	47.8
70648-26-9	1,2,3,4,7,8-HxCDF	U	.333		pg/L	0.333	47.8
57117-44-9	1,2,3,6,7,8-HxCDF	U	.318		pg/L	0.318	47.8
60851-34-5	2,3,4,6,7,8-HxCDF	U	.327		pg/L	0.327	47.8
72918-21-9	1,2,3,7,8,9-HxCDF	U	.419		pg/L	0.419	47.8
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	1.22		pg/L	0.528	47.8
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.704		pg/L	0.704	47.8
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	2.95		pg/L	2.03	95.7
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.492		pg/L	0.492	9.57
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.476	0.708	pg/L	0.476	47.8
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	3.23	6.26	pg/L	0.492	47.8
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	17.7		pg/L	1.21	47.8
30402-14-3	Total Tetrachlorodibenzofuran	U	.779		pg/L	0.779	9.57
30402-15-4	Total Pentachlorodibenzofuran	J	0.517	1.99	pg/L	0.235	47.8
55684-94-1	Total Hexachlorodibenzofuran	J	1.88		pg/L	0.318	47.8
38998-75-3	Total Heptachlorodibenzofuran	J	3.04		pg/L	0.528	47.8
3333-30-0	TEQ WHO2005 ND=0		0.105	0.177	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		0.830	0.872	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1410	1910	pg/L	73.9	(40%-135%)
13C-1,2,3,7,8-PeCDD		1450	1910	pg/L	76.0	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1360	1910	pg/L	71.2	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1430	1910	pg/L	75.0	(40%-135%)
13C-OCDD		1760	3830	pg/L	46.0	(40%-135%)
13C-2,3,7,8-TCDF		1290	1910	pg/L	67.5	(40%-135%)
13C-1,2,3,7,8-PeCDF		1420	1910	pg/L	74.1	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1210	1910	pg/L	63.0	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1150	1910	pg/L	60.1	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144006**	**Date Collected:**	**11/22/2016 14:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/13/2016 23:45**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b13dec16c-10**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**1038.8 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.535		pg/L	0.535	9.63
40321-76-4	1,2,3,7,8-PeCDD	U	.429		pg/L	0.429	48.1
39227-28-6	1,2,3,4,7,8-HxCDD	U	.541		pg/L	0.541	48.1
57653-85-7	1,2,3,6,7,8-HxCDD	J	0.674		pg/L	0.522	48.1
19408-74-3	1,2,3,7,8,9-HxCDD	U	.547		pg/L	0.547	48.1
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	12.8		pg/L	0.940	48.1
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	86.5		pg/L	1.59	96.3
51207-31-9	2,3,7,8-TCDF	U	.683		pg/L	0.683	9.63
57117-41-6	1,2,3,7,8-PeCDF	U	.368		pg/L	0.368	48.1
57117-31-4	2,3,4,7,8-PeCDF	U	.32		pg/L	0.320	48.1
70648-26-9	1,2,3,4,7,8-HxCDF	U	.339		pg/L	0.339	48.1
57117-44-9	1,2,3,6,7,8-HxCDF	U	.322		pg/L	0.322	48.1
60851-34-5	2,3,4,6,7,8-HxCDF	U	.333		pg/L	0.333	48.1
72918-21-9	1,2,3,7,8,9-HxCDF	U	.425		pg/L	0.425	48.1
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	1.73		pg/L	0.491	48.1
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.655		pg/L	0.655	48.1
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	3.18		pg/L	1.88	96.3
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.535		pg/L	0.535	9.63
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.429		pg/L	0.429	48.1
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	2.19	2.85	pg/L	0.522	48.1
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	22.3		pg/L	0.940	48.1
30402-14-3	Total Tetrachlorodibenzofuran	U	.683		pg/L	0.683	9.63
30402-15-4	Total Pentachlorodibenzofuran	U	.243	0.481	pg/L	0.243	48.1
55684-94-1	Total Hexachlorodibenzofuran	J	1.75	2.12	pg/L	0.322	48.1
38998-75-3	Total Heptachlorodibenzofuran	J	4.52		pg/L	0.491	48.1
3333-30-0	TEQ WHO2005 ND=0		0.240	0.240	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		0.939	0.939	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1440	1930	pg/L	75.0	(40%-135%)
13C-1,2,3,7,8-PeCDD		1450	1930	pg/L	75.3	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1390	1930	pg/L	72.4	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1460	1930	pg/L	75.8	(40%-135%)
13C-OCDD		1730	3850	pg/L	44.9	(40%-135%)
13C-2,3,7,8-TCDF		1300	1930	pg/L	67.6	(40%-135%)
13C-1,2,3,7,8-PeCDF		1400	1930	pg/L	72.7	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1230	1930	pg/L	63.7	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1160	1930	pg/L	60.5	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144007**	**Date Collected:**	**11/22/2016 14:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/14/2016 00:33**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b13dec16c-11**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**974.2 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.456		pg/L	0.456	10.3
40321-76-4	1,2,3,7,8-PeCDD	JK		1.48	pg/L	0.460	51.3
39227-28-6	1,2,3,4,7,8-HxCDD	J	2.38		pg/L	0.710	51.3
57653-85-7	1,2,3,6,7,8-HxCDD	J	4.66		pg/L	0.686	51.3
19408-74-3	1,2,3,7,8,9-HxCDD	J	4.00		pg/L	0.719	51.3
35822-46-9	1,2,3,4,6,7,8-HpCDD		208		pg/L	1.63	51.3
3268-87-9	1,2,3,4,6,7,8,9-OCDD		2360		pg/L	3.65	103
51207-31-9	2,3,7,8-TCDF	U	.786		pg/L	0.786	10.3
57117-41-6	1,2,3,7,8-PeCDF	JK		0.616	pg/L	0.367	51.3
57117-31-4	2,3,4,7,8-PeCDF	JK		0.739	pg/L	0.318	51.3
70648-26-9	1,2,3,4,7,8-HxCDF	JK		0.883	pg/L	0.298	51.3
57117-44-9	1,2,3,6,7,8-HxCDF	J	0.657		pg/L	0.283	51.3
60851-34-5	2,3,4,6,7,8-HxCDF	JK		0.985	pg/L	0.294	51.3
72918-21-9	1,2,3,7,8,9-HxCDF	U	.376		pg/L	0.376	51.3
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	15.9		pg/L	0.579	51.3
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	1.33		pg/L	0.770	51.3
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	54.3		pg/L	1.54	103
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.456		pg/L	0.456	10.3
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	0		pg/L	17.1	51.3
34465-46-8	Total Hexachlorodibenzo-p-dioxin		137	139	pg/L	0.686	51.3
37871-00-4	Total Heptachlorodibenzo-p-dioxin		1870		pg/L	1.63	51.3
30402-14-3	Total Tetrachlorodibenzofuran	J	2.92	3.80	pg/L	0.786	10.3
30402-15-4	Total Pentachlorodibenzofuran	J	9.20	10.6	pg/L	0.318	51.3
55684-94-1	Total Hexachlorodibenzofuran	J	27.8	30.5	pg/L	0.283	51.3
38998-75-3	Total Heptachlorodibenzofuran		76.7	78.1	pg/L	0.579	51.3
3333-30-0	TEQ WHO2005 ND=0		4.15	6.05	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		4.75	6.34	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1670	2050	pg/L	81.5	(40%-135%)
13C-1,2,3,7,8-PeCDD		1650	2050	pg/L	80.5	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1610	2050	pg/L	78.2	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1700	2050	pg/L	82.8	(40%-135%)
13C-OCDD		2140	4110	pg/L	52.1	(40%-135%)
13C-2,3,7,8-TCDF		1510	2050	pg/L	73.7	(40%-135%)
13C-1,2,3,7,8-PeCDF		1630	2050	pg/L	79.4	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1430	2050	pg/L	69.5	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1390	2050	pg/L	67.8	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144008**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/14/2016 01:22**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b13dec16c-12**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**971.7 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	JK		1.52	pg/L	0.510	10.3
40321-76-4	1,2,3,7,8-PeCDD	JK		10.4	pg/L	0.370	51.5
39227-28-6	1,2,3,4,7,8-HxCDD	J	8.40		pg/L	0.636	51.5
57653-85-7	1,2,3,6,7,8-HxCDD	J	32.9		pg/L	0.615	51.5
19408-74-3	1,2,3,7,8,9-HxCDD	J	20.9		pg/L	0.644	51.5
35822-46-9	1,2,3,4,6,7,8-HpCDD		693		pg/L	1.85	51.5
3268-87-9	1,2,3,4,6,7,8,9-OCDD		5250		pg/L	4.69	103
51207-31-9	2,3,7,8-TCDF	J	4.43		pg/L	1.32	10.3
57117-41-6	1,2,3,7,8-PeCDF	J	3.33		pg/L	0.399	51.5
57117-31-4	2,3,4,7,8-PeCDF	J	36.2		pg/L	0.348	51.5
70648-26-9	1,2,3,4,7,8-HxCDF	J	10.6		pg/L	0.502	51.5
57117-44-9	1,2,3,6,7,8-HxCDF	J	11.8		pg/L	0.478	51.5
60851-34-5	2,3,4,6,7,8-HxCDF	J	24.7		pg/L	0.494	51.5
72918-21-9	1,2,3,7,8,9-HxCDF	J	4.73		pg/L	0.632	51.5
67562-39-4	1,2,3,4,6,7,8-HpCDF		106		pg/L	0.821	51.5
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	8.17		pg/L	1.09	51.5
39001-02-0	1,2,3,4,6,7,8,9-OCDF		334		pg/L	1.85	103
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	J	6.24	18.4	pg/L	0.510	10.3
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	47.8	61.4	pg/L	0.370	51.5
34465-46-8	Total Hexachlorodibenzo-p-dioxin		253		pg/L	0.615	51.5
37871-00-4	Total Heptachlorodibenzo-p-dioxin		1440		pg/L	1.85	51.5
30402-14-3	Total Tetrachlorodibenzofuran		134	144	pg/L	1.32	10.3
30402-15-4	Total Pentachlorodibenzofuran		394		pg/L	0.208	51.5
55684-94-1	Total Hexachlorodibenzofuran		366		pg/L	0.478	51.5
38998-75-3	Total Heptachlorodibenzofuran		350		pg/L	0.821	51.5
3333-30-0	TEQ WHO2005 ND=0		32.6	44.5	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		33.0	44.5	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1740	2060	pg/L	84.6	(40%-135%)
13C-1,2,3,7,8-PeCDD		1660	2060	pg/L	80.7	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1580	2060	pg/L	76.9	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1700	2060	pg/L	82.7	(40%-135%)
13C-OCDD		2130	4120	pg/L	51.8	(40%-135%)
13C-2,3,7,8-TCDF		1590	2060	pg/L	77.0	(40%-135%)
13C-1,2,3,7,8-PeCDF		1570	2060	pg/L	76.1	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1410	2060	pg/L	68.3	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1330	2060	pg/L	64.7	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144009**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/14/2016 02:10**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b13dec16c-13**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**1026.3 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.409		pg/L	0.409	9.74
40321-76-4	1,2,3,7,8-PeCDD	JK		6.72	pg/L	0.349	48.7
39227-28-6	1,2,3,4,7,8-HxCDD	J	1.29		pg/L	0.491	48.7
57653-85-7	1,2,3,6,7,8-HxCDD	J	2.90		pg/L	0.474	48.7
19408-74-3	1,2,3,7,8,9-HxCDD	J	2.24		pg/L	0.497	48.7
35822-46-9	1,2,3,4,6,7,8-HpCDD		51.9		pg/L	0.826	48.7
3268-87-9	1,2,3,4,6,7,8,9-OCDD		338		pg/L	3.55	97.4
51207-31-9	2,3,7,8-TCDF		14.1		pg/L	1.42	9.74
57117-41-6	1,2,3,7,8-PeCDF	J	3.94		pg/L	0.563	48.7
57117-31-4	2,3,4,7,8-PeCDF	J	9.18		pg/L	0.489	48.7
70648-26-9	1,2,3,4,7,8-HxCDF	J	4.52		pg/L	0.491	48.7
57117-44-9	1,2,3,6,7,8-HxCDF	JK		4.77	pg/L	0.468	48.7
60851-34-5	2,3,4,6,7,8-HxCDF	J	8.56		pg/L	0.483	48.7
72918-21-9	1,2,3,7,8,9-HxCDF	JK		1.44	pg/L	0.618	48.7
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	45.6		pg/L	0.641	48.7
55673-89-7	1,2,3,4,7,8,9-HpCDF	J	2.46		pg/L	0.854	48.7
39001-02-0	1,2,3,4,6,7,8,9-OCDF	J	42.7		pg/L	1.35	97.4
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.409		pg/L	0.409	9.74
36088-22-9	Total Pentachlorodibenzo-p-dioxin	J	5.28	13.7	pg/L	0.349	48.7
34465-46-8	Total Hexachlorodibenzo-p-dioxin	J	29.0	29.6	pg/L	0.474	48.7
37871-00-4	Total Heptachlorodibenzo-p-dioxin		107		pg/L	0.826	48.7
30402-14-3	Total Tetrachlorodibenzofuran		91.6	96.4	pg/L	1.42	9.74
30402-15-4	Total Pentachlorodibenzofuran		143	144	pg/L	0.184	48.7
55684-94-1	Total Hexachlorodibenzofuran		115	123	pg/L	0.468	48.7
38998-75-3	Total Heptachlorodibenzofuran		92.0		pg/L	0.641	48.7
3333-30-0	TEQ WHO2005 ND=0		7.35	14.7	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		7.78	14.9	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1560	1950	pg/L	80.2	(40%-135%)
13C-1,2,3,7,8-PeCDD		1530	1950	pg/L	78.4	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1440	1950	pg/L	73.7	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1520	1950	pg/L	77.8	(40%-135%)
13C-OCDD		1820	3900	pg/L	46.7	(40%-135%)
13C-2,3,7,8-TCDF		1370	1950	pg/L	70.2	(40%-135%)
13C-1,2,3,7,8-PeCDF		1430	1950	pg/L	73.6	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1270	1950	pg/L	65.1	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1210	1950	pg/L	62.3	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144009**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/22/2016 14:51**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b22dec16a-20**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**1026.3 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
51207-31-9	2,3,7,8-TCDF		14.7		pg/L	3.57	9.74

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144010**	**Date Collected:**	**11/22/2016 15:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/14/2016 02:59**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b13dec16c-14**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**1037.7 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.382		pg/L	0.382	9.64
40321-76-4	1,2,3,7,8-PeCDD	U	.389		pg/L	0.389	48.2
39227-28-6	1,2,3,4,7,8-HxCDD	U	.376		pg/L	0.376	48.2
57653-85-7	1,2,3,6,7,8-HxCDD	U	.364		pg/L	0.364	48.2
19408-74-3	1,2,3,7,8,9-HxCDD	U	.382		pg/L	0.382	48.2
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	1.73		pg/L	0.592	48.2
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	11.8		pg/L	1.80	96.4
51207-31-9	2,3,7,8-TCDF	U	.484		pg/L	0.484	9.64
57117-41-6	1,2,3,7,8-PeCDF	U	.249		pg/L	0.249	48.2
57117-31-4	2,3,4,7,8-PeCDF	U	.216		pg/L	0.216	48.2
70648-26-9	1,2,3,4,7,8-HxCDF	U	.285		pg/L	0.285	48.2
57117-44-9	1,2,3,6,7,8-HxCDF	U	.272		pg/L	0.272	48.2
60851-34-5	2,3,4,6,7,8-HxCDF	U	.279		pg/L	0.279	48.2
72918-21-9	1,2,3,7,8,9-HxCDF	U	.358		pg/L	0.358	48.2
67562-39-4	1,2,3,4,6,7,8-HpCDF	J	0.463		pg/L	0.380	48.2
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	.507		pg/L	0.507	48.2
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	1.44		pg/L	1.44	96.4
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.382		pg/L	0.382	9.64
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.389		pg/L	0.389	48.2
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.364		pg/L	0.364	48.2
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	3.32		pg/L	0.592	48.2
30402-14-3	Total Tetrachlorodibenzofuran	U	.484		pg/L	0.484	9.64
30402-15-4	Total Pentachlorodibenzofuran	U	.2		pg/L	0.200	48.2
55684-94-1	Total Hexachlorodibenzofuran	U	.272		pg/L	0.272	48.2
38998-75-3	Total Heptachlorodibenzofuran	J	0.463		pg/L	0.380	48.2
3333-30-0	TEQ WHO2005 ND=0		0.0255	0.0255	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		0.590	0.590	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1640	1930	pg/L	85.3	(40%-135%)
13C-1,2,3,7,8-PeCDD		1630	1930	pg/L	84.4	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1540	1930	pg/L	79.8	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1620	1930	pg/L	83.9	(40%-135%)
13C-OCDD		1950	3850	pg/L	50.7	(40%-135%)
13C-2,3,7,8-TCDF		1460	1930	pg/L	76.0	(40%-135%)
13C-1,2,3,7,8-PeCDF		1550	1930	pg/L	80.3	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1350	1930	pg/L	70.1	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1330	1930	pg/L	68.8	(40%-135%)

Comments:

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144011**	**Date Collected:**	**11/22/2016 14:50**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/23/2016 16:18**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b23dec16b-3**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**1037.7 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	4.2		pg/L	4.20	9.64
40321-76-4	1,2,3,7,8-PeCDD	U	2.6		pg/L	2.60	48.2
39227-28-6	1,2,3,4,7,8-HxCDD	U	3.18		pg/L	3.18	48.2
57653-85-7	1,2,3,6,7,8-HxCDD	U	3.06		pg/L	3.06	48.2
19408-74-3	1,2,3,7,8,9-HxCDD	U	3.22		pg/L	3.22	48.2
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	6.61		pg/L	6.61	48.2
3268-87-9	1,2,3,4,6,7,8,9-OCDD	JK		17.5	pg/L	13.6	96.4
51207-31-9	2,3,7,8-TCDF	U	5.51		pg/L	5.51	9.64
57117-41-6	1,2,3,7,8-PeCDF	U	2.56		pg/L	2.56	48.2
57117-31-4	2,3,4,7,8-PeCDF	U	2.24		pg/L	2.24	48.2
70648-26-9	1,2,3,4,7,8-HxCDF	U	2.64		pg/L	2.64	48.2
57117-44-9	1,2,3,6,7,8-HxCDF	U	2.51		pg/L	2.51	48.2
60851-34-5	2,3,4,6,7,8-HxCDF	U	2.6		pg/L	2.60	48.2
72918-21-9	1,2,3,7,8,9-HxCDF	U	3.32		pg/L	3.32	48.2
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	2.97		pg/L	2.97	48.2
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	3.97		pg/L	3.97	48.2
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	17.2		pg/L	17.2	96.4
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	4.2		pg/L	4.20	9.64
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	2.6		pg/L	2.60	48.2
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	3.06		pg/L	3.06	48.2
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	6.69		pg/L	6.61	48.2
30402-14-3	Total Tetrachlorodibenzofuran	U	5.51		pg/L	5.51	9.64
30402-15-4	Total Pentachlorodibenzofuran	U	2.24		pg/L	2.24	48.2
55684-94-1	Total Hexachlorodibenzofuran	U	2.51		pg/L	2.51	48.2
38998-75-3	Total Heptachlorodibenzofuran	U	2.97		pg/L	2.97	48.2
3333-30-0	TEQ WHO2005 ND=0		0.00	0.00526	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		5.15	5.15	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-2,3,7,8-TCDD		1360	1930	pg/L	70.7		(40%-135%)
13C-1,2,3,7,8-PeCDD		1400	1930	pg/L	72.9		(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1580	1930	pg/L	81.9		(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1330	1930	pg/L	68.9		(40%-135%)
13C-OCDD		1530	3850	pg/L	39.7	*	(40%-135%)
13C-2,3,7,8-TCDF		1290	1930	pg/L	66.8		(40%-135%)
13C-1,2,3,7,8-PeCDF		1270	1930	pg/L	66.1		(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1390	1930	pg/L	72.0		(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1270	1930	pg/L	65.9		(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144012**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/23/2016 17:06**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b23dec16b-4**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**1036 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	3.47		pg/L	3.47	9.65
40321-76-4	1,2,3,7,8-PeCDD	U	2.55		pg/L	2.55	48.3
39227-28-6	1,2,3,4,7,8-HxCDD	U	2.93		pg/L	2.93	48.3
57653-85-7	1,2,3,6,7,8-HxCDD	U	2.84		pg/L	2.84	48.3
19408-74-3	1,2,3,7,8,9-HxCDD	U	2.97		pg/L	2.97	48.3
35822-46-9	1,2,3,4,6,7,8-HpCDD	U	6.1		pg/L	6.10	48.3
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	15.5		pg/L	11.0	96.5
51207-31-9	2,3,7,8-TCDF	U	5.33		pg/L	5.33	9.65
57117-41-6	1,2,3,7,8-PeCDF	U	2.49		pg/L	2.49	48.3
57117-31-4	2,3,4,7,8-PeCDF	U	2.16		pg/L	2.16	48.3
70648-26-9	1,2,3,4,7,8-HxCDF	U	2.55		pg/L	2.55	48.3
57117-44-9	1,2,3,6,7,8-HxCDF	U	2.43		pg/L	2.43	48.3
60851-34-5	2,3,4,6,7,8-HxCDF	U	2.51		pg/L	2.51	48.3
72918-21-9	1,2,3,7,8,9-HxCDF	U	3.2		pg/L	3.20	48.3
67562-39-4	1,2,3,4,6,7,8-HpCDF	U	2.68		pg/L	2.68	48.3
55673-89-7	1,2,3,4,7,8,9-HpCDF	U	3.57		pg/L	3.57	48.3
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	14.3		pg/L	14.3	96.5
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	3.47		pg/L	3.47	9.65
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	2.55		pg/L	2.55	48.3
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	2.84		pg/L	2.84	48.3
37871-00-4	Total Heptachlorodibenzo-p-dioxin	U	6.1	8.65	pg/L	6.10	48.3
30402-14-3	Total Tetrachlorodibenzofuran	U	5.33		pg/L	5.33	9.65
30402-15-4	Total Pentachlorodibenzofuran	U	2.16		pg/L	2.16	48.3
55684-94-1	Total Hexachlorodibenzofuran	U	2.43		pg/L	2.43	48.3
38998-75-3	Total Heptachlorodibenzofuran	U	2.68		pg/L	2.68	48.3
3333-30-0	TEQ WHO2005 ND=0		0.00464	0.00464	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		4.68	4.68	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-2,3,7,8-TCDD		1450	1930	pg/L	75.1		(40%-135%)
13C-1,2,3,7,8-PeCDD		1430	1930	pg/L	74.2		(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1610	1930	pg/L	83.2		(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1270	1930	pg/L	66.0		(40%-135%)
13C-OCDD		1520	3860	pg/L	39.3	*	(40%-135%)
13C-2,3,7,8-TCDF		1330	1930	pg/L	68.8		(40%-135%)
13C-1,2,3,7,8-PeCDF		1250	1930	pg/L	64.9		(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1380	1930	pg/L	71.4		(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1200	1930	pg/L	62.0		(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A6K0789

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017531	LCS for batch 33520	13C-2,3,7,8-TCDD		82.9	(40%-135%)
		13C-1,2,3,7,8-PeCDD		82.4	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		77.6	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		80.1	(40%-135%)
		13C-OCDD		39.0 *	(40%-135%)
		13C-2,3,7,8-TCDF		75.8	(40%-135%)
		13C-1,2,3,7,8-PeCDF		78.5	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		67.9	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		61.6	(40%-135%)
12017532	LCSD for batch 33520	13C-2,3,7,8-TCDD		87.2	(40%-135%)
		13C-1,2,3,7,8-PeCDD		88.7	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		82.3	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		87.9	(40%-135%)
		13C-OCDD		52.6	(40%-135%)
		13C-2,3,7,8-TCDF		80.0	(40%-135%)
		13C-1,2,3,7,8-PeCDF		85.9	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		73.3	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		71.3	(40%-135%)
12017530	MB for batch 33520	13C-2,3,7,8-TCDD		87.4	(40%-135%)
		13C-1,2,3,7,8-PeCDD		89.8	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		83.9	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		90.8	(40%-135%)
		13C-OCDD		58.2	(40%-135%)
		13C-2,3,7,8-TCDF		80.8	(40%-135%)
		13C-1,2,3,7,8-PeCDF		86.8	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		74.9	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		73.6	(40%-135%)
10144001	B18-D-CB1	13C-2,3,7,8-TCDD		82.3	(40%-135%)
		13C-1,2,3,7,8-PeCDD		86.1	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		82.0	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		88.2	(40%-135%)
		13C-OCDD		58.0	(40%-135%)
		13C-2,3,7,8-TCDF		74.6	(40%-135%)
		13C-1,2,3,7,8-PeCDF		85.7	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		72.9	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		73.2	(40%-135%)
10144002	B18-D-CB3	13C-2,3,7,8-TCDD		82.2	(40%-135%)
		13C-1,2,3,7,8-PeCDD		83.6	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		80.0	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		86.6	(40%-135%)
		13C-OCDD		52.8	(40%-135%)
		13C-2,3,7,8-TCDF		74.3	(40%-135%)
		13C-1,2,3,7,8-PeCDF		83.2	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		72.4	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		69.5	(40%-135%)
10144003	B18-F-1	13C-2,3,7,8-TCDD		85.0	(40%-135%)
		13C-1,2,3,7,8-PeCDD		88.6	(40%-135%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A6K0789

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
10144003	B18-F-1	13C-1,2,3,6,7,8-HxCDD		80.8	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		86.2	(40%-135%)
		13C-OCDD		54.5	(40%-135%)
		13C-2,3,7,8-TCDF		77.3	(40%-135%)
		13C-1,2,3,7,8-PeCDF		80.3	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		71.4	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		69.6	(40%-135%)
10144004	B18-F-2	13C-2,3,7,8-TCDD		86.7	(40%-135%)
		13C-1,2,3,7,8-PeCDD		88.2	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		80.7	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		85.3	(40%-135%)
		13C-OCDD		53.9	(40%-135%)
		13C-2,3,7,8-TCDF		77.9	(40%-135%)
		13C-1,2,3,7,8-PeCDF		85.3	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		71.4	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		68.9	(40%-135%)
10144005	B18-F-3	13C-2,3,7,8-TCDD		73.9	(40%-135%)
		13C-1,2,3,7,8-PeCDD		76.0	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		71.2	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		75.0	(40%-135%)
		13C-OCDD		46.0	(40%-135%)
		13C-2,3,7,8-TCDF		67.5	(40%-135%)
		13C-1,2,3,7,8-PeCDF		74.1	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		63.0	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		60.1	(40%-135%)
10144006	B18-F-4	13C-2,3,7,8-TCDD		75.0	(40%-135%)
		13C-1,2,3,7,8-PeCDD		75.3	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		72.4	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		75.8	(40%-135%)
		13C-OCDD		44.9	(40%-135%)
		13C-2,3,7,8-TCDF		67.6	(40%-135%)
		13C-1,2,3,7,8-PeCDF		72.7	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		63.7	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		60.5	(40%-135%)
10144007	B18-F-5	13C-2,3,7,8-TCDD		81.5	(40%-135%)
		13C-1,2,3,7,8-PeCDD		80.5	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		78.2	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		82.8	(40%-135%)
		13C-OCDD		52.1	(40%-135%)
		13C-2,3,7,8-TCDF		73.7	(40%-135%)
		13C-1,2,3,7,8-PeCDF		79.4	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		69.5	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		67.8	(40%-135%)
10144008	B18-F-6	13C-2,3,7,8-TCDD		84.6	(40%-135%)
		13C-1,2,3,7,8-PeCDD		80.7	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		76.9	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		82.7	(40%-135%)

Hi-Res Dioxins/Furans
Surrogate Recovery Report

SDG Number: A6K0789

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
10144008	B18-F-6	13C-OCDD		51.8	(40%-135%)
		13C-2,3,7,8-TCDF		77.0	(40%-135%)
		13C-1,2,3,7,8-PeCDF		76.1	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		68.3	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		64.7	(40%-135%)
10144009	B18-F-7	13C-2,3,7,8-TCDD		80.2	(40%-135%)
		13C-1,2,3,7,8-PeCDD		78.4	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		73.7	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		77.8	(40%-135%)
		13C-OCDD		46.7	(40%-135%)
		13C-2,3,7,8-TCDF		70.2	(40%-135%)
		13C-1,2,3,7,8-PeCDF		73.6	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		65.1	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		62.3	(40%-135%)
10144010	B18-F-R1	13C-2,3,7,8-TCDD		85.3	(40%-135%)
		13C-1,2,3,7,8-PeCDD		84.4	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		79.8	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		83.9	(40%-135%)
		13C-OCDD		50.7	(40%-135%)
		13C-2,3,7,8-TCDF		76.0	(40%-135%)
		13C-1,2,3,7,8-PeCDF		80.3	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		70.1	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		68.8	(40%-135%)
10144011	B18-F-R2	13C-2,3,7,8-TCDD		70.7	(40%-135%)
		13C-1,2,3,7,8-PeCDD		72.9	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		81.9	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		68.9	(40%-135%)
		13C-OCDD		39.7 *	(40%-135%)
		13C-2,3,7,8-TCDF		66.8	(40%-135%)
		13C-1,2,3,7,8-PeCDF		66.1	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		72.0	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		65.9	(40%-135%)
10144012	B18-F-R3	13C-2,3,7,8-TCDD		75.1	(40%-135%)
		13C-1,2,3,7,8-PeCDD		74.2	(40%-135%)
		13C-1,2,3,6,7,8-HxCDD		83.2	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDD		66.0	(40%-135%)
		13C-OCDD		39.3 *	(40%-135%)
		13C-2,3,7,8-TCDF		68.8	(40%-135%)
		13C-1,2,3,7,8-PeCDF		64.9	(40%-135%)
		13C-1,2,3,6,7,8-HxCDF		71.4	(40%-135%)
		13C-1,2,3,4,6,7,8-HpCDF		62.0	(40%-135%)

* Recovery outside Acceptance Limits
# Column to be used to flag recovery values
D Sample Diluted

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: A6K0789 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 33520 **Matrix:** WATER

Lab Sample ID: 12017531

Instrument: HRP763 **Analysis Date:** 12/13/2016 17:17 **Dilution:** 1

Analyst: CLP **Prep Batch ID:** 33520

Batch ID: 33522

CAS No.		Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits
1746-01-6	LCS	2,3,7,8-TCDD	200	171	85.4	70-130
40321-76-4	LCS	1,2,3,7,8-PeCDD	1000	1010	101	70-130
39227-28-6	LCS	1,2,3,4,7,8-HxCDD	1000	1010	101	70-130
57653-85-7	LCS	1,2,3,6,7,8-HxCDD	1000	968	96.8	70-130
19408-74-3	LCS	1,2,3,7,8,9-HxCDD	1000	1040	104	70-130
35822-46-9	LCS	1,2,3,4,6,7,8-HpCDD	1000	992	99.2	70-130
3268-87-9	LCS	1,2,3,4,6,7,8,9-OCDD	2000	1940	96.8	70-130
51207-31-9	LCS	2,3,7,8-TCDF	200	182	91.2	70-130
57117-41-6	LCS	1,2,3,7,8-PeCDF	1000	1050	105	70-130
57117-31-4	LCS	2,3,4,7,8-PeCDF	1000	884	88.4	70-130
70648-26-9	LCS	1,2,3,4,7,8-HxCDF	1000	1080	108	70-130
57117-44-9	LCS	1,2,3,6,7,8-HxCDF	1000	1080	108	70-130
60851-34-5	LCS	2,3,4,6,7,8-HxCDF	1000	1060	106	70-130
72918-21-9	LCS	1,2,3,7,8,9-HxCDF	1000	1190	119	70-130
67562-39-4	LCS	1,2,3,4,6,7,8-HpCDF	1000	1040	104	70-130
55673-89-7	LCS	1,2,3,4,7,8,9-HpCDF	1000	1280	128	70-130
39001-02-0	LCS	1,2,3,4,6,7,8,9-OCDF	2000	2400	120	70-130

Hi-Res Dioxins/Furans

Quality Control Summary
Spike Recovery Report

SDG Number: A6K0789 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 33520 **Matrix:** WATER

Lab Sample ID: 12017532

Instrument: HRP763 **Analysis Date:** 12/13/2016 18:06 **Dilution:** 1

Analyst: CLP **Prep Batch ID:** 33520

Batch ID: 33522

CAS No.		Parmname	Amount Added pg/L	Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
1746-01-6	LCSD	2,3,7,8-TCDD	200	180	90.2	70-130	5.48	0-20
40321-76-4	LCSD	1,2,3,7,8-PeCDD	1000	1040	104	70-130	3.18	0-20
39227-28-6	LCSD	1,2,3,4,7,8-HxCDD	1000	1020	102	70-130	0.536	0-20
57653-85-7	LCSD	1,2,3,6,7,8-HxCDD	1000	1000	100	70-130	3.51	0-20
19408-74-3	LCSD	1,2,3,7,8,9-HxCDD	1000	1050	105	70-130	1.58	0-20
35822-46-9	LCSD	1,2,3,4,6,7,8-HpCDD	1000	1010	101	70-130	1.45	0-20
3268-87-9	LCSD	1,2,3,4,6,7,8,9-OCDD	2000	1980	99.2	70-130	2.45	0-20
51207-31-9	LCSD	2,3,7,8-TCDF	200	186	93.1	70-130	2.03	0-20
57117-41-6	LCSD	1,2,3,7,8-PeCDF	1000	1060	106	70-130	1.01	0-20
57117-31-4	LCSD	2,3,4,7,8-PeCDF	1000	886	88.6	70-130	0.244	0-20
70648-26-9	LCSD	1,2,3,4,7,8-HxCDF	1000	1060	106	70-130	1.49	0-20
57117-44-9	LCSD	1,2,3,6,7,8-HxCDF	1000	1110	111	70-130	2.60	0-20
60851-34-5	LCSD	2,3,4,6,7,8-HxCDF	1000	1050	105	70-130	0.956	0-20
72918-21-9	LCSD	1,2,3,7,8,9-HxCDF	1000	1170	117	70-130	1.30	0-20
67562-39-4	LCSD	1,2,3,4,6,7,8-HpCDF	1000	1080	108	70-130	3.06	0-20
55673-89-7	LCSD	1,2,3,4,7,8,9-HpCDF	1000	1230	123	70-130	3.74	0-20
39001-02-0	LCSD	1,2,3,4,6,7,8,9-OCDF	2000	2320	116	70-130	3.58	0-20

Method Blank Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 33520**	**Instrument ID:**	**HRP763**	**Data File:**	**b13dec16c-4**
Lab Sample ID:	**12017530**	**Prep Date:**	**08-DEC-16**	**Analyzed:**	**12/13/16 18:54**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 33520	12017531	b13dec16c-2	12/13/16	1717
02	LCSD for batch 33520	12017532	b13dec16c-3	12/13/16	1806
03	B18-D-CB1	10144001	b13dec16c-5	12/13/16	1943
04	B18-D-CB3	10144002	b13dec16c-6	12/13/16	2031
05	B18-F-1	10144003	b13dec16c-7	12/13/16	2120
06	B18-F-2	10144004	b13dec16c-8	12/13/16	2208
07	B18-F-3	10144005	b13dec16c-9	12/13/16	2256
08	B18-F-4	10144006	b13dec16c-10	12/13/16	2345
09	B18-F-5	10144007	b13dec16c-11	12/14/16	0033
10	B18-F-6	10144008	b13dec16c-12	12/14/16	0122
11	B18-F-7	10144009	b13dec16c-13	12/14/16	0210
12	B18-F-R1	10144010	b13dec16c-14	12/14/16	0259
13	B18-F-7	10144009	b22dec16a-20	12/22/16	1451
14	B18-F-R2	10144011	b23dec16b-3	12/23/16	1618
15	B18-F-R3	10144012	b23dec16b-4	12/23/16	1706

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017530**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33520**				
Client ID:	**MB for batch 33520**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/13/2016 18:54**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b13dec16c-4**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD	U	.542		pg/L	0.542	10.0
40321-76-4	1,2,3,7,8-PeCDD	U	.374		pg/L	0.374	50.0
39227-28-6	1,2,3,4,7,8-HxCDD	U	.37		pg/L	0.370	50.0
57653-85-7	1,2,3,6,7,8-HxCDD	JK		0.440	pg/L	0.358	50.0
19408-74-3	1,2,3,7,8,9-HxCDD	JK		0.480	pg/L	0.374	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD	J	0.760		pg/L	0.598	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD	J	1.56		pg/L	1.15	100
51207-31-9	2,3,7,8-TCDF	U	.808		pg/L	0.808	10.0
57117-41-6	1,2,3,7,8-PeCDF	JK		0.600	pg/L	0.274	50.0
57117-31-4	2,3,4,7,8-PeCDF	JK		0.360	pg/L	0.238	50.0
70648-26-9	1,2,3,4,7,8-HxCDF	U	.368		pg/L	0.368	50.0
57117-44-9	1,2,3,6,7,8-HxCDF	U	.35		pg/L	0.350	50.0
60851-34-5	2,3,4,6,7,8-HxCDF	J	0.420		pg/L	0.362	50.0
72918-21-9	1,2,3,7,8,9-HxCDF	J	0.560		pg/L	0.462	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF	JK		0.440	pg/L	0.316	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF	JK		0.500	pg/L	0.422	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF	U	1.62		pg/L	1.62	100
41903-57-5	Total Tetrachlorodibenzo-p-dioxin	U	.542		pg/L	0.542	10.0
36088-22-9	Total Pentachlorodibenzo-p-dioxin	U	.374		pg/L	0.374	50.0
34465-46-8	Total Hexachlorodibenzo-p-dioxin	U	.358	0.920	pg/L	0.358	50.0
37871-00-4	Total Heptachlorodibenzo-p-dioxin	J	0.760		pg/L	0.598	50.0
30402-14-3	Total Tetrachlorodibenzofuran	U	.808		pg/L	0.808	10.0
30402-15-4	Total Pentachlorodibenzofuran	U	.238	0.960	pg/L	0.238	50.0
55684-94-1	Total Hexachlorodibenzofuran	J	0.980		pg/L	0.350	50.0
38998-75-3	Total Heptachlorodibenzofuran	U	.316	0.940	pg/L	0.316	50.0
3333-30-0	TEQ WHO2005 ND=0		0.106	0.333	pg/L		
3333-30-1	TEQ WHO2005 ND=0.5		0.739	0.887	pg/L		

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1750	2000	pg/L	87.4	(40%-135%)
13C-1,2,3,7,8-PeCDD		1800	2000	pg/L	89.8	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1680	2000	pg/L	83.9	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1820	2000	pg/L	90.8	(40%-135%)
13C-OCDD		2330	4000	pg/L	58.2	(40%-135%)
13C-2,3,7,8-TCDF		1620	2000	pg/L	80.8	(40%-135%)
13C-1,2,3,7,8-PeCDF		1740	2000	pg/L	86.8	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1500	2000	pg/L	74.9	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1470	2000	pg/L	73.6	(40%-135%)

Comments:

J Value is estimated

K Estimated Maximum Possible Concentration

U Analyte was analyzed for, but not detected above the specified detection limit.

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017531**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33520**				
Client ID:	**LCS for batch 33520**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/13/2016 17:17**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b13dec16c-2**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		171		pg/L	0.672	10.0
40321-76-4	1,2,3,7,8-PeCDD		1010		pg/L	0.638	50.0
39227-28-6	1,2,3,4,7,8-HxCDD		1010		pg/L	0.988	50.0
57653-85-7	1,2,3,6,7,8-HxCDD		968		pg/L	0.956	50.0
19408-74-3	1,2,3,7,8,9-HxCDD		1040		pg/L	1.00	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD		992		pg/L	1.30	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1940		pg/L	4.48	100
51207-31-9	2,3,7,8-TCDF		182		pg/L	0.812	10.0
57117-41-6	1,2,3,7,8-PeCDF		1050		pg/L	0.886	50.0
57117-31-4	2,3,4,7,8-PeCDF		884		pg/L	0.768	50.0
70648-26-9	1,2,3,4,7,8-HxCDF		1080		pg/L	1.23	50.0
57117-44-9	1,2,3,6,7,8-HxCDF		1080		pg/L	1.17	50.0
60851-34-5	2,3,4,6,7,8-HxCDF		1060		pg/L	1.21	50.0
72918-21-9	1,2,3,7,8,9-HxCDF		1190		pg/L	1.54	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF		1040		pg/L	1.38	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF		1280		pg/L	1.84	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF		2400		pg/L	4.22	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%		Acceptable Limits
13C-2,3,7,8-TCDD		1660	2000	pg/L	82.9		(40%-135%)
13C-1,2,3,7,8-PeCDD		1650	2000	pg/L	82.4		(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1550	2000	pg/L	77.6		(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1600	2000	pg/L	80.1		(40%-135%)
13C-OCDD		1560	4000	pg/L	39.0	*	(40%-135%)
13C-2,3,7,8-TCDF		1520	2000	pg/L	75.8		(40%-135%)
13C-1,2,3,7,8-PeCDF		1570	2000	pg/L	78.5		(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1360	2000	pg/L	67.9		(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1230	2000	pg/L	61.6		(40%-135%)

Comments:

K Estimated Maximum Possible Concentration

Hi-Res Dioxins/Furans
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017532**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33520**				
Client ID:	**LCSD for batch 33520**			**Prep Basis:**	**As Received**
Batch ID:	**33522**	**Method:**	**SW846 8290A**		
Run Date:	**12/13/2016 18:06**	**Analyst:**	**CLP**	**Instrument:**	**HRP763**
Data File:	**b13dec16c-3**			**Dilution:**	**1**
Prep Batch:	**33520**	**Prep Method:**	**SW846 3520C**		
Prep Date:	**08-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	EMPC	Units	EDL	PQL
1746-01-6	2,3,7,8-TCDD		180		pg/L	0.664	10.0
40321-76-4	1,2,3,7,8-PeCDD		1040		pg/L	0.806	50.0
39227-28-6	1,2,3,4,7,8-HxCDD		1020		pg/L	1.01	50.0
57653-85-7	1,2,3,6,7,8-HxCDD		1000		pg/L	0.972	50.0
19408-74-3	1,2,3,7,8,9-HxCDD		1050		pg/L	1.02	50.0
35822-46-9	1,2,3,4,6,7,8-HpCDD		1010		pg/L	1.48	50.0
3268-87-9	1,2,3,4,6,7,8,9-OCDD		1980		pg/L	4.42	100
51207-31-9	2,3,7,8-TCDF		186		pg/L	1.04	10.0
57117-41-6	1,2,3,7,8-PeCDF		1060		pg/L	0.944	50.0
57117-31-4	2,3,4,7,8-PeCDF		886		pg/L	0.820	50.0
70648-26-9	1,2,3,4,7,8-HxCDF		1060		pg/L	1.55	50.0
57117-44-9	1,2,3,6,7,8-HxCDF		1110		pg/L	1.47	50.0
60851-34-5	2,3,4,6,7,8-HxCDF		1050		pg/L	1.52	50.0
72918-21-9	1,2,3,7,8,9-HxCDF		1170		pg/L	1.94	50.0
67562-39-4	1,2,3,4,6,7,8-HpCDF		1080		pg/L	1.27	50.0
55673-89-7	1,2,3,4,7,8,9-HpCDF		1230		pg/L	1.70	50.0
39001-02-0	1,2,3,4,6,7,8,9-OCDF		2320		pg/L	3.62	100

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-2,3,7,8-TCDD		1740	2000	pg/L	87.2	(40%-135%)
13C-1,2,3,7,8-PeCDD		1770	2000	pg/L	88.7	(40%-135%)
13C-1,2,3,6,7,8-HxCDD		1650	2000	pg/L	82.3	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDD		1760	2000	pg/L	87.9	(40%-135%)
13C-OCDD		2100	4000	pg/L	52.6	(40%-135%)
13C-2,3,7,8-TCDF		1600	2000	pg/L	80.0	(40%-135%)
13C-1,2,3,7,8-PeCDF		1720	2000	pg/L	85.9	(40%-135%)
13C-1,2,3,6,7,8-HxCDF		1470	2000	pg/L	73.3	(40%-135%)
13C-1,2,3,4,6,7,8-HpCDF		1430	2000	pg/L	71.3	(40%-135%)

Comments:

K Estimated Maximum Possible Concentration

PCB Congeners Analysis

Case Narrative

PCBC Case Narrative
Apex Laboratories (APEX)
SDG A6K0789
Work Order 10144

Method/Analysis Information

Product:	**PCB Congeners by EPA Method 1668A in Liquids**
Analytical Method:	EPA Method 1668A
Extraction Method:	SW846 3520C
Analytical Batch Number:	33483
Clean Up Batch Number:	33481
Extraction Batch Number:	33480

Sample Analysis

The following samples were analyzed using the analytical protocol as established in EPA Method 1668A:

Sample ID	Client ID
10144001	B18-D-CB1
10144002	B18-D-CB3
10144003	B18-F-1
10144004	B18-F-2
10144005	B18-F-3
10144006	B18-F-4
10144007	B18-F-5
10144008	B18-F-6
10144009	B18-F-7
10144010	B18-F-R1
10144011	B18-F-R2
10144012	B18-F-R3
12017489	Method Blank (MB)
12017490	Laboratory Control Sample (LCS)
12017491	Laboratory Control Sample Duplicate (LCSD)

The samples in this SDG were analyzed on an "as received" basis.

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by Cape Fear Analytical LLC (CFA) as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with CF-OA-E-003 REV# 6.

Raw data reports are processed and reviewed by the analyst using the TargetLynx software package.

Calibration Information

Initial Calibration
All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements
All associated calibration verification standard(s) (ICV or CCV) met the acceptance criteria.

Quality Control (QC) Information

Certification Statement
The test results presented in this document are certified to meet all requirements of the 2009 TNI Standard.

Method Blank (MB) Statement
The MB(s) analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries
All surrogate recoveries were within the established acceptance criteria for this SDG.

Laboratory Control Sample (LCS) Recovery
The LCS spike recoveries met the acceptance limits.

Laboratory Control Sample Duplicate (LCSD) Recovery
The LCSD spike recoveries met the acceptance limits.

LCS/LCSD Relative Percent Difference (RPD) Statement
The RPD(s) between the LCS and LCSD met the acceptance limits.

QC Sample Designation
A matrix spike and matrix spike duplicate analysis was not required for this SDG.

Technical Information

Holding Time Specifications
CFA assigns holding times based on the associated methodology, which assigns the date and time from sample collection. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification
All procedures were performed as stated in the SOP.

Sample Dilutions
Samples 10144008 (B18-F-6) and 10144009 (B18-F-7) were diluted due to the presence of over-range target analytes.

Sample Re-extraction/Re-analysis
Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Nonconformance (NCR) Documentation
A NCR was not required for this SDG.

Manual Integrations
Manual integrations were required for data files in this SDG. Certain standards and QC samples required manual integrations to correctly position the baseline as set in the calibration standard injections. Where manual integrations were performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

System Configuration
This analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
HRP791_1	PCB Analysis	PCB Analysis	SPB-Octyl	30m x 0.25mm, 0.25um

Electronic Packaging Comment

This data package was generated using an electronic data processing program referred to as virtual packaging. In an effort to increase quality and efficiency, the laboratory has developed systems to generate all data packages electronically. The following change from traditional packages should be noted: Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. An electronic signature page inserted after the case narrative will include the data validator's signature and title. The signature page also includes the data qualifiers used in the fractional package. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Sample Data Summary

Cape Fear Analytical, LLC

3306 Kitty Hawk Road Suite 120, Wilmington, NC 28405 - (910) 795-0421 - www.capefearanalytical.com

Qualifier Definition Report
for

APEX001 Apex Laboratories

Client SDG: A6K0789 CFA Work Order: 10144

The Qualifiers in this report are defined as follows:

* A quality control analyte recovery is outside of specified acceptance criteria

** Analyte is a surrogate compound

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

DL Indicates that sample is diluted.
RA Indicates that sample is re-analyzed without re-extraction.
RE Indicates that sample is re-extracted.

Review/Validation

Cape Fear Analytical requires all analytical data to be verified by a qualified data reviewer.

The following data validator verified the information presented in this case narrative:

Signature: **Name: Heather Patterson**

Date: 21 DEC 2016 **Title: Group Leader**

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144001**	**Date Collected:**	**11/22/2016 14:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 12:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	5.18	pg/L	3.28	19.2
2051-61-8	2-MoCB	U	2.86	pg/L	2.86	19.2
2051-62-9	3-MoCB	U	2.74	pg/L	2.74	19.2
13029-08-8	4-DiCB	U	13.8	pg/L	13.8	19.2
16605-91-7	5-DiCB	U	8.48	pg/L	8.48	19.2
25569-80-6	6-DiCB	U	6.52	pg/L	6.52	19.2
33284-50-3	7-DiCB	U	7.04	pg/L	7.04	19.2
34883-43-7	8-DiCB		22.6	pg/L	6.06	19.2
34883-39-1	9-DiCB	U	7.37	pg/L	7.37	19.2
33146-45-1	10-DiCB	U	5.58	pg/L	5.58	19.2
2050-67-1	11-DiCB	U	46.9	pg/L	46.9	96.0
2974-92-7	12-DiCB	CU	7.37	pg/L	7.37	38.4
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	6.93	pg/L	6.93	19.2
2050-68-2	15-DiCB	U	19.4	pg/L	19.4	19.2
38444-78-9	16-TrCB	J	13.0	pg/L	1.71	19.2
37680-66-3	17-TrCB	J	9.90	pg/L	1.50	19.2
37680-65-2	18-TrCB	CJ	21.6	pg/L	1.19	38.4
38444-73-4	19-TrCB	J	3.91	pg/L	2.25	19.2
38444-84-7	20-TrCB	CJ	28.7	pg/L	1.06	38.4
55702-46-0	21-TrCB	CJ	16.1	pg/L	0.998	38.4
38444-85-8	22-TrCB	J	13.6	pg/L	1.09	19.2
55720-44-0	23-TrCB	U	1.07	pg/L	1.07	19.2
55702-45-9	24-TrCB	U	1.07	pg/L	1.07	19.2
55712-37-3	25-TrCB	J	2.03	pg/L	0.921	19.2
38444-81-4	26-TrCB	CJ	4.87	pg/L	1.02	38.4
38444-76-7	27-TrCB	J	2.42	pg/L	1.02	19.2
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		22.7	pg/L	0.940	19.2
38444-77-8	32-TrCB	J	6.16	pg/L	0.960	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144001**	**Date Collected:**	**11/22/2016 14:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 12:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.06	pg/L	1.06	19.2
37680-69-6	35-TrCB	J	2.15	pg/L	1.46	19.2
38444-87-0	36-TrCB	U	1.32	pg/L	1.32	19.2
38444-90-5	37-TrCB	J	17.4	pg/L	1.44	19.2
53555-66-1	38-TrCB	U	1.44	pg/L	1.44	19.2
38444-88-1	39-TrCB	U	1.42	pg/L	1.42	19.2
38444-93-8	40-TeCB	CJ	14.9	pg/L	1.42	38.4
52663-59-9	41-TeCB	J	3.93	pg/L	2.23	19.2
36559-22-5	42-TeCB	J	7.60	pg/L	1.59	19.2
70362-46-8	43-TeCB	U	1.9	pg/L	1.90	19.2
41464-39-5	44-TeCB	CJ	29.4	pg/L	1.50	57.6
70362-45-7	45-TeCB	CJ	4.91	pg/L	1.42	38.4
41464-47-5	46-TeCB	J	1.88	pg/L	1.52	19.2
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	6.22	pg/L	1.71	19.2
41464-40-8	49-TeCB	CJ	13.5	pg/L	1.40	38.4
62796-65-0	50-TeCB	CJ	2.69	pg/L	1.34	38.4
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		30.5	pg/L	1.63	19.2
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	1.36	pg/L	1.36	19.2
74338-24-2	55-TeCB	U	1.54	pg/L	1.54	19.2
41464-43-1	56-TeCB	J	13.4	pg/L	1.61	19.2
70424-67-8	57-TeCB	U	1.4	pg/L	1.40	19.2
41464-49-7	58-TeCB	U	1.54	pg/L	1.54	19.2
74472-33-6	59-TeCB	CJ	3.11	pg/L	1.23	57.6
33025-41-1	60-TeCB	J	7.18	pg/L	1.52	19.2
33284-53-6	61-TeCB	CJ	43.4	pg/L	1.46	76.8
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	1.32	pg/L	1.32	19.2
52663-58-8	64-TeCB	J	12.9	pg/L	1.23	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144001**	**Date Collected:**	**11/22/2016 14:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 12:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	18.3	pg/L	1.40	19.2
73575-53-8	67-TeCB	U	1.27	pg/L	1.27	19.2
73575-52-7	68-TeCB	U	1.36	pg/L	1.36	19.2
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.32	pg/L	1.32	19.2
74338-23-1	73-TeCB	U	1.23	pg/L	1.23	19.2
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	5.60	pg/L	1.65	19.2
70362-49-1	78-TeCB	U	1.44	pg/L	1.44	19.2
41464-48-6	79-TeCB	U	1.29	pg/L	1.29	19.2
33284-52-5	80-TeCB	U	1.29	pg/L	1.29	19.2
70362-50-4	81-TeCB	U	1.52	pg/L	1.52	19.2
52663-62-4	82-PeCB	J	5.76	pg/L	1.67	19.2
60145-20-2	83-PeCB	J	2.57	pg/L	1.80	19.2
52663-60-2	84-PeCB	J	11.9	pg/L	1.67	19.2
65510-45-4	85-PeCB	CJ	7.39	pg/L	1.30	57.6
55312-69-1	86-PeCB	CJ	33.6	pg/L	1.36	115
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CJ	5.43	pg/L	1.55	38.4
73575-57-2	89-PeCB	U	1.59	pg/L	1.59	19.2
68194-07-0	90-PeCB	CJ	36.4	pg/L	1.34	57.6
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	6.81	pg/L	1.50	19.2
73575-56-1	93-PeCB	CU	1.63	pg/L	1.63	38.4
73575-55-0	94-PeCB	U	1.67	pg/L	1.67	19.2
38379-99-6	95-PeCB		29.4	pg/L	1.46	19.2
73575-54-9	96-PeCB	U	.883	pg/L	0.883	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144001**	**Date Collected:**	**11/22/2016 14:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 12:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	1.52	pg/L	1.52	38.4
38380-01-7	99-PeCB	J	16.5	pg/L	1.63	19.2
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	1.36	pg/L	1.36	19.2
56558-16-8	104-PeCB	U	.998	pg/L	0.998	19.2
32598-14-4	105-PeCB		21.8	pg/L	1.65	19.2
70424-69-0	106-PeCB	U	1.32	pg/L	1.32	19.2
70424-68-9	107-PeCB	J	2.36	pg/L	1.27	19.2
70362-41-3	108-PeCB	CJ	2.28	pg/L	1.40	38.4
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	58.0	pg/L	1.21	38.4
39635-32-0	111-PeCB	U	1.21	pg/L	1.21	19.2
74472-36-9	112-PeCB	U	1.04	pg/L	1.04	19.2
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	1.57	pg/L	1.57	19.2
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		39.2	pg/L	1.50	19.2
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	1.07	pg/L	1.07	19.2
56558-18-0	121-PeCB	U	1.21	pg/L	1.21	19.2
76842-07-4	122-PeCB	U	1.46	pg/L	1.46	19.2
65510-44-3	123-PeCB	U	1.52	pg/L	1.52	19.2
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	1.92	pg/L	1.92	19.2
39635-33-1	127-PeCB	U	1.36	pg/L	1.36	19.2
38380-07-3	128-HxCB	CJ	9.36	pg/L	1.78	38.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144001**	**Date Collected:**	**11/22/2016 14:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 12:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	55.7	pg/L	1.96	57.6
52663-66-8	130-HxCB	J	3.80	pg/L	2.23	19.2
61798-70-7	131-HxCB	U	2.42	pg/L	2.42	19.2
38380-05-1	132-HxCB		20.7	pg/L	2.30	19.2
35694-04-3	133-HxCB	U	2.05	pg/L	2.05	19.2
52704-70-8	134-HxCB	J	3.90	pg/L	2.76	19.2
52744-13-5	135-HxCB	CJ	12.4	pg/L	1.02	38.4
38411-22-2	136-HxCB	J	5.58	pg/L	0.748	19.2
35694-06-5	137-HxCB	J	3.30	pg/L	2.34	19.2
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	1.98	pg/L	1.98	38.4
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	7.83	pg/L	1.96	19.2
41411-61-4	142-HxCB	U	2.15	pg/L	2.15	19.2
68194-15-0	143-HxCB	U	1.86	pg/L	1.86	19.2
68194-14-9	144-HxCB	J	2.01	pg/L	0.960	19.2
74472-40-5	145-HxCB	U	.825	pg/L	0.825	19.2
51908-16-8	146-HxCB	J	4.66	pg/L	1.65	19.2
68194-13-8	147-HxCB	CJ	32.5	pg/L	1.98	38.4
74472-41-6	148-HxCB	U	.94	pg/L	0.940	19.2
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.787	pg/L	0.787	19.2
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.729	pg/L	0.729	19.2
35065-27-1	153-HxCB	CJ	31.7	pg/L	1.65	38.4
60145-22-4	154-HxCB	U	.864	pg/L	0.864	19.2
33979-03-2	155-HxCB	U	.71	pg/L	0.710	19.2
38380-08-4	156-HxCB	CJ	8.02	pg/L	1.17	38.4
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	5.95	pg/L	1.46	19.2
39635-35-3	159-HxCB	U	.864	pg/L	0.864	19.2
41411-62-5	160-HxCB	U	1.77	pg/L	1.77	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144001**	**Date Collected:**	**11/22/2016 14:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 12:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.44	pg/L	1.44	19.2
39635-34-2	162-HxCB	U	.921	pg/L	0.921	19.2
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	3.49	pg/L	1.46	19.2
74472-46-1	165-HxCB	U	1.78	pg/L	1.78	19.2
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	2.71	pg/L	0.902	19.2
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.11	pg/L	1.11	19.2
35065-30-6	170-HpCB	J	9.21	pg/L	1.11	19.2
52663-71-5	171-HpCB	CJ	3.09	pg/L	1.07	38.4
52663-74-8	172-HpCB	J	2.13	pg/L	1.09	19.2
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	7.96	pg/L	0.998	19.2
40186-70-7	175-HpCB	U	.902	pg/L	0.902	19.2
52663-65-7	176-HpCB	J	1.25	pg/L	0.691	19.2
52663-70-4	177-HpCB	J	5.22	pg/L	1.06	19.2
52663-67-9	178-HpCB	J	1.77	pg/L	0.940	19.2
52663-64-6	179-HpCB	J	2.71	pg/L	0.691	19.2
35065-29-3	180-HpCB	CJ	17.6	pg/L	0.921	38.4
74472-47-2	181-HpCB	U	1.07	pg/L	1.07	19.2
60145-23-5	182-HpCB	U	.902	pg/L	0.902	19.2
52663-69-1	183-HpCB	CJ	5.20	pg/L	0.998	38.4
74472-48-3	184-HpCB	U	.691	pg/L	0.691	19.2
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.768	pg/L	0.768	19.2
52663-68-0	187-HpCB	J	9.48	pg/L	0.921	19.2
74487-85-7	188-HpCB	U	.71	pg/L	0.710	19.2
39635-31-9	189-HpCB	U	.979	pg/L	0.979	19.2
41411-64-7	190-HpCB	J	1.78	pg/L	0.844	19.2
74472-50-7	191-HpCB	U	.806	pg/L	0.806	19.2
74472-51-8	192-HpCB	U	.921	pg/L	0.921	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144001**	**Date Collected:**	**11/22/2016 14:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 12:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	4.70	pg/L	0.998	19.2
52663-78-2	195-OcCB	J	1.82	pg/L	1.02	19.2
42740-50-1	196-OcCB	J	2.05	pg/L	0.883	19.2
33091-17-7	197-OcCB	CJ	0.902	pg/L	0.672	38.4
68194-17-2	198-OcCB	CJ	5.47	pg/L	0.921	38.4
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	J	0.921	pg/L	0.652	19.2
2136-99-4	202-OcCB	J	1.04	pg/L	0.672	19.2
52663-76-0	203-OcCB	J	3.72	pg/L	0.902	19.2
74472-52-9	204-OcCB	U	.652	pg/L	0.652	19.2
74472-53-0	205-OcCB	U	.864	pg/L	0.864	19.2
40186-72-9	206-NoCB	J	2.88	pg/L	0.960	19.2
52663-79-3	207-NoCB	U	.652	pg/L	0.652	19.2
52663-77-1	208-NoCB	J	1.04	pg/L	0.691	19.2
2051-24-3	209-DeCB	J	2.19	pg/L	0.844	19.2
27323-18-8	Total Mono PCBs	J	5.18	pg/L	6.39	19.2
25512-42-9	Total Di PCBs		22.6	pg/L	6.39	19.2
25323-68-6	Total Tri PCBs		164	pg/L	6.39	19.2
26914-33-0	Total Tetra PCBs		219	pg/L	6.39	19.2
25429-29-2	Total Penta PCBs		279	pg/L	6.39	19.2
26601-64-9	Total Hexa PCBs		214	pg/L	6.39	19.2
28655-71-2	Total Hepta PCBs		67.4	pg/L	6.39	19.2
55722-26-4	Total Octa PCBs		20.6	pg/L	6.39	19.2
53742-07-7	Total Nona PCBs	J	3.91	pg/L	6.39	19.2
2051-24-3	Total Deca PCB	J	2.19	pg/L	6.39	19.2
1336-36-3	Total PCB Congeners		999	pg/L	6.39	19.2

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		912	1920	pg/L	47.5	(15%-150%)
13C-3-MoCB		1040	1920	pg/L	54.2	(15%-150%)
13C-4-DiCB		971	1920	pg/L	50.6	(25%-150%)
13C-15-DiCB		2060	1920	pg/L	108	(25%-150%)
13C-19-TrCB		1410	1920	pg/L	73.3	(25%-150%)
13C-37-TrCB		1960	1920	pg/L	102	(25%-150%)
13C-54-TeCB		1100	1920	pg/L	57.4	(25%-150%)
13C-77-TeCB		2360	1920	pg/L	123	(25%-150%)
13C-81-TeCB		2400	1920	pg/L	125	(25%-150%)
13C-104-PeCB		1210	1920	pg/L	63.0	(25%-150%)
13C-105-PeCB		1960	1920	pg/L	102	(25%-150%)
13C-114-PeCB		1930	1920	pg/L	101	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144001**	**Date Collected:**	**11/22/2016 14:15**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 12:52**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1970	1920	pg/L	103	(25%-150%)
13C-123-PeCB		1990	1920	pg/L	104	(25%-150%)
13C-126-PeCB		2000	1920	pg/L	104	(25%-150%)
13C-155-HxCB		1270	1920	pg/L	66.0	(25%-150%)
13C-156-HxCB	C	3440	3840	pg/L	89.5	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1790	1920	pg/L	93.4	(25%-150%)
13C-169-HxCB		1740	1920	pg/L	90.8	(25%-150%)
13C-188-HpCB		1620	1920	pg/L	84.5	(25%-150%)
13C-189-HpCB		1880	1920	pg/L	98.2	(25%-150%)
13C-202-OcCB		1770	1920	pg/L	92.1	(25%-150%)
13C-205-OcCB		1900	1920	pg/L	99.1	(25%-150%)
13C-206-NoCB		1770	1920	pg/L	92.4	(25%-150%)
13C-208-NoCB		1770	1920	pg/L	92.1	(25%-150%)
13C-209-DeCB		1770	1920	pg/L	92.0	(25%-150%)
13C-28-TrCB		1440	1920	pg/L	74.8	(30%-135%)
13C-111-PeCB		1850	1920	pg/L	96.5	(30%-135%)
13C-178-HpCB		1830	1920	pg/L	95.2	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144002**	**Date Collected:**	**11/22/2016 14:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 13:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1038 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	18.4	pg/L	3.37	19.3
2051-61-8	2-MoCB	J	17.1	pg/L	2.97	19.3
2051-62-9	3-MoCB		27.6	pg/L	2.89	19.3
13029-08-8	4-DiCB		181	pg/L	13.9	19.3
16605-91-7	5-DiCB	U	9.17	pg/L	9.17	19.3
25569-80-6	6-DiCB		56.8	pg/L	7.05	19.3
33284-50-3	7-DiCB	U	7.61	pg/L	7.61	19.3
34883-43-7	8-DiCB		248	pg/L	6.55	19.3
34883-39-1	9-DiCB	J	16.3	pg/L	7.96	19.3
33146-45-1	10-DiCB	U	6.4	pg/L	6.40	19.3
2050-67-1	11-DiCB		471	pg/L	7.75	96.3
2974-92-7	12-DiCB	C	52.7	pg/L	7.96	38.5
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	7.5	pg/L	7.50	19.3
2050-68-2	15-DiCB		205	pg/L	8.13	19.3
38444-78-9	16-TrCB		181	pg/L	2.06	19.3
37680-66-3	17-TrCB		161	pg/L	1.79	19.3
37680-65-2	18-TrCB	C	356	pg/L	1.43	38.5
38444-73-4	19-TrCB		54.7	pg/L	2.24	19.3
38444-84-7	20-TrCB	C	473	pg/L	1.27	38.5
55702-46-0	21-TrCB	C	257	pg/L	1.21	38.5
38444-85-8	22-TrCB		210	pg/L	1.33	19.3
55720-44-0	23-TrCB	U	1.29	pg/L	1.29	19.3
55702-45-9	24-TrCB	J	6.99	pg/L	1.29	19.3
55712-37-3	25-TrCB		29.3	pg/L	1.12	19.3
38444-81-4	26-TrCB	C	81.7	pg/L	1.23	38.5
38444-76-7	27-TrCB		26.5	pg/L	1.23	19.3
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		377	pg/L	1.14	19.3
38444-77-8	32-TrCB		88.9	pg/L	1.16	19.3

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144002**	**Date Collected:**	**11/22/2016 14:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 13:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1038 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.27	pg/L	1.27	19.3
37680-69-6	35-TrCB		29.6	pg/L	2.18	19.3
38444-87-0	36-TrCB	U	1.97	pg/L	1.97	19.3
38444-90-5	37-TrCB		212	pg/L	2.37	19.3
53555-66-1	38-TrCB	U	2.14	pg/L	2.14	19.3
38444-88-1	39-TrCB	U	2.12	pg/L	2.12	19.3
38444-93-8	40-TeCB	C	283	pg/L	5.90	38.5
52663-59-9	41-TeCB		90.5	pg/L	9.21	19.3
36559-22-5	42-TeCB		152	pg/L	6.59	19.3
70362-46-8	43-TeCB		29.4	pg/L	7.82	19.3
41464-39-5	44-TeCB	C	1050	pg/L	6.22	57.8
70362-45-7	45-TeCB	C	73.4	pg/L	1.89	38.5
41464-47-5	46-TeCB		29.7	pg/L	2.02	19.3
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB		115	pg/L	7.01	19.3
41464-40-8	49-TeCB	C	489	pg/L	5.76	38.5
62796-65-0	50-TeCB	C	57.0	pg/L	1.81	38.5
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		2440	pg/L	6.76	19.3
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	1.56	pg/L	1.56	19.3
74338-24-2	55-TeCB		24.8	pg/L	2.79	19.3
41464-43-1	56-TeCB		333	pg/L	2.95	19.3
70424-67-8	57-TeCB	U	2.54	pg/L	2.54	19.3
41464-49-7	58-TeCB	J	3.93	pg/L	2.79	19.3
74472-33-6	59-TeCB	CJ	46.0	pg/L	5.09	57.8
33025-41-1	60-TeCB		143	pg/L	2.76	19.3
33284-53-6	61-TeCB	C	2180	pg/L	2.66	77.1
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB		21.1	pg/L	2.43	19.3
52663-58-8	64-TeCB		362	pg/L	5.05	19.3

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144002**	**Date Collected:**	**11/22/2016 14:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 13:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1038 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		623	pg/L	2.54	19.3
73575-53-8	67-TeCB		20.6	pg/L	2.29	19.3
73575-52-7	68-TeCB	J	4.62	pg/L	2.49	19.3
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	J	4.89	pg/L	2.41	19.3
74338-23-1	73-TeCB		27.8	pg/L	5.11	19.3
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB		132	pg/L	3.06	19.3
70362-49-1	78-TeCB	U	2.62	pg/L	2.62	19.3
41464-48-6	79-TeCB		35.5	pg/L	2.35	19.3
33284-52-5	80-TeCB	U	2.33	pg/L	2.33	19.3
70362-50-4	81-TeCB	J	5.86	pg/L	2.93	19.3
52663-62-4	82-PeCB		489	pg/L	4.74	19.3
60145-20-2	83-PeCB		200	pg/L	5.09	19.3
52663-60-2	84-PeCB		1230	pg/L	4.74	19.3
65510-45-4	85-PeCB	C	640	pg/L	3.68	57.8
55312-69-1	86-PeCB	C	3560	pg/L	3.83	116
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	C	507	pg/L	4.41	38.5
73575-57-2	89-PeCB		32.5	pg/L	4.49	19.3
68194-07-0	90-PeCB	C	4600	pg/L	3.80	57.8
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB		800	pg/L	4.26	19.3
73575-56-1	93-PeCB	CJ	14.2	pg/L	4.62	38.5
73575-55-0	94-PeCB	J	14.2	pg/L	4.72	19.3
38379-99-6	95-PeCB		3240	pg/L	4.12	19.3
73575-54-9	96-PeCB	J	17.6	pg/L	1.31	19.3

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144002**	**Date Collected:**	**11/22/2016 14:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 13:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1038 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	C	86.7	pg/L	4.28	38.5
38380-01-7	99-PeCB		2110	pg/L	4.62	19.3
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	J	14.1	pg/L	3.85	19.3
56558-16-8	104-PeCB	U	1.35	pg/L	1.35	19.3
32598-14-4	105-PeCB		2140	pg/L	5.65	19.3
70424-69-0	106-PeCB	U	4.55	pg/L	4.55	19.3
70424-68-9	107-PeCB		314	pg/L	4.39	19.3
70362-41-3	108-PeCB	C	205	pg/L	4.82	38.5
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	6070	pg/L	3.43	38.5
39635-32-0	111-PeCB	U	3.41	pg/L	3.41	19.3
74472-36-9	112-PeCB	U	2.93	pg/L	2.93	19.3
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB		95.4	pg/L	5.53	19.3
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		4790	pg/L	5.22	19.3
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	J	4.05	pg/L	3.03	19.3
56558-18-0	121-PeCB	U	3.41	pg/L	3.41	19.3
76842-07-4	122-PeCB		40.9	pg/L	5.07	19.3
65510-44-3	123-PeCB		73.0	pg/L	5.38	19.3
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB		26.8	pg/L	6.45	19.3
39635-33-1	127-PeCB	J	7.76	pg/L	4.68	19.3
38380-07-3	128-HxCB	C	1120	pg/L	3.41	38.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144002**	**Date Collected:**	**11/22/2016 14:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 13:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1038 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	6580	pg/L	3.74	57.8
52663-66-8	130-HxCB		396	pg/L	4.24	19.3
61798-70-7	131-HxCB		100	pg/L	4.62	19.3
38380-05-1	132-HxCB		2180	pg/L	4.41	19.3
35694-04-3	133-HxCB		60.3	pg/L	3.93	19.3
52704-70-8	134-HxCB		355	pg/L	5.28	19.3
52744-13-5	135-HxCB	C	1220	pg/L	1.46	38.5
38411-22-2	136-HxCB		525	pg/L	1.08	19.3
35694-06-5	137-HxCB		359	pg/L	4.47	19.3
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	C	106	pg/L	3.78	38.5
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		966	pg/L	3.74	19.3
41411-61-4	142-HxCB	U	4.1	pg/L	4.10	19.3
68194-15-0	143-HxCB	J	13.3	pg/L	3.56	19.3
68194-14-9	144-HxCB		190	pg/L	1.39	19.3
74472-40-5	145-HxCB	J	1.54	pg/L	1.19	19.3
51908-16-8	146-HxCB		575	pg/L	3.14	19.3
68194-13-8	147-HxCB	C	3540	pg/L	3.78	38.5
74472-41-6	148-HxCB	J	3.03	pg/L	1.37	19.3
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	J	4.45	pg/L	1.12	19.3
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	J	4.41	pg/L	1.04	19.3
35065-27-1	153-HxCB	C	3910	pg/L	3.16	38.5
60145-22-4	154-HxCB		32.2	pg/L	1.23	19.3
33979-03-2	155-HxCB	U	.983	pg/L	0.983	19.3
38380-08-4	156-HxCB	C	1010	pg/L	3.99	38.5
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB		665	pg/L	2.77	19.3
39635-35-3	159-HxCB	U	2.91	pg/L	2.91	19.3
41411-62-5	160-HxCB	U	3.35	pg/L	3.35	19.3

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144002**	**Date Collected:**	**11/22/2016 14:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 13:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1038 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	2.76	pg/L	2.76	19.3
39635-34-2	162-HxCB	J	13.8	pg/L	3.10	19.3
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB		393	pg/L	2.79	19.3
74472-46-1	165-HxCB	U	3.39	pg/L	3.39	19.3
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB		292	pg/L	3.26	19.3
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	3.76	pg/L	3.76	19.3
35065-30-6	170-HpCB		946	pg/L	2.45	19.3
52663-71-5	171-HpCB	C	270	pg/L	2.35	38.5
52663-74-8	172-HpCB		151	pg/L	2.41	19.3
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		783	pg/L	2.20	19.3
40186-70-7	175-HpCB		34.7	pg/L	1.60	19.3
52663-65-7	176-HpCB		82.6	pg/L	1.23	19.3
52663-70-4	177-HpCB		452	pg/L	2.33	19.3
52663-67-9	178-HpCB		129	pg/L	1.68	19.3
52663-64-6	179-HpCB		239	pg/L	1.23	19.3
35065-29-3	180-HpCB	C	1870	pg/L	2.02	38.5
74472-47-2	181-HpCB	J	14.9	pg/L	2.37	19.3
60145-23-5	182-HpCB	J	6.03	pg/L	1.60	19.3
52663-69-1	183-HpCB	C	542	pg/L	2.22	38.5
74472-48-3	184-HpCB	J	1.43	pg/L	1.21	19.3
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	1.37	pg/L	1.37	19.3
52663-68-0	187-HpCB		868	pg/L	1.62	19.3
74487-85-7	188-HpCB	J	2.64	pg/L	1.25	19.3
39635-31-9	189-HpCB		44.3	pg/L	2.74	19.3
41411-64-7	190-HpCB		177	pg/L	1.85	19.3
74472-50-7	191-HpCB		34.9	pg/L	1.79	19.3
74472-51-8	192-HpCB	U	2.04	pg/L	2.04	19.3

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144002**	**Date Collected:**	**11/22/2016 14:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 13:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1038 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		334	pg/L	1.98	19.3
52663-78-2	195-OcCB		122	pg/L	2.02	19.3
42740-50-1	196-OcCB		170	pg/L	1.39	19.3
33091-17-7	197-OcCB	C	54.4	pg/L	1.04	38.5
68194-17-2	198-OcCB	C	414	pg/L	1.45	38.5
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB		43.3	pg/L	1.00	19.3
2136-99-4	202-OcCB		69.7	pg/L	1.06	19.3
52663-76-0	203-OcCB		260	pg/L	1.39	19.3
74472-52-9	204-OcCB	U	1.02	pg/L	1.02	19.3
74472-53-0	205-OcCB	J	16.1	pg/L	1.73	19.3
40186-72-9	206-NoCB		200	pg/L	2.35	19.3
52663-79-3	207-NoCB		24.9	pg/L	1.60	19.3
52663-77-1	208-NoCB		52.6	pg/L	1.68	19.3
2051-24-3	209-DeCB		55.6	pg/L	1.54	19.3
27323-18-8	Total Mono PCBs		63.2	pg/L	6.42	19.3
25512-42-9	Total Di PCBs		1230	pg/L	6.42	19.3
25323-68-6	Total Tri PCBs		2540	pg/L	6.42	19.3
26914-33-0	Total Tetra PCBs		8780	pg/L	6.42	19.3
25429-29-2	Total Penta PCBs		31300	pg/L	6.42	19.3
26601-64-9	Total Hexa PCBs		24600	pg/L	6.42	19.3
28655-71-2	Total Hepta PCBs		6650	pg/L	6.42	19.3
55722-26-4	Total Octa PCBs		1480	pg/L	6.42	19.3
53742-07-7	Total Nona PCBs		277	pg/L	6.42	19.3
2051-24-3	Total Deca PCB		55.6	pg/L	6.42	19.3
1336-36-3	Total PCB Congeners		77000	pg/L	6.42	19.3

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1060	1930	pg/L	54.9	(15%-150%)
13C-3-MoCB		1220	1930	pg/L	63.4	(15%-150%)
13C-4-DiCB		1140	1930	pg/L	59.1	(25%-150%)
13C-15-DiCB		2170	1930	pg/L	112	(25%-150%)
13C-19-TrCB		1560	1930	pg/L	81.2	(25%-150%)
13C-37-TrCB		2010	1930	pg/L	105	(25%-150%)
13C-54-TeCB		1240	1930	pg/L	64.4	(25%-150%)
13C-77-TeCB		2320	1930	pg/L	120	(25%-150%)
13C-81-TeCB		2320	1930	pg/L	120	(25%-150%)
13C-104-PeCB		1310	1930	pg/L	68.2	(25%-150%)
13C-105-PeCB		1920	1930	pg/L	99.7	(25%-150%)
13C-114-PeCB		1890	1930	pg/L	98.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144002**	**Date Collected:**	**11/22/2016 14:25**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-D-CB3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 13:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1038 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1960	1930	pg/L	102	(25%-150%)
13C-123-PeCB		1960	1930	pg/L	102	(25%-150%)
13C-126-PeCB		1990	1930	pg/L	103	(25%-150%)
13C-155-HxCB		1380	1930	pg/L	71.5	(25%-150%)
13C-156-HxCB	C	3500	3850	pg/L	90.9	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1840	1930	pg/L	95.6	(25%-150%)
13C-169-HxCB		1760	1930	pg/L	91.2	(25%-150%)
13C-188-HpCB		1730	1930	pg/L	89.6	(25%-150%)
13C-189-HpCB		1970	1930	pg/L	102	(25%-150%)
13C-202-OcCB		1770	1930	pg/L	91.8	(25%-150%)
13C-205-OcCB		1910	1930	pg/L	99.0	(25%-150%)
13C-206-NoCB		1650	1930	pg/L	85.7	(25%-150%)
13C-208-NoCB		1680	1930	pg/L	87.3	(25%-150%)
13C-209-DeCB		1650	1930	pg/L	85.5	(25%-150%)
13C-28-TrCB		1570	1930	pg/L	81.7	(30%-135%)
13C-111-PeCB		1830	1930	pg/L	94.8	(30%-135%)
13C-178-HpCB		1730	1930	pg/L	89.9	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144003**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/17/2016 14:28**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**989.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	11.0	pg/L	2.53	20.2
2051-61-8	2-MoCB	J	4.02	pg/L	2.24	20.2
2051-62-9	3-MoCB	J	7.64	pg/L	2.12	20.2
13029-08-8	4-DiCB		69.7	pg/L	7.20	20.2
16605-91-7	5-DiCB	U	4.43	pg/L	4.43	20.2
25569-80-6	6-DiCB		27.5	pg/L	3.50	20.2
33284-50-3	7-DiCB	U	3.78	pg/L	3.78	20.2
34883-43-7	8-DiCB		127	pg/L	3.19	20.2
34883-39-1	9-DiCB	J	10.1	pg/L	3.88	20.2
33146-45-1	10-DiCB	U	3.26	pg/L	3.26	20.2
2050-67-1	11-DiCB		218	pg/L	3.94	101
2974-92-7	12-DiCB	CJ	22.3	pg/L	4.08	40.4
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	3.72	pg/L	3.72	20.2
2050-68-2	15-DiCB		117	pg/L	3.92	20.2
38444-78-9	16-TrCB		82.2	pg/L	1.86	20.2
37680-66-3	17-TrCB		74.4	pg/L	1.80	20.2
37680-65-2	18-TrCB	C	159	pg/L	1.44	40.4
38444-73-4	19-TrCB		22.9	pg/L	2.22	20.2
38444-84-7	20-TrCB	C	296	pg/L	1.27	40.4
55702-46-0	21-TrCB	C	174	pg/L	1.23	40.4
38444-85-8	22-TrCB		138	pg/L	1.37	20.2
55720-44-0	23-TrCB	U	1.27	pg/L	1.27	20.2
55702-45-9	24-TrCB	U	1.35	pg/L	1.35	20.2
55712-37-3	25-TrCB	J	18.7	pg/L	1.15	20.2
38444-81-4	26-TrCB	C	43.8	pg/L	1.21	40.4
38444-76-7	27-TrCB	J	14.1	pg/L	1.27	20.2
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		224	pg/L	1.15	20.2
38444-77-8	32-TrCB		46.7	pg/L	1.13	20.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144003**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/17/2016 14:28**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**989.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.27	pg/L	1.27	20.2
37680-69-6	35-TrCB	J	13.1	pg/L	2.20	20.2
38444-87-0	36-TrCB	U	1.9	pg/L	1.90	20.2
38444-90-5	37-TrCB		165	pg/L	2.24	20.2
53555-66-1	38-TrCB	U	2.06	pg/L	2.06	20.2
38444-88-1	39-TrCB	U	2.06	pg/L	2.06	20.2
38444-93-8	40-TeCB	C	166	pg/L	1.40	40.4
52663-59-9	41-TeCB		42.0	pg/L	2.06	20.2
36559-22-5	42-TeCB		85.9	pg/L	1.66	20.2
70362-46-8	43-TeCB	J	15.0	pg/L	2.00	20.2
41464-39-5	44-TeCB	C	322	pg/L	1.50	60.7
70362-45-7	45-TeCB	C	42.2	pg/L	1.29	40.4
41464-47-5	46-TeCB	J	17.9	pg/L	1.46	20.2
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB		61.9	pg/L	1.68	20.2
41464-40-8	49-TeCB	C	153	pg/L	1.37	40.4
62796-65-0	50-TeCB	CJ	25.5	pg/L	1.25	40.4
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		340	pg/L	1.56	20.2
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	1.05	pg/L	1.05	20.2
74338-24-2	55-TeCB	J	6.19	pg/L	2.16	20.2
41464-43-1	56-TeCB		175	pg/L	2.30	20.2
70424-67-8	57-TeCB	U	1.96	pg/L	1.96	20.2
41464-49-7	58-TeCB	U	2.2	pg/L	2.20	20.2
74472-33-6	59-TeCB	CJ	26.2	pg/L	1.19	60.7
33025-41-1	60-TeCB		90.9	pg/L	2.22	20.2
33284-53-6	61-TeCB	C	573	pg/L	2.06	80.9
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	J	10.3	pg/L	1.88	20.2
52663-58-8	64-TeCB		161	pg/L	1.21	20.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144003**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/17/2016 14:28**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**989.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		283	pg/L	2.04	20.2
73575-53-8	67-TeCB	J	10.5	pg/L	1.78	20.2
73575-52-7	68-TeCB	U	1.92	pg/L	1.92	20.2
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.88	pg/L	1.88	20.2
74338-23-1	73-TeCB	J	5.96	pg/L	1.19	20.2
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB		75.7	pg/L	2.41	20.2
70362-49-1	78-TeCB	U	2.08	pg/L	2.08	20.2
41464-48-6	79-TeCB	J	8.35	pg/L	1.84	20.2
33284-52-5	80-TeCB	U	1.86	pg/L	1.86	20.2
70362-50-4	81-TeCB	J	3.46	pg/L	2.26	20.2
52663-62-4	82-PeCB		106	pg/L	2.81	20.2
60145-20-2	83-PeCB		31.8	pg/L	3.09	20.2
52663-60-2	84-PeCB		161	pg/L	2.75	20.2
65510-45-4	85-PeCB	C	120	pg/L	2.14	60.7
55312-69-1	86-PeCB	C	537	pg/L	2.24	121
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	C	72.8	pg/L	2.59	40.4
73575-57-2	89-PeCB	J	7.12	pg/L	2.61	20.2
68194-07-0	90-PeCB	C	632	pg/L	2.22	60.7
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB		103	pg/L	2.53	20.2
73575-56-1	93-PeCB	CU	2.61	pg/L	2.61	40.4
73575-55-0	94-PeCB	U	2.79	pg/L	2.79	20.2
38379-99-6	95-PeCB		392	pg/L	2.39	20.2
73575-54-9	96-PeCB	J	3.54	pg/L	0.728	20.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144003**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/17/2016 14:28**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**989.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CJ	12.4	pg/L	2.57	40.4
38380-01-7	99-PeCB		288	pg/L	2.49	20.2
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	J	2.37	pg/L	2.26	20.2
56558-16-8	104-PeCB	U	.748	pg/L	0.748	20.2
32598-14-4	105-PeCB		438	pg/L	3.98	20.2
70424-69-0	106-PeCB	U	3.03	pg/L	3.03	20.2
70424-68-9	107-PeCB		62.8	pg/L	3.23	20.2
70362-41-3	108-PeCB	CJ	36.5	pg/L	3.38	40.4
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	1120	pg/L	2.02	40.4
39635-32-0	111-PeCB	U	2	pg/L	2.00	20.2
74472-36-9	112-PeCB	U	1.76	pg/L	1.76	20.2
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	J	18.2	pg/L	3.76	20.2
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		873	pg/L	3.52	20.2
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	J	2.02	pg/L	1.82	20.2
56558-18-0	121-PeCB	U	2	pg/L	2.00	20.2
76842-07-4	122-PeCB	J	10.1	pg/L	3.56	20.2
65510-44-3	123-PeCB	J	10.4	pg/L	3.70	20.2
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	J	9.16	pg/L	4.73	20.2
39635-33-1	127-PeCB	U	3.34	pg/L	3.34	20.2
38380-07-3	128-HxCB	C	236	pg/L	2.69	40.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144003**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/17/2016 14:28**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**989.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	1590	pg/L	2.99	60.7
52663-66-8	130-HxCB		82.1	pg/L	3.34	20.2
61798-70-7	131-HxCB	J	16.0	pg/L	3.54	20.2
38380-05-1	132-HxCB		443	pg/L	3.46	20.2
35694-04-3	133-HxCB	J	13.9	pg/L	3.11	20.2
52704-70-8	134-HxCB		59.9	pg/L	3.92	20.2
52744-13-5	135-HxCB	C	275	pg/L	1.21	40.4
38411-22-2	136-HxCB		86.0	pg/L	0.869	20.2
35694-06-5	137-HxCB		60.6	pg/L	3.44	20.2
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CJ	18.2	pg/L	2.93	40.4
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		228	pg/L	2.85	20.2
41411-61-4	142-HxCB	U	3.23	pg/L	3.23	20.2
68194-15-0	143-HxCB	J	3.21	pg/L	2.89	20.2
68194-14-9	144-HxCB		42.3	pg/L	1.13	20.2
74472-40-5	145-HxCB	U	.97	pg/L	0.970	20.2
51908-16-8	146-HxCB		143	pg/L	2.51	20.2
68194-13-8	147-HxCB	C	794	pg/L	2.91	40.4
74472-41-6	148-HxCB	U	1.11	pg/L	1.11	20.2
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	J	1.31	pg/L	0.930	20.2
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.829	pg/L	0.829	20.2
35065-27-1	153-HxCB	C	978	pg/L	2.47	40.4
60145-22-4	154-HxCB	J	8.61	pg/L	1.03	20.2
33979-03-2	155-HxCB	U	.789	pg/L	0.789	20.2
38380-08-4	156-HxCB	C	201	pg/L	2.43	40.4
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB		145	pg/L	2.16	20.2
39635-35-3	159-HxCB	U	1.76	pg/L	1.76	20.2
41411-62-5	160-HxCB	U	2.49	pg/L	2.49	20.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144003**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/17/2016 14:28**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**989.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	2.08	pg/L	2.08	20.2
39635-34-2	162-HxCB	J	5.46	pg/L	1.86	20.2
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB		101	pg/L	2.24	20.2
74472-46-1	165-HxCB	U	2.73	pg/L	2.73	20.2
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB		68.7	pg/L	1.88	20.2
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	2.41	pg/L	2.41	20.2
35065-30-6	170-HpCB		373	pg/L	2.77	20.2
52663-71-5	171-HpCB	C	103	pg/L	2.67	40.4
52663-74-8	172-HpCB		68.6	pg/L	2.73	20.2
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		356	pg/L	2.49	20.2
40186-70-7	175-HpCB	J	15.2	pg/L	1.52	20.2
52663-65-7	176-HpCB		32.1	pg/L	1.15	20.2
52663-70-4	177-HpCB		192	pg/L	2.59	20.2
52663-67-9	178-HpCB		61.9	pg/L	1.58	20.2
52663-64-6	179-HpCB		105	pg/L	1.17	20.2
35065-29-3	180-HpCB	C	894	pg/L	2.28	40.4
74472-47-2	181-HpCB	J	3.30	pg/L	2.67	20.2
60145-23-5	182-HpCB	J	4.59	pg/L	1.52	20.2
52663-69-1	183-HpCB	C	238	pg/L	2.47	40.4
74472-48-3	184-HpCB	U	1.15	pg/L	1.15	20.2
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	1.27	pg/L	1.27	20.2
52663-68-0	187-HpCB		419	pg/L	1.58	20.2
74487-85-7	188-HpCB	J	1.86	pg/L	1.19	20.2
39635-31-9	189-HpCB	J	18.3	pg/L	2.35	20.2
41411-64-7	190-HpCB		74.7	pg/L	2.12	20.2
74472-50-7	191-HpCB	J	14.0	pg/L	2.02	20.2
74472-51-8	192-HpCB	U	2.33	pg/L	2.33	20.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144003**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/17/2016 14:28**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**989.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		206	pg/L	1.88	20.2
52663-78-2	195-OcCB		69.2	pg/L	1.94	20.2
42740-50-1	196-OcCB		102	pg/L	1.13	20.2
33091-17-7	197-OcCB	CJ	32.3	pg/L	0.849	40.4
68194-17-2	198-OcCB	C	244	pg/L	1.19	40.4
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB		25.5	pg/L	0.809	20.2
2136-99-4	202-OcCB		40.2	pg/L	0.849	20.2
52663-76-0	203-OcCB		153	pg/L	1.13	20.2
74472-52-9	204-OcCB	U	.829	pg/L	0.829	20.2
74472-53-0	205-OcCB	J	9.79	pg/L	1.64	20.2
40186-72-9	206-NoCB		114	pg/L	1.56	20.2
52663-79-3	207-NoCB	J	16.5	pg/L	1.05	20.2
52663-77-1	208-NoCB		29.8	pg/L	1.09	20.2
2051-24-3	209-DeCB		30.6	pg/L	1.42	20.2
27323-18-8	Total Mono PCBs		22.7	pg/L	6.73	20.2
25512-42-9	Total Di PCBs		592	pg/L	6.73	20.2
25323-68-6	Total Tri PCBs		1470	pg/L	6.73	20.2
26914-33-0	Total Tetra PCBs		2700	pg/L	6.73	20.2
25429-29-2	Total Penta PCBs		5050	pg/L	6.73	20.2
26601-64-9	Total Hexa PCBs		5610	pg/L	6.73	20.2
28655-71-2	Total Hepta PCBs		2970	pg/L	6.73	20.2
55722-26-4	Total Octa PCBs		882	pg/L	6.73	20.2
53742-07-7	Total Nona PCBs		161	pg/L	6.73	20.2
2051-24-3	Total Deca PCB		30.6	pg/L	6.73	20.2
1336-36-3	Total PCB Congeners		19500	pg/L	6.73	20.2

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1040	2020	pg/L	51.7	(15%-150%)
13C-3-MoCB		1210	2020	pg/L	59.9	(15%-150%)
13C-4-DiCB		1170	2020	pg/L	57.7	(25%-150%)
13C-15-DiCB		1940	2020	pg/L	96.1	(25%-150%)
13C-19-TrCB		1470	2020	pg/L	72.9	(25%-150%)
13C-37-TrCB		1730	2020	pg/L	85.7	(25%-150%)
13C-54-TeCB		1310	2020	pg/L	65.0	(25%-150%)
13C-77-TeCB		2130	2020	pg/L	105	(25%-150%)
13C-81-TeCB		2170	2020	pg/L	107	(25%-150%)
13C-104-PeCB		1460	2020	pg/L	72.3	(25%-150%)
13C-105-PeCB		1840	2020	pg/L	90.9	(25%-150%)
13C-114-PeCB		1840	2020	pg/L	90.8	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144003**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/17/2016 14:28**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c16dec16a_3-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**989.2 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1870	2020	pg/L	92.5	(25%-150%)
13C-123-PeCB		1890	2020	pg/L	93.6	(25%-150%)
13C-126-PeCB		1840	2020	pg/L	90.8	(25%-150%)
13C-155-HxCB		1540	2020	pg/L	76.2	(25%-150%)
13C-156-HxCB	C	3310	4040	pg/L	81.9	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1750	2020	pg/L	86.4	(25%-150%)
13C-169-HxCB		1620	2020	pg/L	80.1	(25%-150%)
13C-188-HpCB		1950	2020	pg/L	96.2	(25%-150%)
13C-189-HpCB		1850	2020	pg/L	91.5	(25%-150%)
13C-202-OcCB		2040	2020	pg/L	101	(25%-150%)
13C-205-OcCB		1920	2020	pg/L	95.0	(25%-150%)
13C-206-NoCB		1870	2020	pg/L	92.3	(25%-150%)
13C-208-NoCB		1920	2020	pg/L	94.8	(25%-150%)
13C-209-DeCB		2030	2020	pg/L	100	(25%-150%)
13C-28-TrCB		1570	2020	pg/L	77.5	(30%-135%)
13C-111-PeCB		1880	2020	pg/L	92.9	(30%-135%)
13C-178-HpCB		1890	2020	pg/L	93.6	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144004**	**Date Collected:**	**11/22/2016 16:00**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 09:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1040 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	5.92	pg/L	5.92	19.2
2051-61-8	2-MoCB	U	3.31	pg/L	3.31	19.2
2051-62-9	3-MoCB	U	6.12	pg/L	6.12	19.2
13029-08-8	4-DiCB		20.3	pg/L	9.94	19.2
16605-91-7	5-DiCB	U	9.27	pg/L	9.27	19.2
25569-80-6	6-DiCB	U	6.96	pg/L	6.96	19.2
33284-50-3	7-DiCB	U	7.54	pg/L	7.54	19.2
34883-43-7	8-DiCB		39.4	pg/L	6.17	19.2
34883-39-1	9-DiCB	U	7.67	pg/L	7.67	19.2
33146-45-1	10-DiCB	U	4	pg/L	4.00	19.2
2050-67-1	11-DiCB		103	pg/L	7.58	96.2
2974-92-7	12-DiCB	CU	7.77	pg/L	7.77	38.5
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	7.12	pg/L	7.12	19.2
2050-68-2	15-DiCB		38.2	pg/L	7.04	19.2
38444-78-9	16-TrCB		26.3	pg/L	1.83	19.2
37680-66-3	17-TrCB		21.0	pg/L	1.67	19.2
37680-65-2	18-TrCB	C	45.8	pg/L	1.35	38.5
38444-73-4	19-TrCB	J	9.15	pg/L	2.29	19.2
38444-84-7	20-TrCB	C	71.5	pg/L	1.17	38.5
55702-46-0	21-TrCB	C	38.7	pg/L	1.10	38.5
38444-85-8	22-TrCB		32.7	pg/L	1.19	19.2
55720-44-0	23-TrCB	U	1.17	pg/L	1.17	19.2
55702-45-9	24-TrCB	U	1.25	pg/L	1.25	19.2
55712-37-3	25-TrCB	J	4.90	pg/L	1.04	19.2
38444-81-4	26-TrCB	CJ	12.0	pg/L	1.12	38.5
38444-76-7	27-TrCB	J	4.77	pg/L	1.19	19.2
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		55.2	pg/L	1.04	19.2
38444-77-8	32-TrCB	J	12.8	pg/L	1.06	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144004**	**Date Collected:**	**11/22/2016 16:00**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 09:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1040 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.19	pg/L	1.19	19.2
37680-69-6	35-TrCB	J	4.58	pg/L	2.35	19.2
38444-87-0	36-TrCB	U	2.19	pg/L	2.19	19.2
38444-90-5	37-TrCB		44.4	pg/L	2.42	19.2
53555-66-1	38-TrCB	U	2.25	pg/L	2.25	19.2
38444-88-1	39-TrCB	U	2.29	pg/L	2.29	19.2
38444-93-8	40-TeCB	C	38.7	pg/L	1.29	38.5
52663-59-9	41-TeCB	J	11.9	pg/L	1.81	19.2
36559-22-5	42-TeCB		22.1	pg/L	1.50	19.2
70362-46-8	43-TeCB	J	4.02	pg/L	1.62	19.2
41464-39-5	44-TeCB	C	81.8	pg/L	1.35	57.7
70362-45-7	45-TeCB	CJ	13.0	pg/L	2.50	38.5
41464-47-5	46-TeCB	J	5.42	pg/L	2.69	19.2
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	17.9	pg/L	1.58	19.2
41464-40-8	49-TeCB	C	40.7	pg/L	1.27	38.5
62796-65-0	50-TeCB	CJ	7.94	pg/L	2.37	38.5
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		83.9	pg/L	1.42	19.2
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	2.17	pg/L	2.17	19.2
74338-24-2	55-TeCB	J	3.35	pg/L	2.02	19.2
41464-43-1	56-TeCB		38.1	pg/L	2.15	19.2
70424-67-8	57-TeCB	U	1.87	pg/L	1.87	19.2
41464-49-7	58-TeCB	U	2.12	pg/L	2.12	19.2
74472-33-6	59-TeCB	CJ	8.63	pg/L	1.10	57.7
33025-41-1	60-TeCB		21.5	pg/L	2.10	19.2
33284-53-6	61-TeCB	C	136	pg/L	1.96	76.9
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	J	3.46	pg/L	1.81	19.2
52663-58-8	64-TeCB		38.5	pg/L	1.12	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144004**	**Date Collected:**	**11/22/2016 16:00**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 09:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1040 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		62.2	pg/L	1.92	19.2
73575-53-8	67-TeCB	J	3.13	pg/L	1.67	19.2
73575-52-7	68-TeCB	U	1.83	pg/L	1.83	19.2
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.79	pg/L	1.79	19.2
74338-23-1	73-TeCB	J	1.71	pg/L	1.21	19.2
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	18.8	pg/L	2.23	19.2
70362-49-1	78-TeCB	U	1.87	pg/L	1.87	19.2
41464-48-6	79-TeCB	U	1.65	pg/L	1.65	19.2
33284-52-5	80-TeCB	U	1.75	pg/L	1.75	19.2
70362-50-4	81-TeCB	U	2.06	pg/L	2.06	19.2
52663-62-4	82-PeCB		21.5	pg/L	3.29	19.2
60145-20-2	83-PeCB	J	7.25	pg/L	3.71	19.2
52663-60-2	84-PeCB		36.9	pg/L	3.37	19.2
65510-45-4	85-PeCB	CJ	28.9	pg/L	2.60	57.7
55312-69-1	86-PeCB	C	124	pg/L	2.69	115
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CJ	17.9	pg/L	3.15	38.5
73575-57-2	89-PeCB	U	3.25	pg/L	3.25	19.2
68194-07-0	90-PeCB	C	154	pg/L	2.71	57.7
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB		24.7	pg/L	3.06	19.2
73575-56-1	93-PeCB	CU	3.25	pg/L	3.25	38.5
73575-55-0	94-PeCB	U	3.4	pg/L	3.40	19.2
38379-99-6	95-PeCB		93.8	pg/L	2.96	19.2
73575-54-9	96-PeCB	J	1.58	pg/L	1.02	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144004**	**Date Collected:**	**11/22/2016 16:00**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 09:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1040 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	3.21	pg/L	3.21	38.5
38380-01-7	99-PeCB		64.0	pg/L	3.00	19.2
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	2.81	pg/L	2.81	19.2
56558-16-8	104-PeCB	U	.923	pg/L	0.923	19.2
32598-14-4	105-PeCB		95.9	pg/L	3.13	19.2
70424-69-0	106-PeCB	U	2.35	pg/L	2.35	19.2
70424-68-9	107-PeCB	J	12.5	pg/L	2.46	19.2
70362-41-3	108-PeCB	CJ	8.65	pg/L	2.54	38.5
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	246	pg/L	2.37	38.5
39635-32-0	111-PeCB	U	2.37	pg/L	2.37	19.2
74472-36-9	112-PeCB	U	2.13	pg/L	2.13	19.2
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	J	4.94	pg/L	2.98	19.2
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		199	pg/L	2.83	19.2
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	2.04	pg/L	2.04	19.2
56558-18-0	121-PeCB	U	2.46	pg/L	2.46	19.2
76842-07-4	122-PeCB	U	2.75	pg/L	2.75	19.2
65510-44-3	123-PeCB	J	4.54	pg/L	2.88	19.2
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	J	4.77	pg/L	3.54	19.2
39635-33-1	127-PeCB	U	2.62	pg/L	2.62	19.2
38380-07-3	128-HxCB	C	54.7	pg/L	2.19	38.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144004**	**Date Collected:**	**11/22/2016 16:00**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 09:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1040 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	388	pg/L	2.46	57.7
52663-66-8	130-HxCB		20.8	pg/L	2.75	19.2
61798-70-7	131-HxCB	J	3.85	pg/L	2.87	19.2
38380-05-1	132-HxCB		106	pg/L	2.81	19.2
35694-04-3	133-HxCB	J	3.88	pg/L	2.54	19.2
52704-70-8	134-HxCB	J	16.7	pg/L	3.12	19.2
52744-13-5	135-HxCB	C	75.0	pg/L	1.33	38.5
38411-22-2	136-HxCB		23.3	pg/L	0.981	19.2
35694-06-5	137-HxCB	J	10.9	pg/L	2.77	19.2
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CJ	4.52	pg/L	2.38	38.5
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		61.3	pg/L	2.38	19.2
41411-61-4	142-HxCB	U	2.6	pg/L	2.60	19.2
68194-15-0	143-HxCB	U	2.37	pg/L	2.37	19.2
68194-14-9	144-HxCB	J	11.0	pg/L	1.19	19.2
74472-40-5	145-HxCB	U	1.08	pg/L	1.08	19.2
51908-16-8	146-HxCB		39.0	pg/L	2.29	19.2
68194-13-8	147-HxCB	C	196	pg/L	2.37	38.5
74472-41-6	148-HxCB	U	1.25	pg/L	1.25	19.2
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	1.02	pg/L	1.02	19.2
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.942	pg/L	0.942	19.2
35065-27-1	153-HxCB	C	258	pg/L	2.06	38.5
60145-22-4	154-HxCB	J	3.37	pg/L	1.10	19.2
33979-03-2	155-HxCB	U	.827	pg/L	0.827	19.2
38380-08-4	156-HxCB	C	50.7	pg/L	2.29	38.5
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB		36.2	pg/L	1.77	19.2
39635-35-3	159-HxCB	U	1.65	pg/L	1.65	19.2
41411-62-5	160-HxCB	U	2.08	pg/L	2.08	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144004**	**Date Collected:**	**11/22/2016 16:00**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 09:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1040 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.79	pg/L	1.79	19.2
39635-34-2	162-HxCB	J	1.88	pg/L	1.75	19.2
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB		27.0	pg/L	1.87	19.2
74472-46-1	165-HxCB	U	2.19	pg/L	2.19	19.2
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	17.9	pg/L	1.83	19.2
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	2.25	pg/L	2.25	19.2
35065-30-6	170-HpCB		104	pg/L	1.83	19.2
52663-71-5	171-HpCB	CJ	29.0	pg/L	1.73	38.5
52663-74-8	172-HpCB	J	19.1	pg/L	1.77	19.2
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		92.5	pg/L	1.63	19.2
40186-70-7	175-HpCB	J	4.02	pg/L	1.52	19.2
52663-65-7	176-HpCB	J	9.27	pg/L	1.17	19.2
52663-70-4	177-HpCB		52.5	pg/L	1.69	19.2
52663-67-9	178-HpCB	J	15.9	pg/L	1.58	19.2
52663-64-6	179-HpCB		27.3	pg/L	1.13	19.2
35065-29-3	180-HpCB	C	232	pg/L	1.48	38.5
74472-47-2	181-HpCB	U	1.73	pg/L	1.73	19.2
60145-23-5	182-HpCB	U	1.52	pg/L	1.52	19.2
52663-69-1	183-HpCB	C	61.4	pg/L	1.60	38.5
74472-48-3	184-HpCB	U	1.17	pg/L	1.17	19.2
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	1.29	pg/L	1.29	19.2
52663-68-0	187-HpCB		105	pg/L	1.54	19.2
74487-85-7	188-HpCB	U	1.15	pg/L	1.15	19.2
39635-31-9	189-HpCB	J	5.92	pg/L	2.06	19.2
41411-64-7	190-HpCB		21.2	pg/L	1.38	19.2
74472-50-7	191-HpCB	J	3.87	pg/L	1.31	19.2
74472-51-8	192-HpCB	U	1.5	pg/L	1.50	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144004**	**Date Collected:**	**11/22/2016 16:00**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 09:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1040 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		50.6	pg/L	2.33	19.2
52663-78-2	195-OcCB	J	18.2	pg/L	2.35	19.2
42740-50-1	196-OcCB		25.9	pg/L	2.15	19.2
33091-17-7	197-OcCB	CJ	7.88	pg/L	1.60	38.5
68194-17-2	198-OcCB	C	55.5	pg/L	2.23	38.5
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	J	6.58	pg/L	1.54	19.2
2136-99-4	202-OcCB	J	9.15	pg/L	1.62	19.2
52663-76-0	203-OcCB		36.2	pg/L	2.17	19.2
74472-52-9	204-OcCB	U	1.56	pg/L	1.56	19.2
74472-53-0	205-OcCB	J	3.13	pg/L	2.04	19.2
40186-72-9	206-NoCB		22.9	pg/L	2.42	19.2
52663-79-3	207-NoCB	J	3.44	pg/L	1.56	19.2
52663-77-1	208-NoCB	J	6.08	pg/L	1.67	19.2
2051-24-3	209-DeCB	J	7.69	pg/L	1.58	19.2
27323-18-8	Total Mono PCBs	U	0	pg/L	6.40	19.2
25512-42-9	Total Di PCBs		201	pg/L	6.40	19.2
25323-68-6	Total Tri PCBs		384	pg/L	6.40	19.2
26914-33-0	Total Tetra PCBs		663	pg/L	6.40	19.2
25429-29-2	Total Penta PCBs		1150	pg/L	6.40	19.2
26601-64-9	Total Hexa PCBs		1410	pg/L	6.40	19.2
28655-71-2	Total Hepta PCBs		783	pg/L	6.40	19.2
55722-26-4	Total Octa PCBs		213	pg/L	6.40	19.2
53742-07-7	Total Nona PCBs		32.4	pg/L	6.40	19.2
2051-24-3	Total Deca PCB	J	7.69	pg/L	6.40	19.2
1336-36-3	Total PCB Congeners		4840	pg/L	6.40	19.2

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		858	1920	pg/L	44.6	(15%-150%)
13C-3-MoCB		1010	1920	pg/L	52.7	(15%-150%)
13C-4-DiCB		954	1920	pg/L	49.6	(25%-150%)
13C-15-DiCB		1990	1920	pg/L	103	(25%-150%)
13C-19-TrCB		1450	1920	pg/L	75.3	(25%-150%)
13C-37-TrCB		1820	1920	pg/L	94.5	(25%-150%)
13C-54-TeCB		1020	1920	pg/L	53.2	(25%-150%)
13C-77-TeCB		2040	1920	pg/L	106	(25%-150%)
13C-81-TeCB		2070	1920	pg/L	107	(25%-150%)
13C-104-PeCB		1290	1920	pg/L	67.3	(25%-150%)
13C-105-PeCB		1760	1920	pg/L	91.3	(25%-150%)
13C-114-PeCB		1730	1920	pg/L	90.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144004**	**Date Collected:**	**11/22/2016 16:00**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 09:29**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-6**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1040 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1770	1920	pg/L	92.1	(25%-150%)
13C-123-PeCB		1790	1920	pg/L	93.1	(25%-150%)
13C-126-PeCB		1800	1920	pg/L	93.5	(25%-150%)
13C-155-HxCB		1440	1920	pg/L	74.7	(25%-150%)
13C-156-HxCB	C	3140	3850	pg/L	81.7	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1660	1920	pg/L	86.4	(25%-150%)
13C-169-HxCB		1570	1920	pg/L	81.5	(25%-150%)
13C-188-HpCB		1760	1920	pg/L	91.8	(25%-150%)
13C-189-HpCB		1730	1920	pg/L	90.0	(25%-150%)
13C-202-OcCB		1840	1920	pg/L	95.9	(25%-150%)
13C-205-OcCB		1800	1920	pg/L	93.5	(25%-150%)
13C-206-NoCB		1670	1920	pg/L	86.7	(25%-150%)
13C-208-NoCB		1730	1920	pg/L	90.1	(25%-150%)
13C-209-DeCB		1760	1920	pg/L	91.3	(25%-150%)
13C-28-TrCB		1370	1920	pg/L	71.2	(30%-135%)
13C-111-PeCB		1770	1920	pg/L	92.1	(30%-135%)
13C-178-HpCB		1750	1920	pg/L	91.2	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144005**	**Date Collected:**	**11/22/2016 15:10**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 10:35**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-7**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	4.32	pg/L	4.32	19.2
2051-61-8	2-MoCB	U	3.65	pg/L	3.65	19.2
2051-62-9	3-MoCB	U	3.32	pg/L	3.32	19.2
13029-08-8	4-DiCB	U	15.1	pg/L	15.1	19.2
16605-91-7	5-DiCB	U	16.4	pg/L	16.4	19.2
25569-80-6	6-DiCB	U	12.3	pg/L	12.3	19.2
33284-50-3	7-DiCB	U	13.3	pg/L	13.3	19.2
34883-43-7	8-DiCB		21.3	pg/L	10.9	19.2
34883-39-1	9-DiCB	U	13.5	pg/L	13.5	19.2
33146-45-1	10-DiCB	U	6.43	pg/L	6.43	19.2
2050-67-1	11-DiCB	J	44.0	pg/L	13.4	96.0
2974-92-7	12-DiCB	CU	13.7	pg/L	13.7	38.4
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	12.6	pg/L	12.6	19.2
2050-68-2	15-DiCB		33.7	pg/L	12.4	19.2
38444-78-9	16-TrCB		25.1	pg/L	2.46	19.2
37680-66-3	17-TrCB		19.4	pg/L	2.26	19.2
37680-65-2	18-TrCB	C	48.0	pg/L	1.82	38.4
38444-73-4	19-TrCB	J	13.6	pg/L	2.92	19.2
38444-84-7	20-TrCB	C	84.3	pg/L	1.57	38.4
55702-46-0	21-TrCB	CJ	34.3	pg/L	1.48	38.4
38444-85-8	22-TrCB		33.0	pg/L	1.61	19.2
55720-44-0	23-TrCB	U	1.57	pg/L	1.57	19.2
55702-45-9	24-TrCB	U	1.67	pg/L	1.67	19.2
55712-37-3	25-TrCB	J	5.53	pg/L	1.40	19.2
38444-81-4	26-TrCB	CJ	12.1	pg/L	1.50	38.4
38444-76-7	27-TrCB	J	8.06	pg/L	1.59	19.2
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		59.2	pg/L	1.40	19.2
38444-77-8	32-TrCB		21.5	pg/L	1.42	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144005**	**Date Collected:**	**11/22/2016 15:10**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 10:35**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-7**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.59	pg/L	1.59	19.2
37680-69-6	35-TrCB	U	3.45	pg/L	3.45	19.2
38444-87-0	36-TrCB	U	3.22	pg/L	3.22	19.2
38444-90-5	37-TrCB		48.2	pg/L	3.59	19.2
53555-66-1	38-TrCB	U	3.3	pg/L	3.30	19.2
38444-88-1	39-TrCB	U	3.36	pg/L	3.36	19.2
38444-93-8	40-TeCB	C	57.4	pg/L	3.34	38.4
52663-59-9	41-TeCB	J	7.96	pg/L	4.63	19.2
36559-22-5	42-TeCB		28.5	pg/L	3.88	19.2
70362-46-8	43-TeCB	J	4.95	pg/L	4.15	19.2
41464-39-5	44-TeCB	C	103	pg/L	3.45	57.6
70362-45-7	45-TeCB	CJ	23.4	pg/L	2.42	38.4
41464-47-5	46-TeCB	J	7.22	pg/L	2.59	19.2
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB		22.0	pg/L	4.05	19.2
41464-40-8	49-TeCB	C	48.5	pg/L	3.26	38.4
62796-65-0	50-TeCB	CJ	12.1	pg/L	2.28	38.4
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		104	pg/L	3.68	19.2
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	1.96	pg/L	1.96	19.2
74338-24-2	55-TeCB	U	2.94	pg/L	2.94	19.2
41464-43-1	56-TeCB		38.3	pg/L	3.11	19.2
70424-67-8	57-TeCB	U	2.71	pg/L	2.71	19.2
41464-49-7	58-TeCB	U	3.05	pg/L	3.05	19.2
74472-33-6	59-TeCB	CJ	12.6	pg/L	2.80	57.6
33025-41-1	60-TeCB	J	19.0	pg/L	3.01	19.2
33284-53-6	61-TeCB	C	139	pg/L	2.84	76.8
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	2.61	pg/L	2.61	19.2
52663-58-8	64-TeCB		51.5	pg/L	2.86	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144005**	**Date Collected:**	**11/22/2016 15:10**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 10:35**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-7**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		65.6	pg/L	2.78	19.2
73575-53-8	67-TeCB	J	3.05	pg/L	2.42	19.2
73575-52-7	68-TeCB	U	2.65	pg/L	2.65	19.2
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	2.59	pg/L	2.59	19.2
74338-23-1	73-TeCB	U	3.09	pg/L	3.09	19.2
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB		29.3	pg/L	3.21	19.2
70362-49-1	78-TeCB	U	2.71	pg/L	2.71	19.2
41464-48-6	79-TeCB	U	2.4	pg/L	2.40	19.2
33284-52-5	80-TeCB	U	2.51	pg/L	2.51	19.2
70362-50-4	81-TeCB	U	3.09	pg/L	3.09	19.2
52663-62-4	82-PeCB		25.6	pg/L	3.59	19.2
60145-20-2	83-PeCB	J	11.8	pg/L	4.05	19.2
52663-60-2	84-PeCB		43.0	pg/L	3.68	19.2
65510-45-4	85-PeCB	CJ	30.9	pg/L	2.84	57.6
55312-69-1	86-PeCB	C	134	pg/L	2.94	115
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CJ	22.4	pg/L	3.45	38.4
73575-57-2	89-PeCB	U	3.55	pg/L	3.55	19.2
68194-07-0	90-PeCB	C	185	pg/L	2.97	57.6
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB		25.6	pg/L	3.36	19.2
73575-56-1	93-PeCB	CU	3.55	pg/L	3.55	38.4
73575-55-0	94-PeCB	U	3.74	pg/L	3.74	19.2
38379-99-6	95-PeCB		115	pg/L	3.24	19.2
73575-54-9	96-PeCB	U	1.55	pg/L	1.55	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144005**	**Date Collected:**	**11/22/2016 15:10**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 10:35**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-7**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CJ	4.22	pg/L	3.51	38.4
38380-01-7	99-PeCB		68.1	pg/L	3.28	19.2
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	3.07	pg/L	3.07	19.2
56558-16-8	104-PeCB	U	1.44	pg/L	1.44	19.2
32598-14-4	105-PeCB		114	pg/L	3.84	19.2
70424-69-0	106-PeCB	U	2.9	pg/L	2.90	19.2
70424-68-9	107-PeCB	J	14.8	pg/L	3.03	19.2
70362-41-3	108-PeCB	CJ	9.08	pg/L	3.15	38.4
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	294	pg/L	2.59	38.4
39635-32-0	111-PeCB	U	2.59	pg/L	2.59	19.2
74472-36-9	112-PeCB	U	2.32	pg/L	2.32	19.2
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	J	4.86	pg/L	3.68	19.2
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		231	pg/L	3.44	19.2
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	2.23	pg/L	2.23	19.2
56558-18-0	121-PeCB	U	2.69	pg/L	2.69	19.2
76842-07-4	122-PeCB	U	3.4	pg/L	3.40	19.2
65510-44-3	123-PeCB	J	4.07	pg/L	3.63	19.2
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	J	7.87	pg/L	4.55	19.2
39635-33-1	127-PeCB	U	3.24	pg/L	3.24	19.2
38380-07-3	128-HxCB	C	74.2	pg/L	2.46	38.4

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144005**	**Date Collected:**	**11/22/2016 15:10**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 10:35**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-7**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	716	pg/L	2.74	57.6
52663-66-8	130-HxCB		29.8	pg/L	3.07	19.2
61798-70-7	131-HxCB	U	3.19	pg/L	3.19	19.2
38380-05-1	132-HxCB		160	pg/L	3.13	19.2
35694-04-3	133-HxCB	J	5.62	pg/L	2.82	19.2
52704-70-8	134-HxCB	J	18.8	pg/L	3.49	19.2
52744-13-5	135-HxCB	C	209	pg/L	1.52	38.4
38411-22-2	136-HxCB		47.6	pg/L	1.11	19.2
35694-06-5	137-HxCB	J	16.5	pg/L	3.09	19.2
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CJ	4.87	pg/L	2.67	38.4
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		147	pg/L	2.67	19.2
41411-61-4	142-HxCB	U	2.9	pg/L	2.90	19.2
68194-15-0	143-HxCB	U	2.63	pg/L	2.63	19.2
68194-14-9	144-HxCB		25.9	pg/L	1.36	19.2
74472-40-5	145-HxCB	U	1.23	pg/L	1.23	19.2
51908-16-8	146-HxCB		73.4	pg/L	2.55	19.2
68194-13-8	147-HxCB	C	445	pg/L	2.65	38.4
74472-41-6	148-HxCB	U	1.44	pg/L	1.44	19.2
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	1.17	pg/L	1.17	19.2
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	1.07	pg/L	1.07	19.2
35065-27-1	153-HxCB	C	668	pg/L	2.30	38.4
60145-22-4	154-HxCB	J	4.84	pg/L	1.25	19.2
33979-03-2	155-HxCB	U	.979	pg/L	0.979	19.2
38380-08-4	156-HxCB	C	65.7	pg/L	4.57	38.4
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB		59.5	pg/L	1.98	19.2
39635-35-3	159-HxCB	U	3.34	pg/L	3.34	19.2
41411-62-5	160-HxCB	U	2.3	pg/L	2.30	19.2

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144005**	**Date Collected:**	**11/22/2016 15:10**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 10:35**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-7**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	2.02	pg/L	2.02	19.2
39635-34-2	162-HxCB	J	3.86	pg/L	3.55	19.2
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB		43.8	pg/L	2.07	19.2
74472-46-1	165-HxCB	U	2.46	pg/L	2.46	19.2
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB		24.7	pg/L	3.63	19.2
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	4.53	pg/L	4.53	19.2
35065-30-6	170-HpCB		317	pg/L	3.59	19.2
52663-71-5	171-HpCB	C	88.0	pg/L	3.40	38.4
52663-74-8	172-HpCB		65.2	pg/L	3.47	19.2
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		445	pg/L	3.21	19.2
40186-70-7	175-HpCB	J	15.6	pg/L	2.00	19.2
52663-65-7	176-HpCB		42.9	pg/L	1.55	19.2
52663-70-4	177-HpCB		213	pg/L	3.34	19.2
52663-67-9	178-HpCB		82.2	pg/L	2.09	19.2
52663-64-6	179-HpCB		151	pg/L	1.50	19.2
35065-29-3	180-HpCB	C	1080	pg/L	2.94	38.4
74472-47-2	181-HpCB	U	3.44	pg/L	3.44	19.2
60145-23-5	182-HpCB	U	2.02	pg/L	2.02	19.2
52663-69-1	183-HpCB	C	308	pg/L	3.17	38.4
74472-48-3	184-HpCB	U	1.55	pg/L	1.55	19.2
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	1.69	pg/L	1.69	19.2
52663-68-0	187-HpCB		629	pg/L	2.03	19.2
74487-85-7	188-HpCB	U	1.57	pg/L	1.57	19.2
39635-31-9	189-HpCB	U	10.6	pg/L	10.6	19.2
41411-64-7	190-HpCB		74.8	pg/L	2.74	19.2
74472-50-7	191-HpCB	J	11.8	pg/L	2.59	19.2
74472-51-8	192-HpCB	U	2.96	pg/L	2.96	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144005**	**Date Collected:**	**11/22/2016 15:10**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 10:35**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-7**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		322	pg/L	2.74	19.2
52663-78-2	195-OcCB		116	pg/L	2.74	19.2
42740-50-1	196-OcCB		170	pg/L	2.05	19.2
33091-17-7	197-OcCB	C	60.6	pg/L	1.52	38.4
68194-17-2	198-OcCB	C	422	pg/L	2.13	38.4
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB		45.0	pg/L	1.46	19.2
2136-99-4	202-OcCB		68.5	pg/L	1.54	19.2
52663-76-0	203-OcCB		262	pg/L	2.07	19.2
74472-52-9	204-OcCB	U	1.48	pg/L	1.48	19.2
74472-53-0	205-OcCB	J	15.0	pg/L	2.40	19.2
40186-72-9	206-NoCB		134	pg/L	3.28	19.2
52663-79-3	207-NoCB	J	19.2	pg/L	2.09	19.2
52663-77-1	208-NoCB		27.3	pg/L	2.19	19.2
2051-24-3	209-DeCB	J	9.27	pg/L	2.49	19.2
27323-18-8	Total Mono PCBs	U	0	pg/L	6.39	19.2
25512-42-9	Total Di PCBs		99.0	pg/L	6.39	19.2
25323-68-6	Total Tri PCBs		412	pg/L	6.39	19.2
26914-33-0	Total Tetra PCBs		777	pg/L	6.39	19.2
25429-29-2	Total Penta PCBs		1350	pg/L	6.39	19.2
26601-64-9	Total Hexa PCBs		2840	pg/L	6.39	19.2
28655-71-2	Total Hepta PCBs		3530	pg/L	6.39	19.2
55722-26-4	Total Octa PCBs		1480	pg/L	6.39	19.2
53742-07-7	Total Nona PCBs		181	pg/L	6.39	19.2
2051-24-3	Total Deca PCB	J	9.27	pg/L	6.39	19.2
1336-36-3	Total PCB Congeners		10700	pg/L	6.39	19.2

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		909	1920	pg/L	47.4	(15%-150%)
13C-3-MoCB		1080	1920	pg/L	56.2	(15%-150%)
13C-4-DiCB		1060	1920	pg/L	55.0	(25%-150%)
13C-15-DiCB		1950	1920	pg/L	102	(25%-150%)
13C-19-TrCB		1530	1920	pg/L	79.8	(25%-150%)
13C-37-TrCB		1840	1920	pg/L	95.6	(25%-150%)
13C-54-TeCB		1150	1920	pg/L	59.7	(25%-150%)
13C-77-TeCB		2090	1920	pg/L	109	(25%-150%)
13C-81-TeCB		2130	1920	pg/L	111	(25%-150%)
13C-104-PeCB		1390	1920	pg/L	72.6	(25%-150%)
13C-105-PeCB		1910	1920	pg/L	99.5	(25%-150%)
13C-114-PeCB		1890	1920	pg/L	98.7	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144005**	**Date Collected:**	**11/22/2016 15:10**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 10:35**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-7**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1042.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1920	1920	pg/L	100	(25%-150%)
13C-123-PeCB		1920	1920	pg/L	99.8	(25%-150%)
13C-126-PeCB		1890	1920	pg/L	98.6	(25%-150%)
13C-155-HxCB		1460	1920	pg/L	76.0	(25%-150%)
13C-156-HxCB	C	3310	3840	pg/L	86.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1740	1920	pg/L	90.9	(25%-150%)
13C-169-HxCB		1590	1920	pg/L	82.8	(25%-150%)
13C-188-HpCB		1870	1920	pg/L	97.4	(25%-150%)
13C-189-HpCB		1850	1920	pg/L	96.4	(25%-150%)
13C-202-OcCB		2030	1920	pg/L	106	(25%-150%)
13C-205-OcCB		1930	1920	pg/L	101	(25%-150%)
13C-206-NoCB		1820	1920	pg/L	94.8	(25%-150%)
13C-208-NoCB		1940	1920	pg/L	101	(25%-150%)
13C-209-DeCB		1840	1920	pg/L	95.9	(25%-150%)
13C-28-TrCB		1510	1920	pg/L	78.8	(30%-135%)
13C-111-PeCB		1880	1920	pg/L	98.0	(30%-135%)
13C-178-HpCB		1860	1920	pg/L	97.1	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
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Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144006**	**Date Collected:**	**11/22/2016 14:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 11:41**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1043.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	3.07	pg/L	3.07	19.2
2051-61-8	2-MoCB	U	2.78	pg/L	2.78	19.2
2051-62-9	3-MoCB	U	2.7	pg/L	2.70	19.2
13029-08-8	4-DiCB	U	10.6	pg/L	10.6	19.2
16605-91-7	5-DiCB	U	7.45	pg/L	7.45	19.2
25569-80-6	6-DiCB	U	5.59	pg/L	5.59	19.2
33284-50-3	7-DiCB	U	6.07	pg/L	6.07	19.2
34883-43-7	8-DiCB	J	12.4	pg/L	4.96	19.2
34883-39-1	9-DiCB	U	6.17	pg/L	6.17	19.2
33146-45-1	10-DiCB	U	3.14	pg/L	3.14	19.2
2050-67-1	11-DiCB	J	35.2	pg/L	6.09	95.8
2974-92-7	12-DiCB	CU	6.25	pg/L	6.25	38.3
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	5.73	pg/L	5.73	19.2
2050-68-2	15-DiCB	J	11.6	pg/L	5.71	19.2
38444-78-9	16-TrCB	J	7.43	pg/L	1.32	19.2
37680-66-3	17-TrCB	J	7.01	pg/L	1.23	19.2
37680-65-2	18-TrCB	CJ	15.7	pg/L	0.977	38.3
38444-73-4	19-TrCB	J	3.77	pg/L	1.82	19.2
38444-84-7	20-TrCB	CJ	21.9	pg/L	0.843	38.3
55702-46-0	21-TrCB	CJ	9.89	pg/L	0.805	38.3
38444-85-8	22-TrCB	J	9.83	pg/L	0.881	19.2
55720-44-0	23-TrCB	U	.843	pg/L	0.843	19.2
55702-45-9	24-TrCB	U	.901	pg/L	0.901	19.2
55712-37-3	25-TrCB	J	0.786	pg/L	0.766	19.2
38444-81-4	26-TrCB	CJ	3.54	pg/L	0.805	38.3
38444-76-7	27-TrCB	J	1.19	pg/L	0.862	19.2
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	J	17.1	pg/L	0.766	19.2
38444-77-8	32-TrCB	J	3.83	pg/L	0.766	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144006**	**Date Collected:**	**11/22/2016 14:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 11:41**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1043.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	.862	pg/L	0.862	19.2
37680-69-6	35-TrCB	U	1.65	pg/L	1.65	19.2
38444-87-0	36-TrCB	U	1.53	pg/L	1.53	19.2
38444-90-5	37-TrCB	J	11.4	pg/L	1.65	19.2
53555-66-1	38-TrCB	U	1.59	pg/L	1.59	19.2
38444-88-1	39-TrCB	U	1.61	pg/L	1.61	19.2
38444-93-8	40-TeCB	CJ	12.1	pg/L	3.37	38.3
52663-59-9	41-TeCB	U	4.69	pg/L	4.69	19.2
36559-22-5	42-TeCB	J	6.86	pg/L	3.93	19.2
70362-46-8	43-TeCB	U	4.2	pg/L	4.20	19.2
41464-39-5	44-TeCB	CJ	32.5	pg/L	3.51	57.5
70362-45-7	45-TeCB	CJ	4.16	pg/L	1.11	38.3
41464-47-5	46-TeCB	U	1.8	pg/L	1.80	19.2
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	5.25	pg/L	4.12	19.2
41464-40-8	49-TeCB	CJ	14.8	pg/L	3.30	38.3
62796-65-0	50-TeCB	CJ	2.13	pg/L	1.05	38.3
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		46.0	pg/L	3.74	19.2
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	1.03	pg/L	1.03	19.2
74338-24-2	55-TeCB	U	1.69	pg/L	1.69	19.2
41464-43-1	56-TeCB	J	11.6	pg/L	1.78	19.2
70424-67-8	57-TeCB	U	1.55	pg/L	1.55	19.2
41464-49-7	58-TeCB	U	1.74	pg/L	1.74	19.2
74472-33-6	59-TeCB	CU	2.84	pg/L	2.84	57.5
33025-41-1	60-TeCB	J	6.94	pg/L	1.72	19.2
33284-53-6	61-TeCB	CJ	49.8	pg/L	1.63	76.6
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	1.49	pg/L	1.49	19.2
52663-58-8	64-TeCB	J	14.0	pg/L	2.89	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144006**	**Date Collected:**	**11/22/2016 14:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 11:41**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1043.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		19.8	pg/L	1.59	19.2
73575-53-8	67-TeCB	U	1.38	pg/L	1.38	19.2
73575-52-7	68-TeCB	U	1.51	pg/L	1.51	19.2
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.49	pg/L	1.49	19.2
74338-23-1	73-TeCB	U	3.14	pg/L	3.14	19.2
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	3.72	pg/L	1.82	19.2
70362-49-1	78-TeCB	U	1.55	pg/L	1.55	19.2
41464-48-6	79-TeCB	U	1.38	pg/L	1.38	19.2
33284-52-5	80-TeCB	U	1.44	pg/L	1.44	19.2
70362-50-4	81-TeCB	U	1.69	pg/L	1.69	19.2
52663-62-4	82-PeCB	J	7.68	pg/L	1.69	19.2
60145-20-2	83-PeCB	J	4.18	pg/L	1.90	19.2
52663-60-2	84-PeCB	J	18.5	pg/L	1.72	19.2
65510-45-4	85-PeCB	CJ	9.37	pg/L	1.32	57.5
55312-69-1	86-PeCB	CJ	45.0	pg/L	1.38	115
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CJ	8.51	pg/L	1.63	38.3
73575-57-2	89-PeCB	U	1.67	pg/L	1.67	19.2
68194-07-0	90-PeCB	C	63.7	pg/L	1.40	57.5
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	11.2	pg/L	1.57	19.2
73575-56-1	93-PeCB	CU	1.67	pg/L	1.67	38.3
73575-55-0	94-PeCB	U	1.74	pg/L	1.74	19.2
38379-99-6	95-PeCB		52.9	pg/L	1.51	19.2
73575-54-9	96-PeCB	U	.786	pg/L	0.786	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144006**	**Date Collected:**	**11/22/2016 14:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 11:41**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1043.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	1.65	pg/L	1.65	38.3
38380-01-7	99-PeCB		24.0	pg/L	1.53	19.2
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	1.44	pg/L	1.44	19.2
56558-16-8	104-PeCB	U	.766	pg/L	0.766	19.2
32598-14-4	105-PeCB		25.6	pg/L	2.05	19.2
70424-69-0	106-PeCB	U	1.55	pg/L	1.55	19.2
70424-68-9	107-PeCB	J	3.77	pg/L	1.63	19.2
70362-41-3	108-PeCB	CJ	2.34	pg/L	1.69	38.3
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	83.2	pg/L	1.21	38.3
39635-32-0	111-PeCB	U	1.21	pg/L	1.21	19.2
74472-36-9	112-PeCB	U	1.09	pg/L	1.09	19.2
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	1.95	pg/L	1.95	19.2
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		54.7	pg/L	1.84	19.2
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	1.03	pg/L	1.03	19.2
56558-18-0	121-PeCB	U	1.26	pg/L	1.26	19.2
76842-07-4	122-PeCB	U	1.82	pg/L	1.82	19.2
65510-44-3	123-PeCB	U	1.92	pg/L	1.92	19.2
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	2.3	pg/L	2.30	19.2
39635-33-1	127-PeCB	U	1.74	pg/L	1.74	19.2
38380-07-3	128-HxCB	CJ	11.5	pg/L	1.78	38.3

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144006**	**Date Collected:**	**11/22/2016 14:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 11:41**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1043.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	78.0	pg/L	1.99	57.5
52663-66-8	130-HxCB	J	4.66	pg/L	2.22	19.2
61798-70-7	131-HxCB	U	2.32	pg/L	2.32	19.2
38380-05-1	132-HxCB		24.6	pg/L	2.28	19.2
35694-04-3	133-HxCB	U	2.05	pg/L	2.05	19.2
52704-70-8	134-HxCB	J	3.70	pg/L	2.53	19.2
52744-13-5	135-HxCB	CJ	22.3	pg/L	1.17	38.3
38411-22-2	136-HxCB	J	8.78	pg/L	0.862	19.2
35694-06-5	137-HxCB	J	4.54	pg/L	2.24	19.2
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	1.94	pg/L	1.94	38.3
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	11.3	pg/L	1.94	19.2
41411-61-4	142-HxCB	U	2.11	pg/L	2.11	19.2
68194-15-0	143-HxCB	U	1.92	pg/L	1.92	19.2
68194-14-9	144-HxCB	J	3.56	pg/L	1.05	19.2
74472-40-5	145-HxCB	U	.958	pg/L	0.958	19.2
51908-16-8	146-HxCB	J	8.93	pg/L	1.86	19.2
68194-13-8	147-HxCB	C	48.8	pg/L	1.92	38.3
74472-41-6	148-HxCB	U	1.13	pg/L	1.13	19.2
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.901	pg/L	0.901	19.2
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.824	pg/L	0.824	19.2
35065-27-1	153-HxCB	C	48.8	pg/L	1.67	38.3
60145-22-4	154-HxCB	U	.958	pg/L	0.958	19.2
33979-03-2	155-HxCB	U	.747	pg/L	0.747	19.2
38380-08-4	156-HxCB	CJ	11.6	pg/L	1.67	38.3
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	7.26	pg/L	1.44	19.2
39635-35-3	159-HxCB	U	1.19	pg/L	1.19	19.2
41411-62-5	160-HxCB	U	1.69	pg/L	1.69	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144006**	**Date Collected:**	**11/22/2016 14:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 11:41**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1043.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.46	pg/L	1.46	19.2
39635-34-2	162-HxCB	U	1.26	pg/L	1.26	19.2
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	5.17	pg/L	1.51	19.2
74472-46-1	165-HxCB	U	1.78	pg/L	1.78	19.2
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	3.51	pg/L	1.30	19.2
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.53	pg/L	1.53	19.2
35065-30-6	170-HpCB	J	13.2	pg/L	1.92	19.2
52663-71-5	171-HpCB	CJ	3.62	pg/L	1.82	38.3
52663-74-8	172-HpCB	J	2.49	pg/L	1.86	19.2
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	12.8	pg/L	1.71	19.2
40186-70-7	175-HpCB	U	1.03	pg/L	1.03	19.2
52663-65-7	176-HpCB	J	1.51	pg/L	0.805	19.2
52663-70-4	177-HpCB	J	7.28	pg/L	1.78	19.2
52663-67-9	178-HpCB	U	3.18	pg/L	3.18	19.2
52663-64-6	179-HpCB	J	4.79	pg/L	0.786	19.2
35065-29-3	180-HpCB	CJ	28.5	pg/L	1.57	38.3
74472-47-2	181-HpCB	U	1.84	pg/L	1.84	19.2
60145-23-5	182-HpCB	U	1.05	pg/L	1.05	19.2
52663-69-1	183-HpCB	CJ	9.14	pg/L	1.69	38.3
74472-48-3	184-HpCB	U	.805	pg/L	0.805	19.2
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.881	pg/L	0.881	19.2
52663-68-0	187-HpCB		23.5	pg/L	1.05	19.2
74487-85-7	188-HpCB	U	.843	pg/L	0.843	19.2
39635-31-9	189-HpCB	U	1.34	pg/L	1.34	19.2
41411-64-7	190-HpCB	U	2.7	pg/L	2.70	19.2
74472-50-7	191-HpCB	U	1.38	pg/L	1.38	19.2
74472-51-8	192-HpCB	U	1.59	pg/L	1.59	19.2

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144006**	**Date Collected:**	**11/22/2016 14:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 11:41**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1043.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	5.92	pg/L	1.55	19.2
52663-78-2	195-OcCB	J	1.71	pg/L	1.55	19.2
42740-50-1	196-OcCB	J	2.82	pg/L	1.36	19.2
33091-17-7	197-OcCB	CJ	1.40	pg/L	1.02	38.3
68194-17-2	198-OcCB	CJ	7.68	pg/L	1.42	38.3
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	.977	pg/L	0.977	19.2
2136-99-4	202-OcCB	J	1.46	pg/L	1.05	19.2
52663-76-0	203-OcCB	J	4.79	pg/L	1.38	19.2
74472-52-9	204-OcCB	U	.977	pg/L	0.977	19.2
74472-53-0	205-OcCB	U	1.34	pg/L	1.34	19.2
40186-72-9	206-NoCB	J	2.76	pg/L	1.78	19.2
52663-79-3	207-NoCB	U	1.17	pg/L	1.17	19.2
52663-77-1	208-NoCB	U	1.26	pg/L	1.26	19.2
2051-24-3	209-DeCB	J	1.82	pg/L	1.46	19.2
27323-18-8	Total Mono PCBs	U	0	pg/L	6.38	19.2
25512-42-9	Total Di PCBs		59.2	pg/L	6.38	19.2
25323-68-6	Total Tri PCBs		113	pg/L	6.38	19.2
26914-33-0	Total Tetra PCBs		230	pg/L	6.38	19.2
25429-29-2	Total Penta PCBs		415	pg/L	6.38	19.2
26601-64-9	Total Hexa PCBs		307	pg/L	6.38	19.2
28655-71-2	Total Hepta PCBs		107	pg/L	6.38	19.2
55722-26-4	Total Octa PCBs		25.8	pg/L	6.38	19.2
53742-07-7	Total Nona PCBs	J	2.76	pg/L	6.38	19.2
2051-24-3	Total Deca PCB	J	1.82	pg/L	6.38	19.2
1336-36-3	Total PCB Congeners		1260	pg/L	6.38	19.2

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		899	1920	pg/L	46.9	(15%-150%)
13C-3-MoCB		1010	1920	pg/L	52.6	(15%-150%)
13C-4-DiCB		938	1920	pg/L	49.0	(25%-150%)
13C-15-DiCB		2110	1920	pg/L	110	(25%-150%)
13C-19-TrCB		1460	1920	pg/L	76.1	(25%-150%)
13C-37-TrCB		1900	1920	pg/L	99.2	(25%-150%)
13C-54-TeCB		962	1920	pg/L	50.2	(25%-150%)
13C-77-TeCB		2180	1920	pg/L	114	(25%-150%)
13C-81-TeCB		2190	1920	pg/L	114	(25%-150%)
13C-104-PeCB		1270	1920	pg/L	66.1	(25%-150%)
13C-105-PeCB		1780	1920	pg/L	93.1	(25%-150%)
13C-114-PeCB		1750	1920	pg/L	91.3	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144006**	**Date Collected:**	**11/22/2016 14:55**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-4**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 11:41**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-8**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1043.8 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1790	1920	pg/L	93.4	(25%-150%)
13C-123-PeCB		1810	1920	pg/L	94.7	(25%-150%)
13C-126-PeCB		1840	1920	pg/L	96.0	(25%-150%)
13C-155-HxCB		1430	1920	pg/L	74.7	(25%-150%)
13C-156-HxCB	C	3200	3830	pg/L	83.5	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1670	1920	pg/L	86.9	(25%-150%)
13C-169-HxCB		1630	1920	pg/L	85.1	(25%-150%)
13C-188-HpCB		1690	1920	pg/L	87.9	(25%-150%)
13C-189-HpCB		1760	1920	pg/L	91.8	(25%-150%)
13C-202-OcCB		1860	1920	pg/L	96.8	(25%-150%)
13C-205-OcCB		1870	1920	pg/L	97.6	(25%-150%)
13C-206-NoCB		1810	1920	pg/L	94.4	(25%-150%)
13C-208-NoCB		1840	1920	pg/L	95.8	(25%-150%)
13C-209-DeCB		1830	1920	pg/L	95.7	(25%-150%)
13C-28-TrCB		1330	1920	pg/L	69.3	(30%-135%)
13C-111-PeCB		1840	1920	pg/L	96.0	(30%-135%)
13C-178-HpCB		1880	1920	pg/L	98.3	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144007**	**Date Collected:**	**11/22/2016 14:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 12:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	9.86	pg/L	9.86	19.5
2051-61-8	2-MoCB	U	8.09	pg/L	8.09	19.5
2051-62-9	3-MoCB	U	7.19	pg/L	7.19	19.5
13029-08-8	4-DiCB		37.7	pg/L	25.4	19.5
16605-91-7	5-DiCB	U	23.2	pg/L	23.2	19.5
25569-80-6	6-DiCB	U	17.4	pg/L	17.4	19.5
33284-50-3	7-DiCB	U	18.8	pg/L	18.8	19.5
34883-43-7	8-DiCB		84.6	pg/L	15.4	19.5
34883-39-1	9-DiCB	U	19.2	pg/L	19.2	19.5
33146-45-1	10-DiCB	U	9.71	pg/L	9.71	19.5
2050-67-1	11-DiCB	U	151	pg/L	151	97.6
2974-92-7	12-DiCB	CU	19.4	pg/L	19.4	39.1
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	17.8	pg/L	17.8	19.5
2050-68-2	15-DiCB		134	pg/L	16.8	19.5
38444-78-9	16-TrCB		70.3	pg/L	4.71	19.5
37680-66-3	17-TrCB		59.5	pg/L	4.34	19.5
37680-65-2	18-TrCB	C	130	pg/L	3.50	39.1
38444-73-4	19-TrCB		19.8	pg/L	6.54	19.5
38444-84-7	20-TrCB	C	341	pg/L	3.01	39.1
55702-46-0	21-TrCB	C	153	pg/L	2.83	39.1
38444-85-8	22-TrCB		140	pg/L	3.11	19.5
55720-44-0	23-TrCB	U	3.01	pg/L	3.01	19.5
55702-45-9	24-TrCB	U	3.22	pg/L	3.22	19.5
55712-37-3	25-TrCB	J	18.6	pg/L	2.70	19.5
38444-81-4	26-TrCB	C	42.2	pg/L	2.87	39.1
38444-76-7	27-TrCB	J	18.1	pg/L	3.09	19.5
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		216	pg/L	2.71	19.5
38444-77-8	32-TrCB		47.5	pg/L	2.73	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144007**	**Date Collected:**	**11/22/2016 14:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 12:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	3.09	pg/L	3.09	19.5
37680-69-6	35-TrCB	J	15.3	pg/L	4.98	19.5
38444-87-0	36-TrCB	U	4.65	pg/L	4.65	19.5
38444-90-5	37-TrCB		232	pg/L	4.80	19.5
53555-66-1	38-TrCB	U	4.78	pg/L	4.78	19.5
38444-88-1	39-TrCB	U	4.84	pg/L	4.84	19.5
38444-93-8	40-TeCB	C	247	pg/L	7.03	39.1
52663-59-9	41-TeCB		56.2	pg/L	9.78	19.5
36559-22-5	42-TeCB		134	pg/L	8.18	19.5
70362-46-8	43-TeCB		24.0	pg/L	8.73	19.5
41464-39-5	44-TeCB	C	538	pg/L	7.30	58.6
70362-45-7	45-TeCB	C	56.2	pg/L	2.19	39.1
41464-47-5	46-TeCB		24.3	pg/L	2.36	19.5
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB		84.0	pg/L	8.55	19.5
41464-40-8	49-TeCB	C	248	pg/L	6.87	39.1
62796-65-0	50-TeCB	CJ	33.9	pg/L	2.07	39.1
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		728	pg/L	7.77	19.5
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	2.38	pg/L	2.38	19.5
74338-24-2	55-TeCB	J	12.3	pg/L	5.06	19.5
41464-43-1	56-TeCB		312	pg/L	5.37	19.5
70424-67-8	57-TeCB	U	4.67	pg/L	4.67	19.5
41464-49-7	58-TeCB	U	5.27	pg/L	5.27	19.5
74472-33-6	59-TeCB	CJ	48.6	pg/L	5.92	58.6
33025-41-1	60-TeCB		153	pg/L	5.19	19.5
33284-53-6	61-TeCB	C	1060	pg/L	4.88	78.1
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	J	16.1	pg/L	4.49	19.5
52663-58-8	64-TeCB		270	pg/L	6.03	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144007**	**Date Collected:**	**11/22/2016 14:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 12:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		534	pg/L	4.78	19.5
73575-53-8	67-TeCB	J	15.1	pg/L	4.16	19.5
73575-52-7	68-TeCB	U	4.57	pg/L	4.57	19.5
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	4.47	pg/L	4.47	19.5
74338-23-1	73-TeCB	J	15.7	pg/L	6.52	19.5
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB		115	pg/L	5.18	19.5
70362-49-1	78-TeCB	U	4.65	pg/L	4.65	19.5
41464-48-6	79-TeCB	J	18.8	pg/L	4.14	19.5
33284-52-5	80-TeCB	U	4.34	pg/L	4.34	19.5
70362-50-4	81-TeCB	U	4.8	pg/L	4.80	19.5
52663-62-4	82-PeCB		218	pg/L	3.52	19.5
60145-20-2	83-PeCB		92.0	pg/L	3.96	19.5
52663-60-2	84-PeCB		449	pg/L	3.59	19.5
65510-45-4	85-PeCB	C	258	pg/L	2.77	58.6
55312-69-1	86-PeCB	C	1210	pg/L	2.87	117
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	C	193	pg/L	3.38	39.1
73575-57-2	89-PeCB	J	16.7	pg/L	3.48	19.5
68194-07-0	90-PeCB	C	1500	pg/L	2.91	58.6
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB		275	pg/L	3.28	19.5
73575-56-1	93-PeCB	CU	3.48	pg/L	3.48	39.1
73575-55-0	94-PeCB	J	5.19	pg/L	3.65	19.5
38379-99-6	95-PeCB		1160	pg/L	3.16	19.5
73575-54-9	96-PeCB	J	7.93	pg/L	1.25	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144007**	**Date Collected:**	**11/22/2016 14:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 12:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CJ	30.0	pg/L	3.44	39.1
38380-01-7	99-PeCB		637	pg/L	3.20	19.5
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	J	4.41	pg/L	3.01	19.5
56558-16-8	104-PeCB	U	1.31	pg/L	1.31	19.5
32598-14-4	105-PeCB		708	pg/L	5.16	19.5
70424-69-0	106-PeCB	U	4.02	pg/L	4.02	19.5
70424-68-9	107-PeCB		104	pg/L	4.20	19.5
70362-41-3	108-PeCB	C	63.1	pg/L	4.34	39.1
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	2550	pg/L	2.54	39.1
39635-32-0	111-PeCB	U	2.54	pg/L	2.54	19.5
74472-36-9	112-PeCB	U	2.28	pg/L	2.28	19.5
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB		33.3	pg/L	5.00	19.5
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		1450	pg/L	4.73	19.5
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	J	3.53	pg/L	2.17	19.5
56558-18-0	121-PeCB	U	2.64	pg/L	2.64	19.5
76842-07-4	122-PeCB		23.4	pg/L	4.69	19.5
65510-44-3	123-PeCB		24.7	pg/L	4.77	19.5
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	J	16.1	pg/L	5.86	19.5
39635-33-1	127-PeCB	J	5.21	pg/L	4.47	19.5
38380-07-3	128-HxCB	C	422	pg/L	2.46	39.1

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144007**	**Date Collected:**	**11/22/2016 14:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 12:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	2690	pg/L	2.75	58.6
52663-66-8	130-HxCB		157	pg/L	3.09	19.5
61798-70-7	131-HxCB		33.5	pg/L	3.20	19.5
38380-05-1	132-HxCB		814	pg/L	3.14	19.5
35694-04-3	133-HxCB		25.1	pg/L	2.83	19.5
52704-70-8	134-HxCB		139	pg/L	3.50	19.5
52744-13-5	135-HxCB	C	532	pg/L	1.86	39.1
38411-22-2	136-HxCB		193	pg/L	1.39	19.5
35694-06-5	137-HxCB		119	pg/L	3.11	19.5
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CJ	36.1	pg/L	2.68	39.1
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		387	pg/L	2.68	19.5
41411-61-4	142-HxCB	U	2.91	pg/L	2.91	19.5
68194-15-0	143-HxCB	J	14.5	pg/L	2.66	19.5
68194-14-9	144-HxCB		77.9	pg/L	1.68	19.5
74472-40-5	145-HxCB	U	1.52	pg/L	1.52	19.5
51908-16-8	146-HxCB		269	pg/L	2.56	19.5
68194-13-8	147-HxCB	C	1390	pg/L	2.66	39.1
74472-41-6	148-HxCB	U	1.78	pg/L	1.78	19.5
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	J	2.66	pg/L	1.45	19.5
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	J	1.50	pg/L	1.33	19.5
35065-27-1	153-HxCB	C	1530	pg/L	2.30	39.1
60145-22-4	154-HxCB	J	13.9	pg/L	1.54	19.5
33979-03-2	155-HxCB	U	1.23	pg/L	1.23	19.5
38380-08-4	156-HxCB	C	323	pg/L	3.89	39.1
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB		254	pg/L	1.99	19.5
39635-35-3	159-HxCB	U	2.81	pg/L	2.81	19.5
41411-62-5	160-HxCB	U	2.32	pg/L	2.32	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144007**	**Date Collected:**	**11/22/2016 14:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 12:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	2.01	pg/L	2.01	19.5
39635-34-2	162-HxCB	J	5.31	pg/L	2.99	19.5
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB		171	pg/L	2.09	19.5
74472-46-1	165-HxCB	U	2.46	pg/L	2.46	19.5
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB		111	pg/L	3.05	19.5
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	3.69	pg/L	3.69	19.5
35065-30-6	170-HpCB		435	pg/L	2.66	19.5
52663-71-5	171-HpCB	C	127	pg/L	2.52	39.1
52663-74-8	172-HpCB		78.1	pg/L	2.58	19.5
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		412	pg/L	2.38	19.5
40186-70-7	175-HpCB	J	18.6	pg/L	1.76	19.5
52663-65-7	176-HpCB		43.9	pg/L	1.37	19.5
52663-70-4	177-HpCB		230	pg/L	2.48	19.5
52663-67-9	178-HpCB		71.7	pg/L	1.84	19.5
52663-64-6	179-HpCB		129	pg/L	1.33	19.5
35065-29-3	180-HpCB	C	975	pg/L	2.17	39.1
74472-47-2	181-HpCB	J	6.19	pg/L	2.54	19.5
60145-23-5	182-HpCB	J	2.38	pg/L	1.76	19.5
52663-69-1	183-HpCB	C	278	pg/L	2.34	39.1
74472-48-3	184-HpCB	U	1.37	pg/L	1.37	19.5
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	1.48	pg/L	1.48	19.5
52663-68-0	187-HpCB		495	pg/L	1.80	19.5
74487-85-7	188-HpCB	J	1.84	pg/L	1.35	19.5
39635-31-9	189-HpCB		20.6	pg/L	3.42	19.5
41411-64-7	190-HpCB		86.8	pg/L	2.03	19.5
74472-50-7	191-HpCB	J	16.3	pg/L	1.91	19.5
74472-51-8	192-HpCB	U	2.19	pg/L	2.19	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144007**	**Date Collected:**	**11/22/2016 14:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 12:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		187	pg/L	3.85	19.5
52663-78-2	195-OcCB		66.3	pg/L	3.87	19.5
42740-50-1	196-OcCB		102	pg/L	2.46	19.5
33091-17-7	197-OcCB	CJ	31.2	pg/L	1.82	39.1
68194-17-2	198-OcCB	C	243	pg/L	2.56	39.1
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB		25.4	pg/L	1.76	19.5
2136-99-4	202-OcCB		40.5	pg/L	1.86	19.5
52663-76-0	203-OcCB		152	pg/L	2.50	19.5
74472-52-9	204-OcCB	U	1.78	pg/L	1.78	19.5
74472-53-0	205-OcCB	J	9.59	pg/L	3.36	19.5
40186-72-9	206-NoCB		116	pg/L	2.70	19.5
52663-79-3	207-NoCB	J	15.0	pg/L	1.72	19.5
52663-77-1	208-NoCB		31.8	pg/L	1.80	19.5
2051-24-3	209-DeCB		45.8	pg/L	3.14	19.5
27323-18-8	Total Mono PCBs	U	0	pg/L	6.50	19.5
25512-42-9	Total Di PCBs		257	pg/L	6.50	19.5
25323-68-6	Total Tri PCBs		1500	pg/L	6.50	19.5
26914-33-0	Total Tetra PCBs		4740	pg/L	6.50	19.5
25429-29-2	Total Penta PCBs		11000	pg/L	6.50	19.5
26601-64-9	Total Hexa PCBs		9700	pg/L	6.50	19.5
28655-71-2	Total Hepta PCBs		3430	pg/L	6.50	19.5
55722-26-4	Total Octa PCBs		857	pg/L	6.50	19.5
53742-07-7	Total Nona PCBs		162	pg/L	6.50	19.5
2051-24-3	Total Deca PCB		45.8	pg/L	6.50	19.5
1336-36-3	Total PCB Congeners		31700	pg/L	6.50	19.5

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		632	1950	pg/L	32.4	(15%-150%)
13C-3-MoCB		792	1950	pg/L	40.6	(15%-150%)
13C-4-DiCB		799	1950	pg/L	40.9	(25%-150%)
13C-15-DiCB		1660	1950	pg/L	84.8	(25%-150%)
13C-19-TrCB		1240	1950	pg/L	63.3	(25%-150%)
13C-37-TrCB		1760	1950	pg/L	90.3	(25%-150%)
13C-54-TeCB		955	1950	pg/L	48.9	(25%-150%)
13C-77-TeCB		2150	1950	pg/L	110	(25%-150%)
13C-81-TeCB		2190	1950	pg/L	112	(25%-150%)
13C-104-PeCB		1310	1950	pg/L	67.0	(25%-150%)
13C-105-PeCB		1940	1950	pg/L	99.6	(25%-150%)
13C-114-PeCB		1930	1950	pg/L	98.8	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144007**	**Date Collected:**	**11/22/2016 14:58**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-5**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 12:47**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a_2-9**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1960	1950	pg/L	100	(25%-150%)
13C-123-PeCB		2000	1950	pg/L	102	(25%-150%)
13C-126-PeCB		1980	1950	pg/L	101	(25%-150%)
13C-155-HxCB		1460	1950	pg/L	75.0	(25%-150%)
13C-156-HxCB	C	3450	3910	pg/L	88.3	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1810	1950	pg/L	92.7	(25%-150%)
13C-169-HxCB		1730	1950	pg/L	88.5	(25%-150%)
13C-188-HpCB		1920	1950	pg/L	98.1	(25%-150%)
13C-189-HpCB		1930	1950	pg/L	98.9	(25%-150%)
13C-202-OcCB		2080	1950	pg/L	106	(25%-150%)
13C-205-OcCB		2060	1950	pg/L	105	(25%-150%)
13C-206-NoCB		1920	1950	pg/L	98.4	(25%-150%)
13C-208-NoCB		2040	1950	pg/L	105	(25%-150%)
13C-209-DeCB		1940	1950	pg/L	99.5	(25%-150%)
13C-28-TrCB		1460	1950	pg/L	74.7	(30%-135%)
13C-111-PeCB		1950	1950	pg/L	99.7	(30%-135%)
13C-178-HpCB		1960	1950	pg/L	100	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144008**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 15:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-5**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**994.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		1360	pg/L	25.7	201
2051-61-8	2-MoCB		371	pg/L	22.4	201
2051-62-9	3-MoCB		1260	pg/L	21.4	201
13029-08-8	4-DiCB		12600	pg/L	206	201
16605-91-7	5-DiCB		1010	pg/L	150	201
25569-80-6	6-DiCB		7330	pg/L	115	201
33284-50-3	7-DiCB		1350	pg/L	125	201
34883-43-7	8-DiCB		35200	pg/L	107	201
34883-39-1	9-DiCB		2170	pg/L	130	201
33146-45-1	10-DiCB		602	pg/L	111	201
2050-67-1	11-DiCB		2070	pg/L	127	1010
2974-92-7	12-DiCB	C	3830	pg/L	130	402
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	123	pg/L	123	201
2050-68-2	15-DiCB		30400	pg/L	136	201
38444-78-9	16-TrCB		29100	pg/L	37.8	201
37680-66-3	17-TrCB		24900	pg/L	32.9	201
37680-65-2	18-TrCB	C	50000	pg/L	26.4	402
38444-73-4	19-TrCB		6120	pg/L	37.6	201
38444-84-7	20-TrCB	C	98300	pg/L	23.3	402
55702-46-0	21-TrCB	C	60300	pg/L	22.3	402
38444-85-8	22-TrCB		41000	pg/L	24.4	201
55720-44-0	23-TrCB	J	113	pg/L	23.7	201
55702-45-9	24-TrCB		1410	pg/L	23.8	201
55712-37-3	25-TrCB		7010	pg/L	20.4	201
38444-81-4	26-TrCB	C	15900	pg/L	22.6	402
38444-76-7	27-TrCB		4190	pg/L	22.6	201
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		77500	pg/L	20.8	201
38444-77-8	32-TrCB		17100	pg/L	21.4	201

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144008**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 15:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-5**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**994.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB		261	pg/L	23.4	201
37680-69-6	35-TrCB		1900	pg/L	57.2	201
38444-87-0	36-TrCB	U	51.5	pg/L	51.5	201
38444-90-5	37-TrCB		33300	pg/L	63.4	201
53555-66-1	38-TrCB	U	55.9	pg/L	55.9	201
38444-88-1	39-TrCB	U	55.5	pg/L	55.5	201
38444-93-8	40-TeCB	C	38100	pg/L	18.2	402
52663-59-9	41-TeCB		10300	pg/L	28.4	201
36559-22-5	42-TeCB		21900	pg/L	20.3	201
70362-46-8	43-TeCB		4080	pg/L	24.1	201
41464-39-5	44-TeCB	C	76600	pg/L	19.2	603
70362-45-7	45-TeCB	C	15700	pg/L	26.5	402
41464-47-5	46-TeCB		5550	pg/L	28.5	201
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB		19900	pg/L	21.6	201
41464-40-8	49-TeCB	C	41800	pg/L	17.7	402
62796-65-0	50-TeCB	C	10200	pg/L	25.3	402
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		74100	pg/L	20.9	201
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	J	163	pg/L	18.5	201
74338-24-2	55-TeCB		1720	pg/L	61.1	201
41464-43-1	56-TeCB		24900	pg/L	64.4	201
70424-67-8	57-TeCB		315	pg/L	55.5	201
41464-49-7	58-TeCB	J	190	pg/L	60.9	201
74472-33-6	59-TeCB	C	7670	pg/L	15.7	603
33025-41-1	60-TeCB		14400	pg/L	60.3	201
33284-53-6	61-TeCB	C	90200	pg/L	57.9	804
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB		2070	pg/L	53.0	201
52663-58-8	64-TeCB		37000	pg/L	15.5	201

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144008**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 15:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-5**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**994.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		44500	pg/L	55.4	201
73575-53-8	67-TeCB		2140	pg/L	50.0	201
73575-52-7	68-TeCB	J	166	pg/L	54.3	201
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB		294	pg/L	52.5	201
74338-23-1	73-TeCB		1400	pg/L	15.7	201
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB		5390	pg/L	69.1	201
70362-49-1	78-TeCB	U	57.1	pg/L	57.1	201
41464-48-6	79-TeCB		1010	pg/L	51.4	201
33284-52-5	80-TeCB	U	51	pg/L	51.0	201
70362-50-4	81-TeCB		254	pg/L	68.5	201
52663-62-4	82-PeCB		6760	pg/L	43.5	201
60145-20-2	83-PeCB		2100	pg/L	46.8	201
52663-60-2	84-PeCB		13400	pg/L	43.6	201
65510-45-4	85-PeCB	C	8300	pg/L	33.7	603
55312-69-1	86-PeCB	C	35000	pg/L	35.3	1210
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	C	6980	pg/L	40.6	402
73575-57-2	89-PeCB		788	pg/L	41.3	201
68194-07-0	90-PeCB	C	41100	pg/L	34.8	603
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB		6960	pg/L	39.1	201
73575-56-1	93-PeCB	C	457	pg/L	42.4	402
73575-55-0	94-PeCB		367	pg/L	43.4	201
38379-99-6	95-PeCB		34300	pg/L	37.8	201
73575-54-9	96-PeCB		579	pg/L	17.9	201

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144008**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 15:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-5**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**994.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	C	2070	pg/L	39.3	402
38380-01-7	99-PeCB		21800	pg/L	42.4	201
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB		242	pg/L	35.4	201
56558-16-8	104-PeCB	U	18.9	pg/L	18.9	201
32598-14-4	105-PeCB		22600	pg/L	55.3	201
70424-69-0	106-PeCB	U	44.2	pg/L	44.2	201
70424-68-9	107-PeCB		2840	pg/L	42.7	201
70362-41-3	108-PeCB	C	1760	pg/L	46.8	402
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	56600	pg/L	31.4	402
39635-32-0	111-PeCB	U	31.3	pg/L	31.3	201
74472-36-9	112-PeCB	U	26.9	pg/L	26.9	201
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB		1180	pg/L	54.1	201
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		44700	pg/L	49.2	201
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	27.8	pg/L	27.8	201
56558-18-0	121-PeCB	U	31.4	pg/L	31.4	201
76842-07-4	122-PeCB		507	pg/L	49.1	201
65510-44-3	123-PeCB		671	pg/L	51.6	201
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	J	174	pg/L	63.0	201
39635-33-1	127-PeCB	U	57.7	pg/L	57.7	201
38380-07-3	128-HxCB	C	7700	pg/L	28.4	402

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144008**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 15:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-5**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**994.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	47800	pg/L	31.0	603
52663-66-8	130-HxCB		2710	pg/L	35.2	201
61798-70-7	131-HxCB		728	pg/L	38.3	201
38380-05-1	132-HxCB		15100	pg/L	36.6	201
35694-04-3	133-HxCB		441	pg/L	32.6	201
52704-70-8	134-HxCB		2570	pg/L	43.8	201
52744-13-5	135-HxCB	C	9360	pg/L	18.0	402
38411-22-2	136-HxCB		3910	pg/L	13.4	201
35694-06-5	137-HxCB		2590	pg/L	37.1	201
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	C	733	pg/L	31.3	402
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		7090	pg/L	31.0	201
41411-61-4	142-HxCB	U	34	pg/L	34.0	201
68194-15-0	143-HxCB	J	78.3	pg/L	29.5	201
68194-14-9	144-HxCB		1490	pg/L	17.1	201
74472-40-5	145-HxCB	J	19.2	pg/L	14.8	201
51908-16-8	146-HxCB		4020	pg/L	26.1	201
68194-13-8	147-HxCB	C	26900	pg/L	31.3	402
74472-41-6	148-HxCB	J	25.2	pg/L	16.7	201
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	J	38.3	pg/L	13.9	201
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	J	33.2	pg/L	12.9	201
35065-27-1	153-HxCB	C	29400	pg/L	26.2	402
60145-22-4	154-HxCB		219	pg/L	15.3	201
33979-03-2	155-HxCB	U	12.2	pg/L	12.2	201
38380-08-4	156-HxCB	C	6970	pg/L	46.1	402
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB		4760	pg/L	23.1	201
39635-35-3	159-HxCB	U	33	pg/L	33.0	201
41411-62-5	160-HxCB	U	27.9	pg/L	27.9	201

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144008**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 15:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-5**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**994.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	22.9	pg/L	22.9	201
39635-34-2	162-HxCB	J	129	pg/L	35.2	201
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB		2770	pg/L	23.2	201
74472-46-1	165-HxCB	U	28.2	pg/L	28.2	201
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB		2010	pg/L	34.4	201
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	44.6	pg/L	44.6	201
35065-30-6	170-HpCB		7440	pg/L	36.5	201
52663-71-5	171-HpCB	C	2200	pg/L	35.0	402
52663-74-8	172-HpCB		1260	pg/L	35.9	201
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		6850	pg/L	32.7	201
40186-70-7	175-HpCB		281	pg/L	23.3	201
52663-65-7	176-HpCB		758	pg/L	17.9	201
52663-70-4	177-HpCB		3780	pg/L	34.7	201
52663-67-9	178-HpCB		1180	pg/L	24.2	201
52663-64-6	179-HpCB		2380	pg/L	17.8	201
35065-29-3	180-HpCB	C	16300	pg/L	30.2	402
74472-47-2	181-HpCB	J	96.6	pg/L	35.4	201
60145-23-5	182-HpCB	J	41.1	pg/L	23.2	201
52663-69-1	183-HpCB	C	4870	pg/L	33.0	402
74472-48-3	184-HpCB	U	17.6	pg/L	17.6	201
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	19.7	pg/L	19.7	201
52663-68-0	187-HpCB		7910	pg/L	23.6	201
74487-85-7	188-HpCB	J	27.9	pg/L	19.1	201
39635-31-9	189-HpCB		346	pg/L	33.3	201
41411-64-7	190-HpCB		1430	pg/L	27.6	201
74472-50-7	191-HpCB		285	pg/L	26.7	201
74472-51-8	192-HpCB	U	30.5	pg/L	30.5	201

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144008**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 15:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-5**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**994.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		3590	pg/L	35.9	201
52663-78-2	195-OcCB		1160	pg/L	36.7	201
42740-50-1	196-OcCB		1830	pg/L	32.7	201
33091-17-7	197-OcCB	C	601	pg/L	24.7	402
68194-17-2	198-OcCB	C	4770	pg/L	34.2	402
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB		597	pg/L	23.8	201
2136-99-4	202-OcCB		901	pg/L	25.5	201
52663-76-0	203-OcCB		3060	pg/L	33.0	201
74472-52-9	204-OcCB	U	24	pg/L	24.0	201
74472-53-0	205-OcCB	J	163	pg/L	31.0	201
40186-72-9	206-NoCB		2980	pg/L	36.3	201
52663-79-3	207-NoCB		333	pg/L	24.8	201
52663-77-1	208-NoCB		808	pg/L	26.3	201
2051-24-3	209-DeCB		765	pg/L	26.9	201
27323-18-8	Total Mono PCBs		2990	pg/L	67.0	201
25512-42-9	Total Di PCBs		96600	pg/L	67.0	201
25323-68-6	Total Tri PCBs		469000	pg/L	67.0	201
26914-33-0	Total Tetra PCBs		552000	pg/L	67.0	201
25429-29-2	Total Penta PCBs		312000	pg/L	67.0	201
26601-64-9	Total Hexa PCBs		180000	pg/L	67.0	201
28655-71-2	Total Hepta PCBs		57400	pg/L	67.0	201
55722-26-4	Total Octa PCBs		16700	pg/L	67.0	201
53742-07-7	Total Nona PCBs		4120	pg/L	67.0	201
2051-24-3	Total Deca PCB		765	pg/L	67.0	201
1336-36-3	Total PCB Congeners		1690000	pg/L	67.0	201

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		1220	2010	pg/L	60.4	(15%-150%)
13C-3-MoCB		1340	2010	pg/L	66.4	(15%-150%)
13C-4-DiCB		1400	2010	pg/L	69.8	(25%-150%)
13C-15-DiCB		1860	2010	pg/L	92.5	(25%-150%)
13C-19-TrCB		1650	2010	pg/L	82.1	(25%-150%)
13C-37-TrCB		2240	2010	pg/L	111	(25%-150%)
13C-54-TeCB		1540	2010	pg/L	76.7	(25%-150%)
13C-77-TeCB		2350	2010	pg/L	117	(25%-150%)
13C-81-TeCB		2370	2010	pg/L	118	(25%-150%)
13C-104-PeCB		1500	2010	pg/L	74.8	(25%-150%)
13C-105-PeCB		2130	2010	pg/L	106	(25%-150%)
13C-114-PeCB		2050	2010	pg/L	102	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144008**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-6**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 15:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-5**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**994.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		2120	2010	pg/L	105	(25%-150%)
13C-123-PeCB		2180	2010	pg/L	108	(25%-150%)
13C-126-PeCB		2150	2010	pg/L	107	(25%-150%)
13C-155-HxCB		1520	2010	pg/L	75.8	(25%-150%)
13C-156-HxCB	C	3790	4020	pg/L	94.3	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		2010	2010	pg/L	99.8	(25%-150%)
13C-169-HxCB		1900	2010	pg/L	94.7	(25%-150%)
13C-188-HpCB		1820	2010	pg/L	90.7	(25%-150%)
13C-189-HpCB		2090	2010	pg/L	104	(25%-150%)
13C-202-OcCB		1930	2010	pg/L	96.1	(25%-150%)
13C-205-OcCB		2080	2010	pg/L	103	(25%-150%)
13C-206-NoCB		1790	2010	pg/L	89.1	(25%-150%)
13C-208-NoCB		1850	2010	pg/L	92.0	(25%-150%)
13C-209-DeCB		1750	2010	pg/L	87.2	(25%-150%)
13C-28-TrCB		2130	2010	pg/L	106	(30%-135%)
13C-111-PeCB		2080	2010	pg/L	103	(30%-135%)
13C-178-HpCB		1980	2010	pg/L	98.6	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144009**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 16:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-6**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1033.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	21.3	pg/L	21.3	194
2051-61-8	2-MoCB	U	17.8	pg/L	17.8	194
2051-62-9	3-MoCB	U	16.4	pg/L	16.4	194
13029-08-8	4-DiCB	U	151	pg/L	151	194
16605-91-7	5-DiCB	U	89.7	pg/L	89.7	194
25569-80-6	6-DiCB	U	68.9	pg/L	68.9	194
33284-50-3	7-DiCB	U	74.4	pg/L	74.4	194
34883-43-7	8-DiCB		273	pg/L	64.1	194
34883-39-1	9-DiCB	U	77.8	pg/L	77.8	194
33146-45-1	10-DiCB	U	79.8	pg/L	79.8	194
2050-67-1	11-DiCB	J	380	pg/L	75.7	968
2974-92-7	12-DiCB	CU	77.8	pg/L	77.8	387
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	73.2	pg/L	73.2	194
2050-68-2	15-DiCB		255	pg/L	80.1	194
38444-78-9	16-TrCB		217	pg/L	19.0	194
37680-66-3	17-TrCB	J	186	pg/L	16.5	194
37680-65-2	18-TrCB	CJ	365	pg/L	13.3	387
38444-73-4	19-TrCB	J	51.2	pg/L	17.8	194
38444-84-7	20-TrCB	C	771	pg/L	11.7	387
55702-46-0	21-TrCB	C	451	pg/L	11.2	387
38444-85-8	22-TrCB		308	pg/L	12.3	194
55720-44-0	23-TrCB	U	11.9	pg/L	11.9	194
55702-45-9	24-TrCB	U	12	pg/L	12.0	194
55712-37-3	25-TrCB	J	52.5	pg/L	10.3	194
38444-81-4	26-TrCB	CJ	138	pg/L	11.4	387
38444-76-7	27-TrCB	J	32.7	pg/L	11.4	194
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		609	pg/L	10.5	194
38444-77-8	32-TrCB	J	132	pg/L	10.7	194

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144009**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 16:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-6**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1033.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	11.8	pg/L	11.8	194
37680-69-6	35-TrCB	J	53.1	pg/L	15.5	194
38444-87-0	36-TrCB	U	13.9	pg/L	13.9	194
38444-90-5	37-TrCB		370	pg/L	17.3	194
53555-66-1	38-TrCB	U	15.1	pg/L	15.1	194
38444-88-1	39-TrCB	U	15	pg/L	15.0	194
38444-93-8	40-TeCB	C	514	pg/L	23.5	387
52663-59-9	41-TeCB	J	108	pg/L	36.8	194
36559-22-5	42-TeCB		274	pg/L	26.3	194
70362-46-8	43-TeCB	J	33.3	pg/L	31.2	194
41464-39-5	44-TeCB	C	2180	pg/L	24.8	581
70362-45-7	45-TeCB	CJ	132	pg/L	20.0	387
41464-47-5	46-TeCB	J	50.0	pg/L	21.5	194
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	159	pg/L	28.0	194
41464-40-8	49-TeCB	C	1070	pg/L	23.0	387
62796-65-0	50-TeCB	CJ	128	pg/L	19.1	387
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		5520	pg/L	27.0	194
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	14.2	pg/L	14.2	194
74338-24-2	55-TeCB	J	41.0	pg/L	24.4	194
41464-43-1	56-TeCB		849	pg/L	25.7	194
70424-67-8	57-TeCB	J	25.1	pg/L	22.1	194
41464-49-7	58-TeCB	J	26.7	pg/L	24.3	194
74472-33-6	59-TeCB	CJ	86.3	pg/L	20.3	581
33025-41-1	60-TeCB		271	pg/L	24.1	194
33284-53-6	61-TeCB	C	6360	pg/L	23.1	774
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	J	41.6	pg/L	21.2	194
52663-58-8	64-TeCB		1080	pg/L	20.1	194

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144009**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 16:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-6**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1033.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		1850	pg/L	22.1	194
73575-53-8	67-TeCB	J	69.1	pg/L	20.0	194
73575-52-7	68-TeCB	U	21.7	pg/L	21.7	194
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	20.9	pg/L	20.9	194
74338-23-1	73-TeCB	J	58.4	pg/L	20.4	194
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB		1150	pg/L	27.7	194
70362-49-1	78-TeCB	U	22.8	pg/L	22.8	194
41464-48-6	79-TeCB		201	pg/L	20.5	194
33284-52-5	80-TeCB	U	20.4	pg/L	20.4	194
70362-50-4	81-TeCB	J	54.1	pg/L	26.9	194
52663-62-4	82-PeCB		3790	pg/L	21.2	194
60145-20-2	83-PeCB		1260	pg/L	22.8	194
52663-60-2	84-PeCB		6690	pg/L	21.3	194
65510-45-4	85-PeCB	C	5590	pg/L	16.5	581
55312-69-1	86-PeCB	C	23700	pg/L	17.2	1160
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	C	3220	pg/L	19.8	387
73575-57-2	89-PeCB	J	155	pg/L	20.1	194
68194-07-0	90-PeCB	C	33300	pg/L	17.0	581
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB		5250	pg/L	19.1	194
73575-56-1	93-PeCB	CU	20.7	pg/L	20.7	387
73575-55-0	94-PeCB	J	76.1	pg/L	21.2	194
38379-99-6	95-PeCB		19300	pg/L	18.5	194
73575-54-9	96-PeCB	J	89.6	pg/L	14.9	194

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144009**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 16:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-6**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1033.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	C	417	pg/L	19.2	387
38380-01-7	99-PeCB		14700	pg/L	20.7	194
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	J	81.9	pg/L	17.3	194
56558-16-8	104-PeCB	U	16.2	pg/L	16.2	194
32598-14-4	105-PeCB		14900	pg/L	34.8	194
70424-69-0	106-PeCB	U	28.3	pg/L	28.3	194
70424-68-9	107-PeCB		2270	pg/L	27.3	194
70362-41-3	108-PeCB	C	1550	pg/L	29.9	387
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	53000	pg/L	15.3	387
39635-32-0	111-PeCB	U	15.3	pg/L	15.3	194
74472-36-9	112-PeCB	U	13.1	pg/L	13.1	194
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB		424	pg/L	33.3	194
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		37600	pg/L	31.6	194
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	J	82.4	pg/L	13.6	194
56558-18-0	121-PeCB	U	15.3	pg/L	15.3	194
76842-07-4	122-PeCB		348	pg/L	31.4	194
65510-44-3	123-PeCB		522	pg/L	34.0	194
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB		608	pg/L	39.5	194
39635-33-1	127-PeCB	J	74.9	pg/L	29.1	194
38380-07-3	128-HxCB	C	11700	pg/L	34.1	387

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144009**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 16:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-6**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1033.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	C	88200	pg/L	37.2	581
52663-66-8	130-HxCB		4380	pg/L	42.3	194
61798-70-7	131-HxCB		841	pg/L	46.1	194
38380-05-1	132-HxCB		25400	pg/L	44.0	194
35694-04-3	133-HxCB		750	pg/L	39.2	194
52704-70-8	134-HxCB		3760	pg/L	52.7	194
52744-13-5	135-HxCB	C	17900	pg/L	13.9	387
38411-22-2	136-HxCB		6100	pg/L	10.3	194
35694-06-5	137-HxCB		3180	pg/L	44.6	194
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	C	1010	pg/L	37.7	387
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB		14700	pg/L	37.2	194
41411-61-4	142-HxCB	U	40.9	pg/L	40.9	194
68194-15-0	143-HxCB	J	109	pg/L	35.5	194
68194-14-9	144-HxCB		2680	pg/L	13.1	194
74472-40-5	145-HxCB	U	11.4	pg/L	11.4	194
51908-16-8	146-HxCB		8030	pg/L	31.4	194
68194-13-8	147-HxCB	C	47600	pg/L	37.6	387
74472-41-6	148-HxCB	J	49.5	pg/L	13.0	194
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	J	86.9	pg/L	10.7	194
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	J	35.4	pg/L	9.97	194
35065-27-1	153-HxCB	C	60700	pg/L	31.6	387
60145-22-4	154-HxCB		527	pg/L	11.8	194
33979-03-2	155-HxCB	U	9.49	pg/L	9.49	194
38380-08-4	156-HxCB	C	10100	pg/L	40.8	387
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB		8410	pg/L	27.7	194
39635-35-3	159-HxCB	U	29.8	pg/L	29.8	194
41411-62-5	160-HxCB	U	33.5	pg/L	33.5	194

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144009**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 16:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-6**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1033.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	27.5	pg/L	27.5	194
39635-34-2	162-HxCB		277	pg/L	31.7	194
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB		5390	pg/L	27.9	194
74472-46-1	165-HxCB	U	33.9	pg/L	33.9	194
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB		3780	pg/L	32.3	194
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	J	51.0	pg/L	39.1	194
35065-30-6	170-HpCB		22700	pg/L	25.4	194
52663-71-5	171-HpCB	C	6370	pg/L	24.4	387
52663-74-8	172-HpCB		3730	pg/L	25.0	194
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB		18900	pg/L	22.7	194
40186-70-7	175-HpCB		796	pg/L	18.8	194
52663-65-7	176-HpCB		1940	pg/L	14.5	194
52663-70-4	177-HpCB		11400	pg/L	24.2	194
52663-67-9	178-HpCB		3160	pg/L	19.6	194
52663-64-6	179-HpCB		5910	pg/L	14.4	194
35065-29-3	180-HpCB	C	47800	pg/L	21.0	387
74472-47-2	181-HpCB	J	163	pg/L	24.6	194
60145-23-5	182-HpCB	J	148	pg/L	18.7	194
52663-69-1	183-HpCB	C	13300	pg/L	22.9	387
74472-48-3	184-HpCB	J	33.7	pg/L	14.2	194
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	15.9	pg/L	15.9	194
52663-68-0	187-HpCB		21100	pg/L	19.0	194
74487-85-7	188-HpCB	J	64.9	pg/L	14.6	194
39635-31-9	189-HpCB		915	pg/L	22.5	194
41411-64-7	190-HpCB		4480	pg/L	19.2	194
74472-50-7	191-HpCB		851	pg/L	18.6	194
74472-51-8	192-HpCB	U	21.3	pg/L	21.3	194

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144009**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 16:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-6**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1033.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB		7960	pg/L	21.9	194
52663-78-2	195-OcCB		3110	pg/L	22.4	194
42740-50-1	196-OcCB		3970	pg/L	19.3	194
33091-17-7	197-OcCB	C	1100	pg/L	14.6	387
68194-17-2	198-OcCB	C	7790	pg/L	20.2	387
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB		795	pg/L	14.1	194
2136-99-4	202-OcCB		1100	pg/L	15.1	194
52663-76-0	203-OcCB		4990	pg/L	19.5	194
74472-52-9	204-OcCB	U	14.2	pg/L	14.2	194
74472-53-0	205-OcCB		410	pg/L	18.9	194
40186-72-9	206-NoCB		1840	pg/L	25.2	194
52663-79-3	207-NoCB		292	pg/L	15.9	194
52663-77-1	208-NoCB		374	pg/L	15.3	194
2051-24-3	209-DeCB		275	pg/L	16.7	194
27323-18-8	Total Mono PCBs	U	0	pg/L	64.5	194
25512-42-9	Total Di PCBs		908	pg/L	64.5	194
25323-68-6	Total Tri PCBs		3740	pg/L	64.5	194
26914-33-0	Total Tetra PCBs		22300	pg/L	64.5	194
25429-29-2	Total Penta PCBs		229000	pg/L	64.5	194
26601-64-9	Total Hexa PCBs		326000	pg/L	64.5	194
28655-71-2	Total Hepta PCBs		164000	pg/L	64.5	194
55722-26-4	Total Octa PCBs		31200	pg/L	64.5	194
53742-07-7	Total Nona PCBs		2500	pg/L	64.5	194
2051-24-3	Total Deca PCB		275	pg/L	64.5	194
1336-36-3	Total PCB Congeners		780000	pg/L	64.5	194

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		969	1940	pg/L	50.1	(15%-150%)
13C-3-MoCB		1190	1940	pg/L	61.7	(15%-150%)
13C-4-DiCB		1260	1940	pg/L	65.3	(25%-150%)
13C-15-DiCB		1710	1940	pg/L	88.1	(25%-150%)
13C-19-TrCB		1530	1940	pg/L	79.3	(25%-150%)
13C-37-TrCB		1730	1940	pg/L	89.3	(25%-150%)
13C-54-TeCB		1480	1940	pg/L	76.4	(25%-150%)
13C-77-TeCB		2210	1940	pg/L	114	(25%-150%)
13C-81-TeCB		2250	1940	pg/L	116	(25%-150%)
13C-104-PeCB		1400	1940	pg/L	72.1	(25%-150%)
13C-105-PeCB		2040	1940	pg/L	106	(25%-150%)
13C-114-PeCB		2000	1940	pg/L	103	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144009**	**Date Collected:**	**11/22/2016 14:40**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-7**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/10/2016 16:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c08dec16a_6-6**			**Dilution:**	**10**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1033.1 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		2060	1940	pg/L	106	(25%-150%)
13C-123-PeCB		2070	1940	pg/L	107	(25%-150%)
13C-126-PeCB		2100	1940	pg/L	108	(25%-150%)
13C-155-HxCB		1430	1940	pg/L	73.8	(25%-150%)
13C-156-HxCB	C	3680	3870	pg/L	95.1	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1940	1940	pg/L	100	(25%-150%)
13C-169-HxCB		1880	1940	pg/L	97.1	(25%-150%)
13C-188-HpCB		1790	1940	pg/L	92.6	(25%-150%)
13C-189-HpCB		2050	1940	pg/L	106	(25%-150%)
13C-202-OcCB		1870	1940	pg/L	96.5	(25%-150%)
13C-205-OcCB		2000	1940	pg/L	103	(25%-150%)
13C-206-NoCB		1720	1940	pg/L	88.6	(25%-150%)
13C-208-NoCB		1790	1940	pg/L	92.6	(25%-150%)
13C-209-DeCB		1740	1940	pg/L	89.6	(25%-150%)
13C-28-TrCB		1870	1940	pg/L	96.6	(30%-135%)
13C-111-PeCB		1900	1940	pg/L	98.0	(30%-135%)
13C-178-HpCB		1880	1940	pg/L	96.9	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144010**	**Date Collected:**	**11/22/2016 15:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 18:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1022.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	2.21	pg/L	2.21	19.6
2051-61-8	2-MoCB	U	1.88	pg/L	1.88	19.6
2051-62-9	3-MoCB	U	2.46	pg/L	2.46	19.6
13029-08-8	4-DiCB	J	11.4	pg/L	5.75	19.6
16605-91-7	5-DiCB	U	3.15	pg/L	3.15	19.6
25569-80-6	6-DiCB	J	4.56	pg/L	2.44	19.6
33284-50-3	7-DiCB	U	2.68	pg/L	2.68	19.6
34883-43-7	8-DiCB		22.1	pg/L	2.25	19.6
34883-39-1	9-DiCB	U	2.8	pg/L	2.80	19.6
33146-45-1	10-DiCB	U	2.19	pg/L	2.19	19.6
2050-67-1	11-DiCB	J	52.5	pg/L	2.64	97.8
2974-92-7	12-DiCB	CU	2.7	pg/L	2.70	39.1
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	2.56	pg/L	2.56	19.6
2050-68-2	15-DiCB	J	16.8	pg/L	2.68	19.6
38444-78-9	16-TrCB	J	11.7	pg/L	1.70	19.6
37680-66-3	17-TrCB	J	9.93	pg/L	1.58	19.6
37680-65-2	18-TrCB	CJ	22.4	pg/L	1.29	39.1
38444-73-4	19-TrCB	J	4.01	pg/L	2.23	19.6
38444-84-7	20-TrCB	CJ	29.2	pg/L	1.06	39.1
55702-46-0	21-TrCB	CJ	17.1	pg/L	1.02	39.1
38444-85-8	22-TrCB	J	13.3	pg/L	1.13	19.6
55720-44-0	23-TrCB	U	1.06	pg/L	1.06	19.6
55702-45-9	24-TrCB	U	1.17	pg/L	1.17	19.6
55712-37-3	25-TrCB	J	2.05	pg/L	0.958	19.6
38444-81-4	26-TrCB	CJ	4.99	pg/L	1.04	39.1
38444-76-7	27-TrCB	J	1.66	pg/L	1.11	19.6
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		23.9	pg/L	0.978	19.6
38444-77-8	32-TrCB	J	5.42	pg/L	1.02	19.6

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144010**	**Date Collected:**	**11/22/2016 15:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 18:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1022.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.09	pg/L	1.09	19.6
37680-69-6	35-TrCB	J	1.58	pg/L	1.27	19.6
38444-87-0	36-TrCB	U	1.15	pg/L	1.15	19.6
38444-90-5	37-TrCB	J	14.4	pg/L	1.37	19.6
53555-66-1	38-TrCB	U	1.23	pg/L	1.23	19.6
38444-88-1	39-TrCB	U	1.25	pg/L	1.25	19.6
38444-93-8	40-TeCB	CJ	10.1	pg/L	1.31	39.1
52663-59-9	41-TeCB	J	2.70	pg/L	2.03	19.6
36559-22-5	42-TeCB	J	5.22	pg/L	1.47	19.6
70362-46-8	43-TeCB	U	1.82	pg/L	1.82	19.6
41464-39-5	44-TeCB	CJ	21.8	pg/L	1.41	58.7
70362-45-7	45-TeCB	CJ	4.87	pg/L	1.09	39.1
41464-47-5	46-TeCB	U	1.17	pg/L	1.17	19.6
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	4.58	pg/L	1.54	19.6
41464-40-8	49-TeCB	CJ	11.0	pg/L	1.29	39.1
62796-65-0	50-TeCB	CJ	1.96	pg/L	1.06	39.1
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		23.4	pg/L	1.53	19.6
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	1.04	pg/L	1.04	19.6
74338-24-2	55-TeCB	U	1.04	pg/L	1.04	19.6
41464-43-1	56-TeCB	J	9.33	pg/L	1.13	19.6
70424-67-8	57-TeCB	U	.997	pg/L	0.997	19.6
41464-49-7	58-TeCB	U	1.11	pg/L	1.11	19.6
74472-33-6	59-TeCB	CJ	2.09	pg/L	1.13	58.7
33025-41-1	60-TeCB	J	4.73	pg/L	1.08	19.6
33284-53-6	61-TeCB	CJ	28.9	pg/L	1.04	78.2
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	.958	pg/L	0.958	19.6
52663-58-8	64-TeCB	J	8.80	pg/L	1.13	19.6

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144010**	**Date Collected:**	**11/22/2016 15:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 18:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1022.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	13.0	pg/L	1.02	19.6
73575-53-8	67-TeCB	U	.899	pg/L	0.899	19.6
73575-52-7	68-TeCB	U	.978	pg/L	0.978	19.6
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	.958	pg/L	0.958	19.6
74338-23-1	73-TeCB	U	1.13	pg/L	1.13	19.6
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	3.60	pg/L	1.21	19.6
70362-49-1	78-TeCB	U	.978	pg/L	0.978	19.6
41464-48-6	79-TeCB	U	.899	pg/L	0.899	19.6
33284-52-5	80-TeCB	U	.919	pg/L	0.919	19.6
70362-50-4	81-TeCB	U	1.13	pg/L	1.13	19.6
52663-62-4	82-PeCB	J	3.13	pg/L	1.37	19.6
60145-20-2	83-PeCB	U	1.53	pg/L	1.53	19.6
52663-60-2	84-PeCB	J	5.94	pg/L	1.37	19.6
65510-45-4	85-PeCB	CJ	3.30	pg/L	1.06	58.7
55312-69-1	86-PeCB	CJ	14.9	pg/L	1.11	117
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CJ	2.46	pg/L	1.29	39.1
73575-57-2	89-PeCB	U	1.31	pg/L	1.31	19.6
68194-07-0	90-PeCB	CJ	16.4	pg/L	1.11	58.7
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	2.97	pg/L	1.23	19.6
73575-56-1	93-PeCB	CU	1.29	pg/L	1.29	39.1
73575-55-0	94-PeCB	U	1.41	pg/L	1.41	19.6
38379-99-6	95-PeCB	J	14.3	pg/L	1.21	19.6
73575-54-9	96-PeCB	U	.723	pg/L	0.723	19.6

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144010**	**Date Collected:**	**11/22/2016 15:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 18:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1022.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	1.33	pg/L	1.33	39.1
38380-01-7	99-PeCB	J	6.30	pg/L	1.23	19.6
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	1.13	pg/L	1.13	19.6
56558-16-8	104-PeCB	U	.821	pg/L	0.821	19.6
32598-14-4	105-PeCB	J	10.7	pg/L	1.35	19.6
70424-69-0	106-PeCB	U	1.09	pg/L	1.09	19.6
70424-68-9	107-PeCB	J	1.23	pg/L	1.06	19.6
70362-41-3	108-PeCB	CU	1.11	pg/L	1.11	39.1
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	25.2	pg/L	1.02	39.1
39635-32-0	111-PeCB	U	.978	pg/L	0.978	19.6
74472-36-9	112-PeCB	U	.841	pg/L	0.841	19.6
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	1.31	pg/L	1.31	19.6
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	J	19.0	pg/L	1.25	19.6
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	.88	pg/L	0.880	19.6
56558-18-0	121-PeCB	U	.978	pg/L	0.978	19.6
76842-07-4	122-PeCB	U	1.17	pg/L	1.17	19.6
65510-44-3	123-PeCB	U	1.27	pg/L	1.27	19.6
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	1.54	pg/L	1.54	19.6
39635-33-1	127-PeCB	U	1.08	pg/L	1.08	19.6
38380-07-3	128-HxCB	CJ	5.26	pg/L	1.35	39.1

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144010**	**Date Collected:**	**11/22/2016 15:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 18:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1022.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	27.8	pg/L	1.45	58.7
52663-66-8	130-HxCB	J	1.74	pg/L	1.60	19.6
61798-70-7	131-HxCB	U	1.8	pg/L	1.80	19.6
38380-05-1	132-HxCB	J	9.89	pg/L	1.82	19.6
35694-04-3	133-HxCB	U	1.49	pg/L	1.49	19.6
52704-70-8	134-HxCB	U	1.94	pg/L	1.94	19.6
52744-13-5	135-HxCB	CJ	6.37	pg/L	0.880	39.1
38411-22-2	136-HxCB	J	2.42	pg/L	0.626	19.6
35694-06-5	137-HxCB	U	1.74	pg/L	1.74	19.6
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	1.47	pg/L	1.47	39.1
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	4.28	pg/L	1.45	19.6
41411-61-4	142-HxCB	U	1.66	pg/L	1.66	19.6
68194-15-0	143-HxCB	U	1.39	pg/L	1.39	19.6
68194-14-9	144-HxCB	J	1.37	pg/L	0.841	19.6
74472-40-5	145-HxCB	U	.704	pg/L	0.704	19.6
51908-16-8	146-HxCB	J	2.76	pg/L	1.35	19.6
68194-13-8	147-HxCB	CJ	14.9	pg/L	1.41	39.1
74472-41-6	148-HxCB	U	.821	pg/L	0.821	19.6
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.665	pg/L	0.665	19.6
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.606	pg/L	0.606	19.6
35065-27-1	153-HxCB	CJ	15.9	pg/L	1.21	39.1
60145-22-4	154-HxCB	U	.743	pg/L	0.743	19.6
33979-03-2	155-HxCB	U	.626	pg/L	0.626	19.6
38380-08-4	156-HxCB	CJ	4.15	pg/L	1.33	39.1
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	2.15	pg/L	1.06	19.6
39635-35-3	159-HxCB	U	.919	pg/L	0.919	19.6
41411-62-5	160-HxCB	U	1.25	pg/L	1.25	19.6

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144010**	**Date Collected:**	**11/22/2016 15:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 18:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1022.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.08	pg/L	1.08	19.6
39635-34-2	162-HxCB	U	.978	pg/L	0.978	19.6
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	1.35	pg/L	1.06	19.6
74472-46-1	165-HxCB	U	1.27	pg/L	1.27	19.6
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	1.45	pg/L	1.02	19.6
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.25	pg/L	1.25	19.6
35065-30-6	170-HpCB	J	5.46	pg/L	1.21	19.6
52663-71-5	171-HpCB	CJ	2.03	pg/L	1.11	39.1
52663-74-8	172-HpCB	U	1.15	pg/L	1.15	19.6
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	4.93	pg/L	1.06	19.6
40186-70-7	175-HpCB	U	1.02	pg/L	1.02	19.6
52663-65-7	176-HpCB	U	.763	pg/L	0.763	19.6
52663-70-4	177-HpCB	J	2.66	pg/L	1.09	19.6
52663-67-9	178-HpCB	J	1.08	pg/L	1.04	19.6
52663-64-6	179-HpCB	J	1.56	pg/L	0.743	19.6
35065-29-3	180-HpCB	CJ	10.2	pg/L	0.997	39.1
74472-47-2	181-HpCB	U	1.13	pg/L	1.13	19.6
60145-23-5	182-HpCB	U	1.08	pg/L	1.08	19.6
52663-69-1	183-HpCB	CJ	2.80	pg/L	1.04	39.1
74472-48-3	184-HpCB	U	.782	pg/L	0.782	19.6
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.841	pg/L	0.841	19.6
52663-68-0	187-HpCB	J	6.45	pg/L	1.06	19.6
74487-85-7	188-HpCB	U	.821	pg/L	0.821	19.6
39635-31-9	189-HpCB	U	1.15	pg/L	1.15	19.6
41411-64-7	190-HpCB	J	1.37	pg/L	0.939	19.6
74472-50-7	191-HpCB	U	.899	pg/L	0.899	19.6
74472-51-8	192-HpCB	U	1.02	pg/L	1.02	19.6

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144010**	**Date Collected:**	**11/22/2016 15:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 18:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1022.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	2.85	pg/L	1.33	19.6
52663-78-2	195-OcCB	U	1.43	pg/L	1.43	19.6
42740-50-1	196-OcCB	J	1.64	pg/L	1.31	19.6
33091-17-7	197-OcCB	CU	.939	pg/L	0.939	39.1
68194-17-2	198-OcCB	CJ	3.83	pg/L	1.33	39.1
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	.88	pg/L	0.880	19.6
2136-99-4	202-OcCB	U	1.02	pg/L	1.02	19.6
52663-76-0	203-OcCB	J	2.48	pg/L	1.33	19.6
74472-52-9	204-OcCB	U	.919	pg/L	0.919	19.6
74472-53-0	205-OcCB	U	1.15	pg/L	1.15	19.6
40186-72-9	206-NoCB	J	3.01	pg/L	1.99	19.6
52663-79-3	207-NoCB	U	1.25	pg/L	1.25	19.6
52663-77-1	208-NoCB	U	1.35	pg/L	1.35	19.6
2051-24-3	209-DeCB	U	1.97	pg/L	1.97	19.6
27323-18-8	Total Mono PCBs	U	0	pg/L	6.51	19.6
25512-42-9	Total Di PCBs		107	pg/L	6.51	19.6
25323-68-6	Total Tri PCBs		162	pg/L	6.51	19.6
26914-33-0	Total Tetra PCBs		156	pg/L	6.51	19.6
25429-29-2	Total Penta PCBs		126	pg/L	6.51	19.6
26601-64-9	Total Hexa PCBs		102	pg/L	6.51	19.6
28655-71-2	Total Hepta PCBs		38.5	pg/L	6.51	19.6
55722-26-4	Total Octa PCBs	J	10.8	pg/L	6.51	19.6
53742-07-7	Total Nona PCBs	J	3.01	pg/L	6.51	19.6
2051-24-3	Total Deca PCB	U	0	pg/L	6.51	19.6
1336-36-3	Total PCB Congeners		705	pg/L	6.51	19.6

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		956	1960	pg/L	48.9	(15%-150%)
13C-3-MoCB		1070	1960	pg/L	54.8	(15%-150%)
13C-4-DiCB		901	1960	pg/L	46.1	(25%-150%)
13C-15-DiCB		2030	1960	pg/L	104	(25%-150%)
13C-19-TrCB		1330	1960	pg/L	67.9	(25%-150%)
13C-37-TrCB		2030	1960	pg/L	104	(25%-150%)
13C-54-TeCB		1080	1960	pg/L	55.2	(25%-150%)
13C-77-TeCB		2480	1960	pg/L	127	(25%-150%)
13C-81-TeCB		2510	1960	pg/L	128	(25%-150%)
13C-104-PeCB		1100	1960	pg/L	56.4	(25%-150%)
13C-105-PeCB		2010	1960	pg/L	103	(25%-150%)
13C-114-PeCB		1970	1960	pg/L	101	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144010**	**Date Collected:**	**11/22/2016 15:20**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R1**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 18:58**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1022.9 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		2010	1960	pg/L	103	(25%-150%)
13C-123-PeCB		2040	1960	pg/L	104	(25%-150%)
13C-126-PeCB		2060	1960	pg/L	105	(25%-150%)
13C-155-HxCB		1260	1960	pg/L	64.2	(25%-150%)
13C-156-HxCB	C	3470	3910	pg/L	88.8	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1820	1960	pg/L	93.2	(25%-150%)
13C-169-HxCB		1740	1960	pg/L	89.0	(25%-150%)
13C-188-HpCB		1750	1960	pg/L	89.4	(25%-150%)
13C-189-HpCB		2030	1960	pg/L	104	(25%-150%)
13C-202-OcCB		1810	1960	pg/L	92.8	(25%-150%)
13C-205-OcCB		1910	1960	pg/L	97.7	(25%-150%)
13C-206-NoCB		1630	1960	pg/L	83.1	(25%-150%)
13C-208-NoCB		1730	1960	pg/L	88.3	(25%-150%)
13C-209-DeCB		1510	1960	pg/L	77.0	(25%-150%)
13C-28-TrCB		1420	1960	pg/L	72.7	(30%-135%)
13C-111-PeCB		1820	1960	pg/L	93.0	(30%-135%)
13C-178-HpCB		1700	1960	pg/L	87.0	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144011**	**Date Collected:**	**11/22/2016 14:50**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1032.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	5.13	pg/L	1.70	19.4
2051-61-8	2-MoCB	J	2.91	pg/L	1.47	19.4
2051-62-9	3-MoCB	J	4.88	pg/L	1.49	19.4
13029-08-8	4-DiCB		22.6	pg/L	4.44	19.4
16605-91-7	5-DiCB	U	2.36	pg/L	2.36	19.4
25569-80-6	6-DiCB	J	8.68	pg/L	1.84	19.4
33284-50-3	7-DiCB	J	2.56	pg/L	2.01	19.4
34883-43-7	8-DiCB		43.1	pg/L	1.69	19.4
34883-39-1	9-DiCB	J	3.62	pg/L	2.09	19.4
33146-45-1	10-DiCB	U	1.78	pg/L	1.78	19.4
2050-67-1	11-DiCB	J	69.6	pg/L	1.98	96.9
2974-92-7	12-DiCB	CJ	7.59	pg/L	2.03	38.7
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	1.92	pg/L	1.92	19.4
2050-68-2	15-DiCB		31.9	pg/L	2.07	19.4
38444-78-9	16-TrCB		22.7	pg/L	1.14	19.4
37680-66-3	17-TrCB		19.9	pg/L	1.07	19.4
37680-65-2	18-TrCB	C	41.4	pg/L	0.852	38.7
38444-73-4	19-TrCB	J	7.65	pg/L	1.32	19.4
38444-84-7	20-TrCB	C	56.2	pg/L	0.697	38.7
55702-46-0	21-TrCB	CJ	31.0	pg/L	0.678	38.7
38444-85-8	22-TrCB		25.3	pg/L	0.755	19.4
55720-44-0	23-TrCB	U	.697	pg/L	0.697	19.4
55702-45-9	24-TrCB	U	.775	pg/L	0.775	19.4
55712-37-3	25-TrCB	J	3.31	pg/L	0.639	19.4
38444-81-4	26-TrCB	CJ	9.70	pg/L	0.678	38.7
38444-76-7	27-TrCB	J	3.39	pg/L	0.736	19.4
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		45.3	pg/L	0.659	19.4
38444-77-8	32-TrCB	J	10.8	pg/L	0.678	19.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144011**	**Date Collected:**	**11/22/2016 14:50**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1032.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	.736	pg/L	0.736	19.4
37680-69-6	35-TrCB	J	2.50	pg/L	1.30	19.4
38444-87-0	36-TrCB	U	1.16	pg/L	1.16	19.4
38444-90-5	37-TrCB		25.7	pg/L	1.51	19.4
53555-66-1	38-TrCB	U	1.26	pg/L	1.26	19.4
38444-88-1	39-TrCB	U	1.28	pg/L	1.28	19.4
38444-93-8	40-TeCB	CJ	20.5	pg/L	1.30	38.7
52663-59-9	41-TeCB	J	5.21	pg/L	2.00	19.4
36559-22-5	42-TeCB	J	12.3	pg/L	1.43	19.4
70362-46-8	43-TeCB	J	2.15	pg/L	1.78	19.4
41464-39-5	44-TeCB	CJ	44.3	pg/L	1.38	58.1
70362-45-7	45-TeCB	CJ	8.00	pg/L	0.794	38.7
41464-47-5	46-TeCB	J	3.04	pg/L	0.852	19.4
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	10.1	pg/L	1.53	19.4
41464-40-8	49-TeCB	CJ	21.7	pg/L	1.26	38.7
62796-65-0	50-TeCB	CJ	3.87	pg/L	0.755	38.7
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		43.8	pg/L	1.49	19.4
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	.697	pg/L	0.697	19.4
74338-24-2	55-TeCB	U	1.24	pg/L	1.24	19.4
41464-43-1	56-TeCB	J	15.6	pg/L	1.36	19.4
70424-67-8	57-TeCB	U	1.2	pg/L	1.20	19.4
41464-49-7	58-TeCB	U	1.34	pg/L	1.34	19.4
74472-33-6	59-TeCB	CJ	4.26	pg/L	1.12	58.1
33025-41-1	60-TeCB	J	9.07	pg/L	1.30	19.4
33284-53-6	61-TeCB	CJ	56.7	pg/L	1.26	77.5
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	J	1.57	pg/L	1.14	19.4
52663-58-8	64-TeCB		19.4	pg/L	1.12	19.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144011**	**Date Collected:**	**11/22/2016 14:50**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1032.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		26.4	pg/L	1.22	19.4
73575-53-8	67-TeCB	J	1.36	pg/L	1.07	19.4
73575-52-7	68-TeCB	U	1.18	pg/L	1.18	19.4
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.16	pg/L	1.16	19.4
74338-23-1	73-TeCB	U	1.12	pg/L	1.12	19.4
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	5.50	pg/L	1.47	19.4
70362-49-1	78-TeCB	U	1.18	pg/L	1.18	19.4
41464-48-6	79-TeCB	U	1.07	pg/L	1.07	19.4
33284-52-5	80-TeCB	U	1.1	pg/L	1.10	19.4
70362-50-4	81-TeCB	U	1.39	pg/L	1.39	19.4
52663-62-4	82-PeCB	J	6.30	pg/L	1.67	19.4
60145-20-2	83-PeCB	J	2.85	pg/L	1.84	19.4
52663-60-2	84-PeCB	J	11.7	pg/L	1.67	19.4
65510-45-4	85-PeCB	CJ	6.45	pg/L	1.28	58.1
55312-69-1	86-PeCB	CJ	30.1	pg/L	1.36	116
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CJ	6.20	pg/L	1.57	38.7
73575-57-2	89-PeCB	U	1.59	pg/L	1.59	19.4
68194-07-0	90-PeCB	CJ	35.1	pg/L	1.36	58.1
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	6.00	pg/L	1.51	19.4
73575-56-1	93-PeCB	CU	1.59	pg/L	1.59	38.7
73575-55-0	94-PeCB	U	1.72	pg/L	1.72	19.4
38379-99-6	95-PeCB		33.0	pg/L	1.47	19.4
73575-54-9	96-PeCB	U	.736	pg/L	0.736	19.4

Comments:

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144011**	**Date Collected:**	**11/22/2016 14:50**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1032.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	1.61	pg/L	1.61	38.7
38380-01-7	99-PeCB	J	14.9	pg/L	1.49	19.4
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	1.39	pg/L	1.39	19.4
56558-16-8	104-PeCB	U	.814	pg/L	0.814	19.4
32598-14-4	105-PeCB		22.4	pg/L	1.28	19.4
70424-69-0	106-PeCB	U	1.03	pg/L	1.03	19.4
70424-68-9	107-PeCB	J	2.07	pg/L	0.988	19.4
70362-41-3	108-PeCB	CJ	2.07	pg/L	1.05	38.7
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	55.7	pg/L	1.22	38.7
39635-32-0	111-PeCB	U	1.2	pg/L	1.20	19.4
74472-36-9	112-PeCB	U	1.03	pg/L	1.03	19.4
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	1.24	pg/L	1.24	19.4
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		41.6	pg/L	1.14	19.4
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	1.08	pg/L	1.08	19.4
56558-18-0	121-PeCB	U	1.2	pg/L	1.20	19.4
76842-07-4	122-PeCB	U	1.08	pg/L	1.08	19.4
65510-44-3	123-PeCB	U	1.2	pg/L	1.20	19.4
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	1.43	pg/L	1.43	19.4
39635-33-1	127-PeCB	U	1.01	pg/L	1.01	19.4
38380-07-3	128-HxCB	CJ	9.53	pg/L	2.34	38.7

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144011**	**Date Collected:**	**11/22/2016 14:50**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1032.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	55.2	pg/L	2.50	58.1
52663-66-8	130-HxCB	J	3.25	pg/L	2.75	19.4
61798-70-7	131-HxCB	U	3.1	pg/L	3.10	19.4
38380-05-1	132-HxCB		19.4	pg/L	3.12	19.4
35694-04-3	133-HxCB	U	2.56	pg/L	2.56	19.4
52704-70-8	134-HxCB	U	3.33	pg/L	3.33	19.4
52744-13-5	135-HxCB	CJ	12.1	pg/L	0.988	38.7
38411-22-2	136-HxCB	J	4.96	pg/L	0.697	19.4
35694-06-5	137-HxCB	J	3.39	pg/L	2.98	19.4
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	2.52	pg/L	2.52	38.7
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	8.83	pg/L	2.50	19.4
41411-61-4	142-HxCB	U	2.87	pg/L	2.87	19.4
68194-15-0	143-HxCB	U	2.38	pg/L	2.38	19.4
68194-14-9	144-HxCB	J	2.62	pg/L	0.949	19.4
74472-40-5	145-HxCB	U	.794	pg/L	0.794	19.4
51908-16-8	146-HxCB	J	5.60	pg/L	2.32	19.4
68194-13-8	147-HxCB	CJ	31.6	pg/L	2.44	38.7
74472-41-6	148-HxCB	U	.949	pg/L	0.949	19.4
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.736	pg/L	0.736	19.4
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.678	pg/L	0.678	19.4
35065-27-1	153-HxCB	CJ	32.1	pg/L	2.09	38.7
60145-22-4	154-HxCB	U	.833	pg/L	0.833	19.4
33979-03-2	155-HxCB	U	.717	pg/L	0.717	19.4
38380-08-4	156-HxCB	CJ	8.58	pg/L	1.67	38.7
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	5.56	pg/L	1.82	19.4
39635-35-3	159-HxCB	U	1.14	pg/L	1.14	19.4
41411-62-5	160-HxCB	U	2.17	pg/L	2.17	19.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144011**	**Date Collected:**	**11/22/2016 14:50**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1032.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.84	pg/L	1.84	19.4
39635-34-2	162-HxCB	U	1.24	pg/L	1.24	19.4
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	3.60	pg/L	1.82	19.4
74472-46-1	165-HxCB	U	2.19	pg/L	2.19	19.4
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	2.73	pg/L	1.30	19.4
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.53	pg/L	1.53	19.4
35065-30-6	170-HpCB	J	9.61	pg/L	1.16	19.4
52663-71-5	171-HpCB	CJ	2.77	pg/L	1.07	38.7
52663-74-8	172-HpCB	J	2.07	pg/L	1.10	19.4
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	8.68	pg/L	1.01	19.4
40186-70-7	175-HpCB	U	.988	pg/L	0.988	19.4
52663-65-7	176-HpCB	J	1.03	pg/L	0.755	19.4
52663-70-4	177-HpCB	J	5.17	pg/L	1.05	19.4
52663-67-9	178-HpCB	J	1.84	pg/L	1.03	19.4
52663-64-6	179-HpCB	J	3.12	pg/L	0.736	19.4
35065-29-3	180-HpCB	CJ	19.1	pg/L	0.949	38.7
74472-47-2	181-HpCB	U	1.07	pg/L	1.07	19.4
60145-23-5	182-HpCB	U	1.05	pg/L	1.05	19.4
52663-69-1	183-HpCB	CJ	6.04	pg/L	0.988	38.7
74472-48-3	184-HpCB	U	.775	pg/L	0.775	19.4
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.833	pg/L	0.833	19.4
52663-68-0	187-HpCB	J	10.5	pg/L	1.05	19.4
74487-85-7	188-HpCB	U	.833	pg/L	0.833	19.4
39635-31-9	189-HpCB	U	1.05	pg/L	1.05	19.4
41411-64-7	190-HpCB	J	1.90	pg/L	0.891	19.4
74472-50-7	191-HpCB	U	.852	pg/L	0.852	19.4
74472-51-8	192-HpCB	U	.949	pg/L	0.949	19.4

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

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PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144011**	**Date Collected:**	**11/22/2016 14:50**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1032.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	4.98	pg/L	1.20	19.4
52663-78-2	195-OcCB	J	1.49	pg/L	1.30	19.4
42740-50-1	196-OcCB	J	2.52	pg/L	1.22	19.4
33091-17-7	197-OcCB	CU	.872	pg/L	0.872	38.7
68194-17-2	198-OcCB	CJ	6.22	pg/L	1.24	38.7
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	.814	pg/L	0.814	19.4
2136-99-4	202-OcCB	J	1.47	pg/L	0.969	19.4
52663-76-0	203-OcCB	J	3.78	pg/L	1.22	19.4
74472-52-9	204-OcCB	U	.852	pg/L	0.852	19.4
74472-53-0	205-OcCB	U	1.05	pg/L	1.05	19.4
40186-72-9	206-NoCB	J	4.42	pg/L	1.76	19.4
52663-79-3	207-NoCB	U	1.1	pg/L	1.10	19.4
52663-77-1	208-NoCB	J	1.38	pg/L	1.18	19.4
2051-24-3	209-DeCB	J	1.92	pg/L	1.76	19.4
27323-18-8	Total Mono PCBs	J	12.9	pg/L	6.45	19.4
25512-42-9	Total Di PCBs		190	pg/L	6.45	19.4
25323-68-6	Total Tri PCBs		305	pg/L	6.45	19.4
26914-33-0	Total Tetra PCBs		315	pg/L	6.45	19.4
25429-29-2	Total Penta PCBs		276	pg/L	6.45	19.4
26601-64-9	Total Hexa PCBs		209	pg/L	6.45	19.4
28655-71-2	Total Hepta PCBs		71.8	pg/L	6.45	19.4
55722-26-4	Total Octa PCBs		20.5	pg/L	6.45	19.4
53742-07-7	Total Nona PCBs	J	5.79	pg/L	6.45	19.4
2051-24-3	Total Deca PCB	J	1.92	pg/L	6.45	19.4
1336-36-3	Total PCB Congeners		1410	pg/L	6.45	19.4

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		910	1940	pg/L	47.0	(15%-150%)
13C-3-MoCB		1050	1940	pg/L	54.0	(15%-150%)
13C-4-DiCB		854	1940	pg/L	44.1	(25%-150%)
13C-15-DiCB		1880	1940	pg/L	97.1	(25%-150%)
13C-19-TrCB		1240	1940	pg/L	64.0	(25%-150%)
13C-37-TrCB		1880	1940	pg/L	97.3	(25%-150%)
13C-54-TeCB		1020	1940	pg/L	52.6	(25%-150%)
13C-77-TeCB		2240	1940	pg/L	116	(25%-150%)
13C-81-TeCB		2240	1940	pg/L	116	(25%-150%)
13C-104-PeCB		1020	1940	pg/L	52.7	(25%-150%)
13C-105-PeCB		1770	1940	pg/L	91.3	(25%-150%)
13C-114-PeCB		1730	1940	pg/L	89.5	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144011**	**Date Collected:**	**11/22/2016 14:50**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R2**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 20:05**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1032.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1780	1940	pg/L	91.9	(25%-150%)
13C-123-PeCB		1790	1940	pg/L	92.2	(25%-150%)
13C-126-PeCB		1830	1940	pg/L	94.5	(25%-150%)
13C-155-HxCB		1140	1940	pg/L	58.8	(25%-150%)
13C-156-HxCB	C	3150	3870	pg/L	81.2	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1640	1940	pg/L	84.8	(25%-150%)
13C-169-HxCB		1610	1940	pg/L	83.3	(25%-150%)
13C-188-HpCB		1470	1940	pg/L	75.7	(25%-150%)
13C-189-HpCB		1760	1940	pg/L	90.8	(25%-150%)
13C-202-OcCB		1540	1940	pg/L	79.7	(25%-150%)
13C-205-OcCB		1670	1940	pg/L	86.2	(25%-150%)
13C-206-NoCB		1420	1940	pg/L	73.5	(25%-150%)
13C-208-NoCB		1480	1940	pg/L	76.3	(25%-150%)
13C-209-DeCB		1350	1940	pg/L	69.7	(25%-150%)
13C-28-TrCB		1310	1940	pg/L	67.6	(30%-135%)
13C-111-PeCB		1620	1940	pg/L	83.4	(30%-135%)
13C-178-HpCB		1530	1940	pg/L	79.1	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144012**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 21:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-5**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	J	4.37	pg/L	2.67	19.5
2051-61-8	2-MoCB	U	2.24	pg/L	2.24	19.5
2051-62-9	3-MoCB	J	3.98	pg/L	2.19	19.5
13029-08-8	4-DiCB		22.7	pg/L	7.24	19.5
16605-91-7	5-DiCB	U	4.2	pg/L	4.20	19.5
25569-80-6	6-DiCB	J	9.00	pg/L	3.28	19.5
33284-50-3	7-DiCB	U	3.59	pg/L	3.59	19.5
34883-43-7	8-DiCB		39.5	pg/L	3.01	19.5
34883-39-1	9-DiCB	U	3.75	pg/L	3.75	19.5
33146-45-1	10-DiCB	U	2.87	pg/L	2.87	19.5
2050-67-1	11-DiCB	J	44.9	pg/L	3.51	97.6
2974-92-7	12-DiCB	CU	3.61	pg/L	3.61	39.0
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	3.42	pg/L	3.42	19.5
2050-68-2	15-DiCB		26.7	pg/L	3.57	19.5
38444-78-9	16-TrCB	J	19.2	pg/L	1.72	19.5
37680-66-3	17-TrCB	J	18.6	pg/L	1.60	19.5
37680-65-2	18-TrCB	C	40.6	pg/L	1.29	39.0
38444-73-4	19-TrCB	J	7.24	pg/L	2.19	19.5
38444-84-7	20-TrCB	C	53.5	pg/L	1.07	39.0
55702-46-0	21-TrCB	CJ	33.1	pg/L	1.03	39.0
38444-85-8	22-TrCB		24.9	pg/L	1.13	19.5
55720-44-0	23-TrCB	U	1.07	pg/L	1.07	19.5
55702-45-9	24-TrCB	U	1.17	pg/L	1.17	19.5
55712-37-3	25-TrCB	J	3.34	pg/L	0.976	19.5
38444-81-4	26-TrCB	CJ	9.12	pg/L	1.03	39.0
38444-76-7	27-TrCB	J	2.34	pg/L	1.13	19.5
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB		43.5	pg/L	0.996	19.5
38444-77-8	32-TrCB	J	11.9	pg/L	1.02	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144012**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 21:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-5**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.11	pg/L	1.11	19.5
37680-69-6	35-TrCB	J	2.23	pg/L	1.58	19.5
38444-87-0	36-TrCB	U	1.41	pg/L	1.41	19.5
38444-90-5	37-TrCB		21.1	pg/L	1.70	19.5
53555-66-1	38-TrCB	U	1.52	pg/L	1.52	19.5
38444-88-1	39-TrCB	U	1.54	pg/L	1.54	19.5
38444-93-8	40-TeCB	CJ	22.4	pg/L	4.35	39.0
52663-59-9	41-TeCB	U	6.75	pg/L	6.75	19.5
36559-22-5	42-TeCB	J	11.8	pg/L	4.84	19.5
70362-46-8	43-TeCB	U	6.01	pg/L	6.01	19.5
41464-39-5	44-TeCB	CJ	49.2	pg/L	4.63	58.6
70362-45-7	45-TeCB	CJ	7.77	pg/L	1.31	39.0
41464-47-5	46-TeCB	U	2.58	pg/L	2.58	19.5
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	J	11.0	pg/L	5.13	19.5
41464-40-8	49-TeCB	CJ	22.5	pg/L	4.26	39.0
62796-65-0	50-TeCB	CJ	4.14	pg/L	1.27	39.0
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB		48.3	pg/L	5.02	19.5
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	1.23	pg/L	1.23	19.5
74338-24-2	55-TeCB	U	1.72	pg/L	1.72	19.5
41464-43-1	56-TeCB	J	16.7	pg/L	1.85	19.5
70424-67-8	57-TeCB	U	1.62	pg/L	1.62	19.5
41464-49-7	58-TeCB	U	1.82	pg/L	1.82	19.5
74472-33-6	59-TeCB	CJ	4.55	pg/L	3.79	58.6
33025-41-1	60-TeCB	J	9.96	pg/L	1.76	19.5
33284-53-6	61-TeCB	CJ	59.9	pg/L	1.70	78.1
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	1.56	pg/L	1.56	19.5
52663-58-8	64-TeCB	J	19.4	pg/L	3.75	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144012**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 21:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-5**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB		27.6	pg/L	1.66	19.5
73575-53-8	67-TeCB	U	1.46	pg/L	1.46	19.5
73575-52-7	68-TeCB	U	1.6	pg/L	1.60	19.5
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.56	pg/L	1.56	19.5
74338-23-1	73-TeCB	U	3.77	pg/L	3.77	19.5
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	J	4.86	pg/L	1.97	19.5
70362-49-1	78-TeCB	U	1.6	pg/L	1.60	19.5
41464-48-6	79-TeCB	U	1.46	pg/L	1.46	19.5
33284-52-5	80-TeCB	U	1.48	pg/L	1.48	19.5
70362-50-4	81-TeCB	U	1.82	pg/L	1.82	19.5
52663-62-4	82-PeCB	J	5.68	pg/L	1.76	19.5
60145-20-2	83-PeCB	J	3.59	pg/L	1.95	19.5
52663-60-2	84-PeCB	J	9.49	pg/L	1.76	19.5
65510-45-4	85-PeCB	CJ	6.83	pg/L	1.35	58.6
55312-69-1	86-PeCB	CJ	29.0	pg/L	1.44	117
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CJ	4.94	pg/L	1.66	39.0
73575-57-2	89-PeCB	U	1.68	pg/L	1.68	19.5
68194-07-0	90-PeCB	CJ	32.6	pg/L	1.43	58.6
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	J	5.33	pg/L	1.58	19.5
73575-56-1	93-PeCB	CU	1.66	pg/L	1.66	39.0
73575-55-0	94-PeCB	U	1.82	pg/L	1.82	19.5
38379-99-6	95-PeCB		28.0	pg/L	1.56	19.5
73575-54-9	96-PeCB	U	.898	pg/L	0.898	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144012**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 21:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-5**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	1.7	pg/L	1.70	39.0
38380-01-7	99-PeCB	J	15.1	pg/L	1.58	19.5
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	1.46	pg/L	1.46	19.5
56558-16-8	104-PeCB	U	1.05	pg/L	1.05	19.5
32598-14-4	105-PeCB		20.2	pg/L	1.68	19.5
70424-69-0	106-PeCB	U	1.37	pg/L	1.37	19.5
70424-68-9	107-PeCB	J	2.32	pg/L	1.31	19.5
70362-41-3	108-PeCB	CJ	1.46	pg/L	1.39	39.0
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	C	47.5	pg/L	1.29	39.0
39635-32-0	111-PeCB	U	1.25	pg/L	1.25	19.5
74472-36-9	112-PeCB	U	1.09	pg/L	1.09	19.5
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	1.62	pg/L	1.62	19.5
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB		36.8	pg/L	1.52	19.5
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	1.13	pg/L	1.13	19.5
56558-18-0	121-PeCB	U	1.27	pg/L	1.27	19.5
76842-07-4	122-PeCB	U	1.44	pg/L	1.44	19.5
65510-44-3	123-PeCB	U	1.58	pg/L	1.58	19.5
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	1.95	pg/L	1.95	19.5
39635-33-1	127-PeCB	U	1.35	pg/L	1.35	19.5
38380-07-3	128-HxCB	CJ	9.14	pg/L	1.52	39.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144012**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 21:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-5**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	50.5	pg/L	1.62	58.6
52663-66-8	130-HxCB	J	3.18	pg/L	1.80	19.5
61798-70-7	131-HxCB	U	2.01	pg/L	2.01	19.5
38380-05-1	132-HxCB	J	17.2	pg/L	2.03	19.5
35694-04-3	133-HxCB	U	1.66	pg/L	1.66	19.5
52704-70-8	134-HxCB	U	2.17	pg/L	2.17	19.5
52744-13-5	135-HxCB	CJ	10.6	pg/L	1.25	39.0
38411-22-2	136-HxCB	J	3.90	pg/L	0.898	19.5
35694-06-5	137-HxCB	J	2.34	pg/L	1.95	19.5
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	1.64	pg/L	1.64	39.0
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	J	7.65	pg/L	1.62	19.5
41411-61-4	142-HxCB	U	1.87	pg/L	1.87	19.5
68194-15-0	143-HxCB	U	1.56	pg/L	1.56	19.5
68194-14-9	144-HxCB	J	1.97	pg/L	1.21	19.5
74472-40-5	145-HxCB	U	1.02	pg/L	1.02	19.5
51908-16-8	146-HxCB	J	4.51	pg/L	1.52	19.5
68194-13-8	147-HxCB	CJ	27.5	pg/L	1.58	39.0
74472-41-6	148-HxCB	U	1.19	pg/L	1.19	19.5
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.957	pg/L	0.957	19.5
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.878	pg/L	0.878	19.5
35065-27-1	153-HxCB	CJ	30.4	pg/L	1.35	39.0
60145-22-4	154-HxCB	U	1.07	pg/L	1.07	19.5
33979-03-2	155-HxCB	U	.898	pg/L	0.898	19.5
38380-08-4	156-HxCB	CJ	7.13	pg/L	1.46	39.0
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	J	4.86	pg/L	1.19	19.5
39635-35-3	159-HxCB	U	1.02	pg/L	1.02	19.5
41411-62-5	160-HxCB	U	1.41	pg/L	1.41	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144012**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 21:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-5**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	1.19	pg/L	1.19	19.5
39635-34-2	162-HxCB	U	1.09	pg/L	1.09	19.5
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	J	2.91	pg/L	1.19	19.5
74472-46-1	165-HxCB	U	1.43	pg/L	1.43	19.5
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	J	2.13	pg/L	1.11	19.5
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.41	pg/L	1.41	19.5
35065-30-6	170-HpCB	J	10.7	pg/L	1.56	19.5
52663-71-5	171-HpCB	CJ	2.87	pg/L	1.43	39.0
52663-74-8	172-HpCB	J	1.64	pg/L	1.48	19.5
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	10.4	pg/L	1.35	19.5
40186-70-7	175-HpCB	U	1.21	pg/L	1.21	19.5
52663-65-7	176-HpCB	J	1.19	pg/L	0.918	19.5
52663-70-4	177-HpCB	J	6.01	pg/L	1.41	19.5
52663-67-9	178-HpCB	J	1.91	pg/L	1.25	19.5
52663-64-6	179-HpCB	J	3.53	pg/L	0.898	19.5
35065-29-3	180-HpCB	CJ	23.1	pg/L	1.27	39.0
74472-47-2	181-HpCB	U	1.44	pg/L	1.44	19.5
60145-23-5	182-HpCB	U	1.29	pg/L	1.29	19.5
52663-69-1	183-HpCB	CJ	6.97	pg/L	1.33	39.0
74472-48-3	184-HpCB	U	.937	pg/L	0.937	19.5
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	1.02	pg/L	1.02	19.5
52663-68-0	187-HpCB	J	12.1	pg/L	1.27	19.5
74487-85-7	188-HpCB	U	.976	pg/L	0.976	19.5
39635-31-9	189-HpCB	U	1.41	pg/L	1.41	19.5
41411-64-7	190-HpCB	J	2.64	pg/L	1.21	19.5
74472-50-7	191-HpCB	U	1.13	pg/L	1.13	19.5
74472-51-8	192-HpCB	U	1.29	pg/L	1.29	19.5

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144012**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 21:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-5**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	J	8.43	pg/L	1.66	19.5
52663-78-2	195-OcCB	J	3.65	pg/L	1.80	19.5
42740-50-1	196-OcCB	J	4.12	pg/L	1.33	19.5
33091-17-7	197-OcCB	CU	1.37	pg/L	1.37	39.0
68194-17-2	198-OcCB	CJ	9.59	pg/L	1.37	39.0
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	1.05	pg/L	1.05	19.5
2136-99-4	202-OcCB	J	1.80	pg/L	1.03	19.5
52663-76-0	203-OcCB	J	6.75	pg/L	1.35	19.5
74472-52-9	204-OcCB	U	.937	pg/L	0.937	19.5
74472-53-0	205-OcCB	U	1.46	pg/L	1.46	19.5
40186-72-9	206-NoCB	J	7.16	pg/L	2.34	19.5
52663-79-3	207-NoCB	U	1.44	pg/L	1.44	19.5
52663-77-1	208-NoCB	U	1.91	pg/L	1.91	19.5
2051-24-3	209-DeCB	J	3.05	pg/L	1.99	19.5
27323-18-8	Total Mono PCBs	J	8.36	pg/L	6.50	19.5
25512-42-9	Total Di PCBs		143	pg/L	6.50	19.5
25323-68-6	Total Tri PCBs		291	pg/L	6.50	19.5
26914-33-0	Total Tetra PCBs		320	pg/L	6.50	19.5
25429-29-2	Total Penta PCBs		249	pg/L	6.50	19.5
26601-64-9	Total Hexa PCBs		186	pg/L	6.50	19.5
28655-71-2	Total Hepta PCBs		83.1	pg/L	6.50	19.5
55722-26-4	Total Octa PCBs		34.3	pg/L	6.50	19.5
53742-07-7	Total Nona PCBs	J	7.16	pg/L	6.50	19.5
2051-24-3	Total Deca PCB	J	3.05	pg/L	6.50	19.5
1336-36-3	Total PCB Congeners		1320	pg/L	6.50	19.5

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		958	1950	pg/L	49.1	(15%-150%)
13C-3-MoCB		1070	1950	pg/L	54.7	(15%-150%)
13C-4-DiCB		913	1950	pg/L	46.8	(25%-150%)
13C-15-DiCB		1920	1950	pg/L	98.2	(25%-150%)
13C-19-TrCB		1330	1950	pg/L	68.1	(25%-150%)
13C-37-TrCB		2040	1950	pg/L	104	(25%-150%)
13C-54-TeCB		1150	1950	pg/L	58.7	(25%-150%)
13C-77-TeCB		2530	1950	pg/L	129	(25%-150%)
13C-81-TeCB		2570	1950	pg/L	132	(25%-150%)
13C-104-PeCB		1150	1950	pg/L	59.0	(25%-150%)
13C-105-PeCB		2120	1950	pg/L	108	(25%-150%)
13C-114-PeCB		2080	1950	pg/L	107	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**10144012**	**Date Collected:**	**11/22/2016 14:30**	**Matrix:**	**WATER**
Client Sample:	**1668A/8290 Water**	**Date Received:**	**11/29/2016 10:25**		
Client ID:	**B18-F-R3**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/07/2016 21:11**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c07dec16a-5**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1024.5 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		2130	1950	pg/L	109	(25%-150%)
13C-123-PeCB		2160	1950	pg/L	111	(25%-150%)
13C-126-PeCB		2110	1950	pg/L	108	(25%-150%)
13C-155-HxCB		1300	1950	pg/L	66.7	(25%-150%)
13C-156-HxCB	C	3610	3900	pg/L	92.5	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1910	1950	pg/L	97.6	(25%-150%)
13C-169-HxCB		1760	1950	pg/L	90.3	(25%-150%)
13C-188-HpCB		1820	1950	pg/L	93.0	(25%-150%)
13C-189-HpCB		2080	1950	pg/L	106	(25%-150%)
13C-202-OcCB		1900	1950	pg/L	97.3	(25%-150%)
13C-205-OcCB		1980	1950	pg/L	102	(25%-150%)
13C-206-NoCB		1690	1950	pg/L	86.5	(25%-150%)
13C-208-NoCB		1800	1950	pg/L	92.3	(25%-150%)
13C-209-DeCB		1580	1950	pg/L	80.9	(25%-150%)
13C-28-TrCB		1540	1950	pg/L	79.1	(30%-135%)
13C-111-PeCB		1940	1950	pg/L	99.3	(30%-135%)
13C-178-HpCB		1790	1950	pg/L	91.8	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

Quality Control Summary

PCB Congeners

Surrogate Recovery Report

SDG Number: A6K0789

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017490	LCS for batch 33480	13C-1-MoCB		41.8	(15%-140%)
		13C-3-MoCB		46.1	(15%-140%)
		13C-4-DiCB		39.1	(30%-140%)
		13C-15-DiCB		85.6	(30%-140%)
		13C-19-TrCB		59.2	(30%-140%)
		13C-37-TrCB		80.3	(30%-140%)
		13C-54-TeCB		43.8	(30%-140%)
		13C-77-TeCB		90.2	(30%-140%)
		13C-81-TeCB		92.3	(30%-140%)
		13C-104-PeCB		50.2	(30%-140%)
		13C-105-PeCB		79.0	(30%-140%)
		13C-114-PeCB		78.1	(30%-140%)
		13C-118-PeCB		79.7	(30%-140%)
		13C-123-PeCB		80.7	(30%-140%)
		13C-126-PeCB		76.5	(30%-140%)
		13C-155-HxCB		57.5	(30%-140%)
		13C-156-HxCB	C	69.2	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		73.3	(30%-140%)
		13C-169-HxCB		65.5	(30%-140%)
		13C-188-HpCB		72.1	(30%-140%)
		13C-189-HpCB		75.2	(30%-140%)
		13C-202-OcCB		78.2	(30%-140%)
		13C-205-OcCB		81.7	(30%-140%)
		13C-206-NoCB		75.4	(30%-140%)
		13C-208-NoCB		77.8	(30%-140%)
		13C-209-DeCB		71.3	(30%-140%)
		13C-28-TrCB		62.8	(40%-125%)
		13C-111-PeCB		79.1	(40%-125%)
		13C-178-HpCB		77.0	(40%-125%)
12017491	LCSD for batch 33480	13C-1-MoCB		46.3	(15%-140%)
		13C-3-MoCB		50.8	(15%-140%)
		13C-4-DiCB		46.1	(30%-140%)
		13C-15-DiCB		94.6	(30%-140%)
		13C-19-TrCB		66.9	(30%-140%)
		13C-37-TrCB		95.0	(30%-140%)
		13C-54-TeCB		53.4	(30%-140%)
		13C-77-TeCB		110	(30%-140%)
		13C-81-TeCB		114	(30%-140%)
		13C-104-PeCB		58.3	(30%-140%)
		13C-105-PeCB		96.0	(30%-140%)
		13C-114-PeCB		96.3	(30%-140%)
		13C-118-PeCB		97.9	(30%-140%)
		13C-123-PeCB		99.6	(30%-140%)
		13C-126-PeCB		90.0	(30%-140%)
		13C-155-HxCB		67.9	(30%-140%)
		13C-156-HxCB	C	83.2	(30%-140%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		87.9	(30%-140%)
		13C-169-HxCB		76.1	(30%-140%)
		13C-188-HpCB		94.2	(30%-140%)
		13C-189-HpCB		93.1	(30%-140%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6K0789

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
12017491	LCSD for batch 33480	13C-202-OcCB		102	(30%-140%)
		13C-205-OcCB		101	(30%-140%)
		13C-206-NoCB		92.4	(30%-140%)
		13C-208-NoCB		99.1	(30%-140%)
		13C-209-DeCB		87.3	(30%-140%)
		13C-28-TrCB		78.1	(40%-125%)
		13C-111-PeCB		97.8	(40%-125%)
		13C-178-HpCB		94.2	(40%-125%)
12017489	MB for batch 33480	13C-1-MoCB		43.9	(15%-150%)
		13C-3-MoCB		50.3	(15%-150%)
		13C-4-DiCB		44.9	(25%-150%)
		13C-15-DiCB		109	(25%-150%)
		13C-19-TrCB		69.9	(25%-150%)
		13C-37-TrCB		104	(25%-150%)
		13C-54-TeCB		50.5	(25%-150%)
		13C-77-TeCB		121	(25%-150%)
		13C-81-TeCB		123	(25%-150%)
		13C-104-PeCB		60.5	(25%-150%)
		13C-105-PeCB		97.8	(25%-150%)
		13C-114-PeCB		96.0	(25%-150%)
		13C-118-PeCB		98.8	(25%-150%)
		13C-123-PeCB		99.3	(25%-150%)
		13C-126-PeCB		97.8	(25%-150%)
		13C-155-HxCB		71.6	(25%-150%)
		13C-156-HxCB	C	85.6	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		89.2	(25%-150%)
		13C-169-HxCB		83.7	(25%-150%)
		13C-188-HpCB		89.5	(25%-150%)
		13C-189-HpCB		94.2	(25%-150%)
		13C-202-OcCB		98.5	(25%-150%)
		13C-205-OcCB		103	(25%-150%)
		13C-206-NoCB		97.0	(25%-150%)
		13C-208-NoCB		99.3	(25%-150%)
		13C-209-DeCB		95.3	(25%-150%)
		13C-28-TrCB		72.2	(30%-135%)
		13C-111-PeCB		97.6	(30%-135%)
		13C-178-HpCB		95.0	(30%-135%)
10144004	B18-F-2	13C-1-MoCB		44.6	(15%-150%)
		13C-3-MoCB		52.7	(15%-150%)
		13C-4-DiCB		49.6	(25%-150%)
		13C-15-DiCB		103	(25%-150%)
		13C-19-TrCB		75.3	(25%-150%)
		13C-37-TrCB		94.5	(25%-150%)
		13C-54-TeCB		53.2	(25%-150%)
		13C-77-TeCB		106	(25%-150%)
		13C-81-TeCB		107	(25%-150%)
		13C-104-PeCB		67.3	(25%-150%)
		13C-105-PeCB		91.3	(25%-150%)
		13C-114-PeCB		90.0	(25%-150%)
		13C-118-PeCB		92.1	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6K0789

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
10144004	B18-F-2	13C-123-PeCB		93.1	(25%-150%)
		13C-126-PeCB		93.5	(25%-150%)
		13C-155-HxCB		74.7	(25%-150%)
		13C-156-HxCB	C	81.7	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		86.4	(25%-150%)
		13C-169-HxCB		81.5	(25%-150%)
		13C-188-HpCB		91.8	(25%-150%)
		13C-189-HpCB		90.0	(25%-150%)
		13C-202-OcCB		95.9	(25%-150%)
		13C-205-OcCB		93.5	(25%-150%)
		13C-206-NoCB		86.7	(25%-150%)
		13C-208-NoCB		90.1	(25%-150%)
		13C-209-DeCB		91.3	(25%-150%)
		13C-28-TrCB		71.2	(30%-135%)
		13C-111-PeCB		92.1	(30%-135%)
		13C-178-HpCB		91.2	(30%-135%)
10144005	B18-F-3	13C-1-MoCB		47.4	(15%-150%)
		13C-3-MoCB		56.2	(15%-150%)
		13C-4-DiCB		55.0	(25%-150%)
		13C-15-DiCB		102	(25%-150%)
		13C-19-TrCB		79.8	(25%-150%)
		13C-37-TrCB		95.6	(25%-150%)
		13C-54-TeCB		59.7	(25%-150%)
		13C-77-TeCB		109	(25%-150%)
		13C-81-TeCB		111	(25%-150%)
		13C-104-PeCB		72.6	(25%-150%)
		13C-105-PeCB		99.5	(25%-150%)
		13C-114-PeCB		98.7	(25%-150%)
		13C-118-PeCB		100	(25%-150%)
		13C-123-PeCB		99.8	(25%-150%)
		13C-126-PeCB		98.6	(25%-150%)
		13C-155-HxCB		76.0	(25%-150%)
		13C-156-HxCB	C	86.2	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		90.9	(25%-150%)
		13C-169-HxCB		82.8	(25%-150%)
		13C-188-HpCB		97.4	(25%-150%)
		13C-189-HpCB		96.4	(25%-150%)
		13C-202-OcCB		106	(25%-150%)
		13C-205-OcCB		101	(25%-150%)
		13C-206-NoCB		94.8	(25%-150%)
		13C-208-NoCB		101	(25%-150%)
		13C-209-DeCB		95.9	(25%-150%)
		13C-28-TrCB		78.8	(30%-135%)
		13C-111-PeCB		98.0	(30%-135%)
		13C-178-HpCB		97.1	(30%-135%)
10144006	B18-F-4	13C-1-MoCB		46.9	(15%-150%)
		13C-3-MoCB		52.6	(15%-150%)
		13C-4-DiCB		49.0	(25%-150%)
		13C-15-DiCB		110	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6K0789

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
10144006	B18-F-4	13C-19-TrCB		76.1	(25%-150%)
		13C-37-TrCB		99.2	(25%-150%)
		13C-54-TeCB		50.2	(25%-150%)
		13C-77-TeCB		114	(25%-150%)
		13C-81-TeCB		114	(25%-150%)
		13C-104-PeCB		66.1	(25%-150%)
		13C-105-PeCB		93.1	(25%-150%)
		13C-114-PeCB		91.3	(25%-150%)
		13C-118-PeCB		93.4	(25%-150%)
		13C-123-PeCB		94.7	(25%-150%)
		13C-126-PeCB		96.0	(25%-150%)
		13C-155-HxCB		74.7	(25%-150%)
		13C-156-HxCB	C	83.5	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		86.9	(25%-150%)
		13C-169-HxCB		85.1	(25%-150%)
		13C-188-HpCB		87.9	(25%-150%)
		13C-189-HpCB		91.8	(25%-150%)
		13C-202-OcCB		96.8	(25%-150%)
		13C-205-OcCB		97.6	(25%-150%)
		13C-206-NoCB		94.4	(25%-150%)
		13C-208-NoCB		95.8	(25%-150%)
		13C-209-DeCB		95.7	(25%-150%)
		13C-28-TrCB		69.3	(30%-135%)
		13C-111-PeCB		96.0	(30%-135%)
		13C-178-HpCB		98.3	(30%-135%)
10144007	B18-F-5	13C-1-MoCB		32.4	(15%-150%)
		13C-3-MoCB		40.6	(15%-150%)
		13C-4-DiCB		40.9	(25%-150%)
		13C-15-DiCB		84.8	(25%-150%)
		13C-19-TrCB		63.3	(25%-150%)
		13C-37-TrCB		90.3	(25%-150%)
		13C-54-TeCB		48.9	(25%-150%)
		13C-77-TeCB		110	(25%-150%)
		13C-81-TeCB		112	(25%-150%)
		13C-104-PeCB		67.0	(25%-150%)
		13C-105-PeCB		99.6	(25%-150%)
		13C-114-PeCB		98.8	(25%-150%)
		13C-118-PeCB		100	(25%-150%)
		13C-123-PeCB		102	(25%-150%)
		13C-126-PeCB		101	(25%-150%)
		13C-155-HxCB		75.0	(25%-150%)
		13C-156-HxCB	C	88.3	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		92.7	(25%-150%)
		13C-169-HxCB		88.5	(25%-150%)
		13C-188-HpCB		98.1	(25%-150%)
		13C-189-HpCB		98.9	(25%-150%)
		13C-202-OcCB		106	(25%-150%)
		13C-205-OcCB		105	(25%-150%)
		13C-206-NoCB		98.4	(25%-150%)
		13C-208-NoCB		105	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6K0789

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
10144007	B18-F-5	13C-209-DeCB		99.5	(25%-150%)
		13C-28-TrCB		74.7	(30%-135%)
		13C-111-PeCB		99.7	(30%-135%)
		13C-178-HpCB		100	(30%-135%)
10144010	B18-F-R1	13C-1-MoCB		48.9	(15%-150%)
		13C-3-MoCB		54.8	(15%-150%)
		13C-4-DiCB		46.1	(25%-150%)
		13C-15-DiCB		104	(25%-150%)
		13C-19-TrCB		67.9	(25%-150%)
		13C-37-TrCB		104	(25%-150%)
		13C-54-TeCB		55.2	(25%-150%)
		13C-77-TeCB		127	(25%-150%)
		13C-81-TeCB		128	(25%-150%)
		13C-104-PeCB		56.4	(25%-150%)
		13C-105-PeCB		103	(25%-150%)
		13C-114-PeCB		101	(25%-150%)
		13C-118-PeCB		103	(25%-150%)
		13C-123-PeCB		104	(25%-150%)
		13C-126-PeCB		105	(25%-150%)
		13C-155-HxCB		64.2	(25%-150%)
		13C-156-HxCB	C	88.8	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		93.2	(25%-150%)
		13C-169-HxCB		89.0	(25%-150%)
		13C-188-HpCB		89.4	(25%-150%)
		13C-189-HpCB		104	(25%-150%)
		13C-202-OcCB		92.8	(25%-150%)
		13C-205-OcCB		97.7	(25%-150%)
		13C-206-NoCB		83.1	(25%-150%)
		13C-208-NoCB		88.3	(25%-150%)
		13C-209-DeCB		77.0	(25%-150%)
		13C-28-TrCB		72.7	(30%-135%)
		13C-111-PeCB		93.0	(30%-135%)
		13C-178-HpCB		87.0	(30%-135%)
10144011	B18-F-R2	13C-1-MoCB		47.0	(15%-150%)
		13C-3-MoCB		54.0	(15%-150%)
		13C-4-DiCB		44.1	(25%-150%)
		13C-15-DiCB		97.1	(25%-150%)
		13C-19-TrCB		64.0	(25%-150%)
		13C-37-TrCB		97.3	(25%-150%)
		13C-54-TeCB		52.6	(25%-150%)
		13C-77-TeCB		116	(25%-150%)
		13C-81-TeCB		116	(25%-150%)
		13C-104-PeCB		52.7	(25%-150%)
		13C-105-PeCB		91.3	(25%-150%)
		13C-114-PeCB		89.5	(25%-150%)
		13C-118-PeCB		91.9	(25%-150%)
		13C-123-PeCB		92.2	(25%-150%)
		13C-126-PeCB		94.5	(25%-150%)
		13C-155-HxCB		58.8	(25%-150%)
		13C-156-HxCB	C	81.2	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6K0789

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
10144011	B18-F-R2	13C-157-HxCB	C156L		
		13C-167-HxCB		84.8	(25%-150%)
		13C-169-HxCB		83.3	(25%-150%)
		13C-188-HpCB		75.7	(25%-150%)
		13C-189-HpCB		90.8	(25%-150%)
		13C-202-OcCB		79.7	(25%-150%)
		13C-205-OcCB		86.2	(25%-150%)
		13C-206-NoCB		73.5	(25%-150%)
		13C-208-NoCB		76.3	(25%-150%)
		13C-209-DeCB		69.7	(25%-150%)
		13C-28-TrCB		67.6	(30%-135%)
		13C-111-PeCB		83.4	(30%-135%)
		13C-178-HpCB		79.1	(30%-135%)
10144012	B18-F-R3	13C-1-MoCB		49.1	(15%-150%)
		13C-3-MoCB		54.7	(15%-150%)
		13C-4-DiCB		46.8	(25%-150%)
		13C-15-DiCB		98.2	(25%-150%)
		13C-19-TrCB		68.1	(25%-150%)
		13C-37-TrCB		104	(25%-150%)
		13C-54-TeCB		58.7	(25%-150%)
		13C-77-TeCB		129	(25%-150%)
		13C-81-TeCB		132	(25%-150%)
		13C-104-PeCB		59.0	(25%-150%)
		13C-105-PeCB		108	(25%-150%)
		13C-114-PeCB		107	(25%-150%)
		13C-118-PeCB		109	(25%-150%)
		13C-123-PeCB		111	(25%-150%)
		13C-126-PeCB		108	(25%-150%)
		13C-155-HxCB		66.7	(25%-150%)
		13C-156-HxCB	C	92.5	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		97.6	(25%-150%)
		13C-169-HxCB		90.3	(25%-150%)
		13C-188-HpCB		93.0	(25%-150%)
		13C-189-HpCB		106	(25%-150%)
		13C-202-OcCB		97.3	(25%-150%)
		13C-205-OcCB		102	(25%-150%)
		13C-206-NoCB		86.5	(25%-150%)
		13C-208-NoCB		92.3	(25%-150%)
		13C-209-DeCB		80.9	(25%-150%)
		13C-28-TrCB		79.1	(30%-135%)
		13C-111-PeCB		99.3	(30%-135%)
		13C-178-HpCB		91.8	(30%-135%)
10144001	B18-D-CB1	13C-1-MoCB		47.5	(15%-150%)
		13C-3-MoCB		54.2	(15%-150%)
		13C-4-DiCB		50.6	(25%-150%)
		13C-15-DiCB		108	(25%-150%)
		13C-19-TrCB		73.3	(25%-150%)
		13C-37-TrCB		102	(25%-150%)
		13C-54-TeCB		57.4	(25%-150%)
		13C-77-TeCB		123	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6K0789

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)	Acceptance Limits
10144001	B18-D-CB1	13C-81-TeCB		125	(25%-150%)
		13C-104-PeCB		63.0	(25%-150%)
		13C-105-PeCB		102	(25%-150%)
		13C-114-PeCB		101	(25%-150%)
		13C-118-PeCB		103	(25%-150%)
		13C-123-PeCB		104	(25%-150%)
		13C-126-PeCB		104	(25%-150%)
		13C-155-HxCB		66.0	(25%-150%)
		13C-156-HxCB	C	89.5	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		93.4	(25%-150%)
		13C-169-HxCB		90.8	(25%-150%)
		13C-188-HpCB		84.5	(25%-150%)
		13C-189-HpCB		98.2	(25%-150%)
		13C-202-OcCB		92.1	(25%-150%)
		13C-205-OcCB		99.1	(25%-150%)
		13C-206-NoCB		92.4	(25%-150%)
		13C-208-NoCB		92.1	(25%-150%)
		13C-209-DeCB		92.0	(25%-150%)
		13C-28-TrCB		74.8	(30%-135%)
		13C-111-PeCB		96.5	(30%-135%)
		13C-178-HpCB		95.2	(30%-135%)
10144002	B18-D-CB3	13C-1-MoCB		54.9	(15%-150%)
		13C-3-MoCB		63.4	(15%-150%)
		13C-4-DiCB		59.1	(25%-150%)
		13C-15-DiCB		112	(25%-150%)
		13C-19-TrCB		81.2	(25%-150%)
		13C-37-TrCB		105	(25%-150%)
		13C-54-TeCB		64.4	(25%-150%)
		13C-77-TeCB		120	(25%-150%)
		13C-81-TeCB		120	(25%-150%)
		13C-104-PeCB		68.2	(25%-150%)
		13C-105-PeCB		99.7	(25%-150%)
		13C-114-PeCB		98.0	(25%-150%)
		13C-118-PeCB		102	(25%-150%)
		13C-123-PeCB		102	(25%-150%)
		13C-126-PeCB		103	(25%-150%)
		13C-155-HxCB		71.5	(25%-150%)
		13C-156-HxCB	C	90.9	(25%-150%)
		13C-157-HxCB	C156L		
		13C-167-HxCB		95.6	(25%-150%)
		13C-169-HxCB		91.2	(25%-150%)
		13C-188-HpCB		89.6	(25%-150%)
		13C-189-HpCB		102	(25%-150%)
		13C-202-OcCB		91.8	(25%-150%)
		13C-205-OcCB		99.0	(25%-150%)
		13C-206-NoCB		85.7	(25%-150%)
		13C-208-NoCB		87.3	(25%-150%)
		13C-209-DeCB		85.5	(25%-150%)
		13C-28-TrCB		81.7	(30%-135%)
		13C-111-PeCB		94.8	(30%-135%)
		13C-178-HpCB		89.9	(30%-135%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6K0789

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)		Acceptance Limits
10144008	B18-F-6	13C-1-MoCB		60.4	D	(15%-150%)
		13C-3-MoCB		66.4	D	(15%-150%)
		13C-4-DiCB		69.8	D	(25%-150%)
		13C-15-DiCB		92.5	D	(25%-150%)
		13C-19-TrCB		82.1	D	(25%-150%)
		13C-37-TrCB		111	D	(25%-150%)
		13C-54-TeCB		76.7	D	(25%-150%)
		13C-77-TeCB		117	D	(25%-150%)
		13C-81-TeCB		118	D	(25%-150%)
		13C-104-PeCB		74.8	D	(25%-150%)
		13C-105-PeCB		106	D	(25%-150%)
		13C-114-PeCB		102	D	(25%-150%)
		13C-118-PeCB		105	D	(25%-150%)
		13C-123-PeCB		108	D	(25%-150%)
		13C-126-PeCB		107	D	(25%-150%)
		13C-155-HxCB		75.8	D	(25%-150%)
		13C-156-HxCB	C	94.3	D	(25%-150%)
		13C-157-HxCB	C156L			
		13C-167-HxCB		99.8	D	(25%-150%)
		13C-169-HxCB		94.7	D	(25%-150%)
		13C-188-HpCB		90.7	D	(25%-150%)
		13C-189-HpCB		104	D	(25%-150%)
		13C-202-OcCB		96.1	D	(25%-150%)
		13C-205-OcCB		103	D	(25%-150%)
		13C-206-NoCB		89.1	D	(25%-150%)
		13C-208-NoCB		92.0	D	(25%-150%)
		13C-209-DeCB		87.2	D	(25%-150%)
		13C-28-TrCB		106	D	(30%-135%)
		13C-111-PeCB		103	D	(30%-135%)
		13C-178-HpCB		98.6	D	(30%-135%)
10144009	B18-F-7	13C-1-MoCB		50.1	D	(15%-150%)
		13C-3-MoCB		61.7	D	(15%-150%)
		13C-4-DiCB		65.3	D	(25%-150%)
		13C-15-DiCB		88.1	D	(25%-150%)
		13C-19-TrCB		79.3	D	(25%-150%)
		13C-37-TrCB		89.3	D	(25%-150%)
		13C-54-TeCB		76.4	D	(25%-150%)
		13C-77-TeCB		114	D	(25%-150%)
		13C-81-TeCB		116	D	(25%-150%)
		13C-104-PeCB		72.1	D	(25%-150%)
		13C-105-PeCB		106	D	(25%-150%)
		13C-114-PeCB		103	D	(25%-150%)
		13C-118-PeCB		106	D	(25%-150%)
		13C-123-PeCB		107	D	(25%-150%)
		13C-126-PeCB		108	D	(25%-150%)
		13C-155-HxCB		73.8	D	(25%-150%)
		13C-156-HxCB	C	95.1	D	(25%-150%)
		13C-157-HxCB	C156L			
		13C-167-HxCB		100	D	(25%-150%)
		13C-169-HxCB		97.1	D	(25%-150%)
		13C-188-HpCB		92.6	D	(25%-150%)
		13C-189-HpCB		106	D	(25%-150%)

PCB Congeners

Surrogate Recovery Report

SDG Number: A6K0789

Matrix Type: LIQUID

Sample ID	Client ID	Surrogate	QUAL	Recovery (%)		Acceptance Limits
10144009	B18-F-7	13C-202-OcCB		96.5	D	(25%-150%)
		13C-205-OcCB		103	D	(25%-150%)
		13C-206-NoCB		88.6	D	(25%-150%)
		13C-208-NoCB		92.6	D	(25%-150%)
		13C-209-DeCB		89.6	D	(25%-150%)
		13C-28-TrCB		96.6	D	(30%-135%)
		13C-111-PeCB		98.0	D	(30%-135%)
		13C-178-HpCB		96.9	D	(30%-135%)
10144003	B18-F-1	13C-1-MoCB		51.7		(15%-150%)
		13C-3-MoCB		59.9		(15%-150%)
		13C-4-DiCB		57.7		(25%-150%)
		13C-15-DiCB		96.1		(25%-150%)
		13C-19-TrCB		72.9		(25%-150%)
		13C-37-TrCB		85.7		(25%-150%)
		13C-54-TeCB		65.0		(25%-150%)
		13C-77-TeCB		105		(25%-150%)
		13C-81-TeCB		107		(25%-150%)
		13C-104-PeCB		72.3		(25%-150%)
		13C-105-PeCB		90.9		(25%-150%)
		13C-114-PeCB		90.8		(25%-150%)
		13C-118-PeCB		92.5		(25%-150%)
		13C-123-PeCB		93.6		(25%-150%)
		13C-126-PeCB		90.8		(25%-150%)
		13C-155-HxCB		76.2		(25%-150%)
		13C-156-HxCB	C	81.9		(25%-150%)
		13C-157-HxCB	C156L			
		13C-167-HxCB		86.4		(25%-150%)
		13C-169-HxCB		80.1		(25%-150%)
		13C-188-HpCB		96.2		(25%-150%)
		13C-189-HpCB		91.5		(25%-150%)
		13C-202-OcCB		101		(25%-150%)
		13C-205-OcCB		95.0		(25%-150%)
		13C-206-NoCB		92.3		(25%-150%)
		13C-208-NoCB		94.8		(25%-150%)
		13C-209-DeCB		100		(25%-150%)
		13C-28-TrCB		77.5		(30%-135%)
		13C-111-PeCB		92.9		(30%-135%)
		13C-178-HpCB		93.6		(30%-135%)

* Recovery outside Acceptance Limits

Column to be used to flag recovery values

D Sample Diluted

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: A6K0789 **Sample Type:** Laboratory Control Sample

Client ID: LCS for batch 33480 **Matrix:** WATER

Lab Sample ID: 12017490

Instrument: HRP791 **Analysis Date:** 12/06/2016 16:44 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 33480

Batch ID: 33483

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits
2051-60-7	LCS	1-MoCB	500		545	109	50-150
2051-62-9	LCS	3-MoCB	500		617	123	50-150
13029-08-8	LCS	4-DiCB	500		485	97.1	50-150
2050-68-2	LCS	15-DiCB	500		547	109	50-150
38444-73-4	LCS	19-TrCB	500		520	104	50-150
38444-90-5	LCS	37-TrCB	500		498	99.6	50-150
15968-05-5	LCS	54-TeCB	1000		1050	105	50-150
32598-13-3	LCS	77-TeCB	1000		985	98.5	50-150
70362-50-4	LCS	81-TeCB	1000		1170	117	50-150
56558-16-8	LCS	104-PeCB	1000		1100	110	50-150
32598-14-4	LCS	105-PeCB	1000		1270	127	50-150
74472-37-0	LCS	114-PeCB	1000		1120	112	50-150
31508-00-6	LCS	118-PeCB	1000		1030	103	50-150
65510-44-3	LCS	123-PeCB	1000		979	97.9	50-150
57465-28-8	LCS	126-PeCB	1000		1150	115	50-150
33979-03-2	LCS	155-HxCB	1000		989	98.9	50-150
38380-08-4	LCS	156-HxCB	2000	C	2360	118	50-150
69782-90-7	LCS	157-HxCB		C156			
52663-72-6	LCS	167-HxCB	1000		1200	120	50-150
32774-16-6	LCS	169-HxCB	1000		1080	108	50-150
74487-85-7	LCS	188-HpCB	1000		1030	103	50-150
39635-31-9	LCS	189-HpCB	1000		1020	102	50-150
2136-99-4	LCS	202-OcCB	1500		1490	99.1	50-150
74472-53-0	LCS	205-OcCB	1500		1350	90.3	50-150
40186-72-9	LCS	206-NoCB	1500		1490	99	50-150
52663-77-1	LCS	208-NoCB	1500		1580	105	50-150
2051-24-3	LCS	209-DeCB	1500		1460	97	50-150

PCB Congeners

Quality Control Summary
Spike Recovery Report

SDG Number: A6K0789 **Sample Type:** Laboratory Control Sample Duplicate

Client ID: LCSD for batch 33480 **Matrix:** WATER

Lab Sample ID: 12017491

Instrument: HRP791 **Analysis Date:** 12/06/2016 17:50 **Dilution:** 1

Analyst: MJC **Prep Batch ID:** 33480

Batch ID: 33483

CAS No.		Parmname	Amount Added pg/L		Spike Conc. pg/L	Recovery %	Acceptance Limits	RPD %	Acceptance Limits
2051-60-7	LCSD	1-MoCB	500		521	104	50-150	4.47	0-20
2051-62-9	LCSD	3-MoCB	500		605	121	50-150	2.05	0-20
13029-08-8	LCSD	4-DiCB	500		466	93.3	50-150	3.99	0-20
2050-68-2	LCSD	15-DiCB	500		582	116	50-150	6.17	0-20
38444-73-4	LCSD	19-TrCB	500		522	104	50-150	0.238	0-20
38444-90-5	LCSD	37-TrCB	500		491	98.2	50-150	1.42	0-20
15968-05-5	LCSD	54-TeCB	1000		1050	105	50-150	0.363	0-20
32598-13-3	LCSD	77-TeCB	1000		997	99.7	50-150	1.23	0-20
70362-50-4	LCSD	81-TeCB	1000		1170	117	50-150	0.718	0-20
56558-16-8	LCSD	104-PeCB	1000		1100	110	50-150	0.283	0-20
32598-14-4	LCSD	105-PeCB	1000		1280	128	50-150	0.440	0-20
74472-37-0	LCSD	114-PeCB	1000		1130	113	50-150	0.381	0-20
31508-00-6	LCSD	118-PeCB	1000		1050	105	50-150	1.35	0-20
65510-44-3	LCSD	123-PeCB	1000		901	90.1	50-150	8.33	0-20
57465-28-8	LCSD	126-PeCB	1000		1120	112	50-150	1.98	0-20
33979-03-2	LCSD	155-HxCB	1000		990	99	50-150	0.097	0-20
38380-08-4	LCSD	156-HxCB	2000	C	2330	117	50-150	1.11	0-20
69782-90-7	LCSD	157-HxCB		C156					
52663-72-6	LCSD	167-HxCB	1000		1220	122	50-150	1.57	0-20
32774-16-6	LCSD	169-HxCB	1000		1050	105	50-150	2.49	0-20
74487-85-7	LCSD	188-HpCB	1000		1030	103	50-150	0.128	0-20
39635-31-9	LCSD	189-HpCB	1000		1010	101	50-150	1.27	0-20
2136-99-4	LCSD	202-OcCB	1500		1500	99.7	50-150	0.597	0-20
74472-53-0	LCSD	205-OcCB	1500		1330	88.4	50-150	2.09	0-20
40186-72-9	LCSD	206-NoCB	1500		1480	98.9	50-150	0.179	0-20
52663-77-1	LCSD	208-NoCB	1500		1590	106	50-150	0.352	0-20
2051-24-3	LCSD	209-DeCB	1500		1460	97.2	50-150	0.159	0-20

Method Blank Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Matrix:**	**WATER**
Client ID:	**MB for batch 33480**	**Instrument ID:**	**HRP791**	**Data File:**	**c06dec16a-4**
Lab Sample ID:	**12017489**	**Prep Date:**	**05-DEC-16**	**Analyzed:**	**12/06/16 18:56**
Column:					

This method blank applies to the following samples and quality control samples:

	Client Sample ID	Lab Sample ID	File ID	Date Analyzed	Time Analyzed
01	LCS for batch 33480	12017490	c06dec16a-2	12/06/16	1644
02	LCSD for batch 33480	12017491	c06dec16a-3	12/06/16	1750
03	B18-F-2	10144004	c06dec16a_2-6	12/07/16	0929
04	B18-F-3	10144005	c06dec16a_2-7	12/07/16	1035
05	B18-F-4	10144006	c06dec16a_2-8	12/07/16	1141
06	B18-F-5	10144007	c06dec16a_2-9	12/07/16	1247
07	B18-F-R1	10144010	c07dec16a-3	12/07/16	1858
08	B18-F-R2	10144011	c07dec16a-4	12/07/16	2005
09	B18-F-R3	10144012	c07dec16a-5	12/07/16	2111
10	B18-D-CB1	10144001	c08dec16a_6-3	12/10/16	1252
11	B18-D-CB3	10144002	c08dec16a_6-4	12/10/16	1358
12	B18-F-6	10144008	c08dec16a_6-5	12/10/16	1505
13	B18-F-7	10144009	c08dec16a_6-6	12/10/16	1611
14	B18-F-1	10144003	c16dec16a_3-6	12/17/16	1428

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017489**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33480**				
Client ID:	**MB for batch 33480**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/06/2016 18:56**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB	U	3.54	pg/L	3.54	20.0
2051-61-8	2-MoCB	U	3.3	pg/L	3.30	20.0
2051-62-9	3-MoCB	U	2.98	pg/L	2.98	20.0
13029-08-8	4-DiCB	U	11	pg/L	11.0	20.0
16605-91-7	5-DiCB	U	9.88	pg/L	9.88	20.0
25569-80-6	6-DiCB	U	6.86	pg/L	6.86	20.0
33284-50-3	7-DiCB	U	7.5	pg/L	7.50	20.0
34883-43-7	8-DiCB	U	5.92	pg/L	5.92	20.0
34883-39-1	9-DiCB	U	7.88	pg/L	7.88	20.0
33146-45-1	10-DiCB	U	3.6	pg/L	3.60	20.0
2050-67-1	11-DiCB	J	28.7	pg/L	8.10	100
2974-92-7	12-DiCB	CU	8.5	pg/L	8.50	40.0
2974-90-5	13-DiCB	C12				
34883-41-5	14-DiCB	U	7.56	pg/L	7.56	20.0
2050-68-2	15-DiCB	U	6.94	pg/L	6.94	20.0
38444-78-9	16-TrCB	U	1.38	pg/L	1.38	20.0
37680-66-3	17-TrCB	U	1.44	pg/L	1.44	20.0
37680-65-2	18-TrCB	CJ	2.92	pg/L	1.14	40.0
38444-73-4	19-TrCB	U	2.48	pg/L	2.48	20.0
38444-84-7	20-TrCB	CJ	3.76	pg/L	1.04	40.0
55702-46-0	21-TrCB	CJ	1.96	pg/L	1.00	40.0
38444-85-8	22-TrCB	U	2.26	pg/L	2.26	20.0
55720-44-0	23-TrCB	U	1.02	pg/L	1.02	20.0
55702-45-9	24-TrCB	U	1.14	pg/L	1.14	20.0
55712-37-3	25-TrCB	U	.92	pg/L	0.920	20.0
38444-81-4	26-TrCB	CU	1	pg/L	1.00	40.0
38444-76-7	27-TrCB	U	1	pg/L	1.00	20.0
7012-37-5	28-TrCB	C20				
15862-07-4	29-TrCB	C26				
35693-92-6	30-TrCB	C18				
16606-02-3	31-TrCB	J	3.34	pg/L	0.920	20.0
38444-77-8	32-TrCB	U	.9	pg/L	0.900	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017489**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33480**				
Client ID:	**MB for batch 33480**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/06/2016 18:56**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
38444-86-9	33-TrCB	C21				
37680-68-5	34-TrCB	U	1.04	pg/L	1.04	20.0
37680-69-6	35-TrCB	U	1.98	pg/L	1.98	20.0
38444-87-0	36-TrCB	U	1.62	pg/L	1.62	20.0
38444-90-5	37-TrCB	U	1.7	pg/L	1.70	20.0
53555-66-1	38-TrCB	U	1.8	pg/L	1.80	20.0
38444-88-1	39-TrCB	U	1.78	pg/L	1.78	20.0
38444-93-8	40-TeCB	CU	1.6	pg/L	1.60	40.0
52663-59-9	41-TeCB	U	2.82	pg/L	2.82	20.0
36559-22-5	42-TeCB	U	1.9	pg/L	1.90	20.0
70362-46-8	43-TeCB	U	2.08	pg/L	2.08	20.0
41464-39-5	44-TeCB	CJ	3.90	pg/L	1.72	60.0
70362-45-7	45-TeCB	CU	1.36	pg/L	1.36	40.0
41464-47-5	46-TeCB	U	1.16	pg/L	1.16	20.0
2437-79-8	47-TeCB	C44				
70362-47-9	48-TeCB	U	1.96	pg/L	1.96	20.0
41464-40-8	49-TeCB	CJ	2.28	pg/L	1.58	40.0
62796-65-0	50-TeCB	CU	1.04	pg/L	1.04	40.0
68194-04-7	51-TeCB	C45				
35693-99-3	52-TeCB	J	4.24	pg/L	1.78	20.0
41464-41-9	53-TeCB	C50				
15968-05-5	54-TeCB	U	1.26	pg/L	1.26	20.0
74338-24-2	55-TeCB	U	1.34	pg/L	1.34	20.0
41464-43-1	56-TeCB	U	1.54	pg/L	1.54	20.0
70424-67-8	57-TeCB	U	1.28	pg/L	1.28	20.0
41464-49-7	58-TeCB	U	1.42	pg/L	1.42	20.0
74472-33-6	59-TeCB	CU	1.4	pg/L	1.40	60.0
33025-41-1	60-TeCB	U	1.44	pg/L	1.44	20.0
33284-53-6	61-TeCB	CJ	4.92	pg/L	1.32	80.0
54230-22-7	62-TeCB	C59				
74472-34-7	63-TeCB	U	1.2	pg/L	1.20	20.0
52663-58-8	64-TeCB	U	1.4	pg/L	1.40	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017489**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33480**				
Client ID:	**MB for batch 33480**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/06/2016 18:56**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
33284-54-7	65-TeCB	C44				
32598-10-0	66-TeCB	J	1.72	pg/L	1.34	20.0
73575-53-8	67-TeCB	U	1.14	pg/L	1.14	20.0
73575-52-7	68-TeCB	U	1.24	pg/L	1.24	20.0
60233-24-1	69-TeCB	C49				
32598-11-1	70-TeCB	C61				
41464-46-4	71-TeCB	C40				
41464-42-0	72-TeCB	U	1.16	pg/L	1.16	20.0
74338-23-1	73-TeCB	U	1.5	pg/L	1.50	20.0
32690-93-0	74-TeCB	C61				
32598-12-2	75-TeCB	C59				
70362-48-0	76-TeCB	C61				
32598-13-3	77-TeCB	U	1.66	pg/L	1.66	20.0
70362-49-1	78-TeCB	U	1.5	pg/L	1.50	20.0
41464-48-6	79-TeCB	U	1.26	pg/L	1.26	20.0
33284-52-5	80-TeCB	U	1.2	pg/L	1.20	20.0
70362-50-4	81-TeCB	U	1.5	pg/L	1.50	20.0
52663-62-4	82-PeCB	U	1.84	pg/L	1.84	20.0
60145-20-2	83-PeCB	U	2.06	pg/L	2.06	20.0
52663-60-2	84-PeCB	U	1.8	pg/L	1.80	20.0
65510-45-4	85-PeCB	CU	1.46	pg/L	1.46	60.0
55312-69-1	86-PeCB	CU	1.48	pg/L	1.48	120
38380-02-8	87-PeCB	C86				
55215-17-3	88-PeCB	CU	1.66	pg/L	1.66	40.0
73575-57-2	89-PeCB	U	1.7	pg/L	1.70	20.0
68194-07-0	90-PeCB	CJ	2.60	pg/L	1.44	60.0
68194-05-8	91-PeCB	C88				
52663-61-3	92-PeCB	U	1.64	pg/L	1.64	20.0
73575-56-1	93-PeCB	CU	1.68	pg/L	1.68	40.0
73575-55-0	94-PeCB	U	1.78	pg/L	1.78	20.0
38379-99-6	95-PeCB	U	1.56	pg/L	1.56	20.0
73575-54-9	96-PeCB	U	.86	pg/L	0.860	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017489**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33480**				
Client ID:	**MB for batch 33480**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/06/2016 18:56**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
41464-51-1	97-PeCB	C86				
60233-25-2	98-PeCB	CU	1.66	pg/L	1.66	40.0
38380-01-7	99-PeCB	U	1.62	pg/L	1.62	20.0
39485-83-1	100-PeCB	C93				
37680-73-2	101-PeCB	C90				
68194-06-9	102-PeCB	C98				
60145-21-3	103-PeCB	U	1.46	pg/L	1.46	20.0
56558-16-8	104-PeCB	U	1.02	pg/L	1.02	20.0
32598-14-4	105-PeCB	U	1.76	pg/L	1.76	20.0
70424-69-0	106-PeCB	U	1.36	pg/L	1.36	20.0
70424-68-9	107-PeCB	U	1.48	pg/L	1.48	20.0
70362-41-3	108-PeCB	CU	1.52	pg/L	1.52	40.0
74472-35-8	109-PeCB	C86				
38380-03-9	110-PeCB	CJ	2.34	pg/L	1.30	40.0
39635-32-0	111-PeCB	U	1.32	pg/L	1.32	20.0
74472-36-9	112-PeCB	U	1.2	pg/L	1.20	20.0
68194-10-5	113-PeCB	C90				
74472-37-0	114-PeCB	U	1.72	pg/L	1.72	20.0
74472-38-1	115-PeCB	C110				
18259-05-7	116-PeCB	C85				
68194-11-6	117-PeCB	C85				
31508-00-6	118-PeCB	J	1.70	pg/L	1.58	20.0
56558-17-9	119-PeCB	C86				
68194-12-7	120-PeCB	U	1.26	pg/L	1.26	20.0
56558-18-0	121-PeCB	U	1.32	pg/L	1.32	20.0
76842-07-4	122-PeCB	U	1.64	pg/L	1.64	20.0
65510-44-3	123-PeCB	U	1.66	pg/L	1.66	20.0
70424-70-3	124-PeCB	C108				
74472-39-2	125-PeCB	C86				
57465-28-8	126-PeCB	U	2.12	pg/L	2.12	20.0
39635-33-1	127-PeCB	U	1.6	pg/L	1.60	20.0
38380-07-3	128-HxCB	CU	1.16	pg/L	1.16	40.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017489**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33480**				
Client ID:	**MB for batch 33480**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/06/2016 18:56**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
55215-18-4	129-HxCB	CJ	2.52	pg/L	1.26	60.0
52663-66-8	130-HxCB	U	1.42	pg/L	1.42	20.0
61798-70-7	131-HxCB	U	1.52	pg/L	1.52	20.0
38380-05-1	132-HxCB	U	1.42	pg/L	1.42	20.0
35694-04-3	133-HxCB	U	1.28	pg/L	1.28	20.0
52704-70-8	134-HxCB	U	1.82	pg/L	1.82	20.0
52744-13-5	135-HxCB	CU	.92	pg/L	0.920	40.0
38411-22-2	136-HxCB	U	.66	pg/L	0.660	20.0
35694-06-5	137-HxCB	U	1.56	pg/L	1.56	20.0
35065-28-2	138-HxCB	C129				
56030-56-9	139-HxCB	CU	1.2	pg/L	1.20	40.0
59291-64-4	140-HxCB	C139				
52712-04-6	141-HxCB	U	1.24	pg/L	1.24	20.0
41411-61-4	142-HxCB	U	1.32	pg/L	1.32	20.0
68194-15-0	143-HxCB	U	1.12	pg/L	1.12	20.0
68194-14-9	144-HxCB	U	.88	pg/L	0.880	20.0
74472-40-5	145-HxCB	U	.74	pg/L	0.740	20.0
51908-16-8	146-HxCB	U	1.04	pg/L	1.04	20.0
68194-13-8	147-HxCB	CJ	2.04	pg/L	1.20	40.0
74472-41-6	148-HxCB	U	.9	pg/L	0.900	20.0
38380-04-0	149-HxCB	C147				
68194-08-1	150-HxCB	U	.7	pg/L	0.700	20.0
52663-63-5	151-HxCB	C135				
68194-09-2	152-HxCB	U	.62	pg/L	0.620	20.0
35065-27-1	153-HxCB	CJ	1.72	pg/L	1.02	40.0
60145-22-4	154-HxCB	U	.78	pg/L	0.780	20.0
33979-03-2	155-HxCB	U	.66	pg/L	0.660	20.0
38380-08-4	156-HxCB	CJ	1.72	pg/L	1.14	40.0
69782-90-7	157-HxCB	C156				
74472-42-7	158-HxCB	U	.92	pg/L	0.920	20.0
39635-35-3	159-HxCB	U	.8	pg/L	0.800	20.0
41411-62-5	160-HxCB	U	1.12	pg/L	1.12	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017489**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33480**				
Client ID:	**MB for batch 33480**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/06/2016 18:56**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
74472-43-8	161-HxCB	U	.88	pg/L	0.880	20.0
39635-34-2	162-HxCB	U	.82	pg/L	0.820	20.0
74472-44-9	163-HxCB	C129				
74472-45-0	164-HxCB	U	.9	pg/L	0.900	20.0
74472-46-1	165-HxCB	U	1.12	pg/L	1.12	20.0
41411-63-6	166-HxCB	C128				
52663-72-6	167-HxCB	U	.9	pg/L	0.900	20.0
59291-65-5	168-HxCB	C153				
32774-16-6	169-HxCB	U	1.12	pg/L	1.12	20.0
35065-30-6	170-HpCB	U	1.22	pg/L	1.22	20.0
52663-71-5	171-HpCB	CU	1.1	pg/L	1.10	40.0
52663-74-8	172-HpCB	U	1.16	pg/L	1.16	20.0
68194-16-1	173-HpCB	C171				
38411-25-5	174-HpCB	J	1.12	pg/L	1.00	20.0
40186-70-7	175-HpCB	U	.96	pg/L	0.960	20.0
52663-65-7	176-HpCB	U	.7	pg/L	0.700	20.0
52663-70-4	177-HpCB	U	1.08	pg/L	1.08	20.0
52663-67-9	178-HpCB	U	.98	pg/L	0.980	20.0
52663-64-6	179-HpCB	U	.72	pg/L	0.720	20.0
35065-29-3	180-HpCB	CJ	2.04	pg/L	0.980	40.0
74472-47-2	181-HpCB	U	1.12	pg/L	1.12	20.0
60145-23-5	182-HpCB	U	.94	pg/L	0.940	20.0
52663-69-1	183-HpCB	CJ	1.08	pg/L	1.02	40.0
74472-48-3	184-HpCB	U	.7	pg/L	0.700	20.0
52712-05-7	185-HpCB	C183				
74472-49-4	186-HpCB	U	.78	pg/L	0.780	20.0
52663-68-0	187-HpCB	J	1.08	pg/L	0.960	20.0
74487-85-7	188-HpCB	U	.74	pg/L	0.740	20.0
39635-31-9	189-HpCB	U	1.14	pg/L	1.14	20.0
41411-64-7	190-HpCB	U	.94	pg/L	0.940	20.0
74472-50-7	191-HpCB	U	.86	pg/L	0.860	20.0
74472-51-8	192-HpCB	U	1	pg/L	1.00	20.0

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017489**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33480**				
Client ID:	**MB for batch 33480**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/06/2016 18:56**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
69782-91-8	193-HpCB	C180				
35694-08-7	194-OcCB	U	1.26	pg/L	1.26	20.0
52663-78-2	195-OcCB	U	1	pg/L	1.00	20.0
42740-50-1	196-OcCB	U	1.06	pg/L	1.06	20.0
33091-17-7	197-OcCB	CU	.76	pg/L	0.760	40.0
68194-17-2	198-OcCB	CU	1.1	pg/L	1.10	40.0
52663-75-9	199-OcCB	C198				
52663-73-7	200-OcCB	C197				
40186-71-8	201-OcCB	U	.74	pg/L	0.740	20.0
2136-99-4	202-OcCB	U	.8	pg/L	0.800	20.0
52663-76-0	203-OcCB	U	1.06	pg/L	1.06	20.0
74472-52-9	204-OcCB	U	.74	pg/L	0.740	20.0
74472-53-0	205-OcCB	U	.84	pg/L	0.840	20.0
40186-72-9	206-NoCB	U	1.12	pg/L	1.12	20.0
52663-79-3	207-NoCB	U	.72	pg/L	0.720	20.0
52663-77-1	208-NoCB	U	.76	pg/L	0.760	20.0
2051-24-3	209-DeCB	J	1.20	pg/L	1.02	20.0
27323-18-8	Total Mono PCBs	U	0	pg/L	6.66	20.0
25512-42-9	Total Di PCBs		28.7	pg/L	6.66	20.0
25323-68-6	Total Tri PCBs	J	12.0	pg/L	6.66	20.0
26914-33-0	Total Tetra PCBs	J	17.1	pg/L	6.66	20.0
25429-29-2	Total Penta PCBs	J	6.64	pg/L	6.66	20.0
26601-64-9	Total Hexa PCBs	J	8.00	pg/L	6.66	20.0
28655-71-2	Total Hepta PCBs	J	5.32	pg/L	6.66	20.0
55722-26-4	Total Octa PCBs	U	0	pg/L	6.66	20.0
53742-07-7	Total Nona PCBs	U	0	pg/L	6.66	20.0
2051-24-3	Total Deca PCB	J	1.20	pg/L	6.66	20.0
1336-36-3	Total PCB Congeners		78.9	pg/L	6.66	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		878	2000	pg/L	43.9	(15%-150%)
13C-3-MoCB		1010	2000	pg/L	50.3	(15%-150%)
13C-4-DiCB		898	2000	pg/L	44.9	(25%-150%)
13C-15-DiCB		2170	2000	pg/L	109	(25%-150%)
13C-19-TrCB		1400	2000	pg/L	69.9	(25%-150%)
13C-37-TrCB		2080	2000	pg/L	104	(25%-150%)
13C-54-TeCB		1010	2000	pg/L	50.5	(25%-150%)
13C-77-TeCB		2420	2000	pg/L	121	(25%-150%)
13C-81-TeCB		2450	2000	pg/L	123	(25%-150%)
13C-104-PeCB		1210	2000	pg/L	60.5	(25%-150%)
13C-105-PeCB		1960	2000	pg/L	97.8	(25%-150%)
13C-114-PeCB		1920	2000	pg/L	96.0	(25%-150%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017489**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33480**				
Client ID:	**MB for batch 33480**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/06/2016 18:56**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a-4**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-118-PeCB		1980	2000	pg/L	98.8	(25%-150%)
13C-123-PeCB		1990	2000	pg/L	99.3	(25%-150%)
13C-126-PeCB		1960	2000	pg/L	97.8	(25%-150%)
13C-155-HxCB		1430	2000	pg/L	71.6	(25%-150%)
13C-156-HxCB	C	3420	4000	pg/L	85.6	(25%-150%)
13C-157-HxCB	C156L					
13C-167-HxCB		1780	2000	pg/L	89.2	(25%-150%)
13C-169-HxCB		1670	2000	pg/L	83.7	(25%-150%)
13C-188-HpCB		1790	2000	pg/L	89.5	(25%-150%)
13C-189-HpCB		1880	2000	pg/L	94.2	(25%-150%)
13C-202-OcCB		1970	2000	pg/L	98.5	(25%-150%)
13C-205-OcCB		2060	2000	pg/L	103	(25%-150%)
13C-206-NoCB		1940	2000	pg/L	97.0	(25%-150%)
13C-208-NoCB		1990	2000	pg/L	99.3	(25%-150%)
13C-209-DeCB		1910	2000	pg/L	95.3	(25%-150%)
13C-28-TrCB		1440	2000	pg/L	72.2	(30%-135%)
13C-111-PeCB		1950	2000	pg/L	97.6	(30%-135%)
13C-178-HpCB		1900	2000	pg/L	95.0	(30%-135%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

J Value is estimated

U Analyte was analyzed for, but not detected above the specified detection limit.

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017490**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33480**				
Client ID:	**LCS for batch 33480**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/06/2016 16:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a-2**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		545	pg/L	3.62	20.0
2051-62-9	3-MoCB		617	pg/L	3.28	20.0
13029-08-8	4-DiCB		485	pg/L	7.44	20.0
2050-68-2	15-DiCB		547	pg/L	6.12	20.0
38444-73-4	19-TrCB		520	pg/L	3.88	20.0
38444-90-5	37-TrCB		498	pg/L	8.54	20.0
15968-05-5	54-TeCB		1050	pg/L	1.52	20.0
32598-13-3	77-TeCB		985	pg/L	6.02	20.0
70362-50-4	81-TeCB		1170	pg/L	5.72	20.0
56558-16-8	104-PeCB		1100	pg/L	1.16	20.0
32598-14-4	105-PeCB		1270	pg/L	9.28	20.0
74472-37-0	114-PeCB		1120	pg/L	8.74	20.0
31508-00-6	118-PeCB		1030	pg/L	8.32	20.0
65510-44-3	123-PeCB		979	pg/L	8.48	20.0
57465-28-8	126-PeCB		1150	pg/L	11.8	20.0
33979-03-2	155-HxCB		989	pg/L	0.900	20.0
38380-08-4	156-HxCB	C	2360	pg/L	7.76	40.0
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1200	pg/L	5.98	20.0
32774-16-6	169-HxCB		1080	pg/L	8.22	20.0
74487-85-7	188-HpCB		1030	pg/L	1.08	20.0
39635-31-9	189-HpCB		1020	pg/L	3.14	20.0
2136-99-4	202-OcCB		1490	pg/L	1.44	20.0
74472-53-0	205-OcCB		1350	pg/L	2.58	20.0
40186-72-9	206-NoCB		1490	pg/L	2.20	20.0
52663-77-1	208-NoCB		1580	pg/L	1.48	20.0
2051-24-3	209-DeCB		1460	pg/L	1.14	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		837	2000	pg/L	41.8	(15%-140%)
13C-3-MoCB		921	2000	pg/L	46.1	(15%-140%)
13C-4-DiCB		781	2000	pg/L	39.1	(30%-140%)
13C-15-DiCB		1710	2000	pg/L	85.6	(30%-140%)
13C-19-TrCB		1180	2000	pg/L	59.2	(30%-140%)
13C-37-TrCB		1610	2000	pg/L	80.3	(30%-140%)
13C-54-TeCB		875	2000	pg/L	43.8	(30%-140%)
13C-77-TeCB		1800	2000	pg/L	90.2	(30%-140%)
13C-81-TeCB		1850	2000	pg/L	92.3	(30%-140%)
13C-104-PeCB		1000	2000	pg/L	50.2	(30%-140%)
13C-105-PeCB		1580	2000	pg/L	79.0	(30%-140%)
13C-114-PeCB		1560	2000	pg/L	78.1	(30%-140%)
13C-118-PeCB		1590	2000	pg/L	79.7	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017490**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33480**				
Client ID:	**LCS for batch 33480**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/06/2016 16:44**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a-2**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		1610	2000	pg/L	80.7	(30%-140%)
13C-126-PeCB		1530	2000	pg/L	76.5	(30%-140%)
13C-155-HxCB		1150	2000	pg/L	57.5	(30%-140%)
13C-156-HxCB	C	2770	4000	pg/L	69.2	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		1470	2000	pg/L	73.3	(30%-140%)
13C-169-HxCB		1310	2000	pg/L	65.5	(30%-140%)
13C-188-HpCB		1440	2000	pg/L	72.1	(30%-140%)
13C-189-HpCB		1500	2000	pg/L	75.2	(30%-140%)
13C-202-OcCB		1560	2000	pg/L	78.2	(30%-140%)
13C-205-OcCB		1630	2000	pg/L	81.7	(30%-140%)
13C-206-NoCB		1510	2000	pg/L	75.4	(30%-140%)
13C-208-NoCB		1560	2000	pg/L	77.8	(30%-140%)
13C-209-DeCB		1430	2000	pg/L	71.3	(30%-140%)
13C-28-TrCB		1260	2000	pg/L	62.8	(40%-125%)
13C-111-PeCB		1580	2000	pg/L	79.1	(40%-125%)
13C-178-HpCB		1540	2000	pg/L	77.0	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017491**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33480**				
Client ID:	**LCSD for batch 33480**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/06/2016 17:50**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL
2051-60-7	1-MoCB		521	pg/L	6.68	20.0
2051-62-9	3-MoCB		605	pg/L	6.36	20.0
13029-08-8	4-DiCB		466	pg/L	16.0	20.0
2050-68-2	15-DiCB		582	pg/L	11.4	20.0
38444-73-4	19-TrCB		522	pg/L	3.86	20.0
38444-90-5	37-TrCB		491	pg/L	3.48	20.0
15968-05-5	54-TeCB		1050	pg/L	2.16	20.0
32598-13-3	77-TeCB		997	pg/L	6.84	20.0
70362-50-4	81-TeCB		1170	pg/L	6.32	20.0
56558-16-8	104-PeCB		1100	pg/L	1.62	20.0
32598-14-4	105-PeCB		1280	pg/L	9.72	20.0
74472-37-0	114-PeCB		1130	pg/L	9.40	20.0
31508-00-6	118-PeCB		1050	pg/L	8.78	20.0
65510-44-3	123-PeCB		901	pg/L	9.08	20.0
57465-28-8	126-PeCB		1120	pg/L	12.8	20.0
33979-03-2	155-HxCB		990	pg/L	1.04	20.0
38380-08-4	156-HxCB	C	2330	pg/L	8.36	40.0
69782-90-7	157-HxCB	C156				
52663-72-6	167-HxCB		1220	pg/L	6.56	20.0
32774-16-6	169-HxCB		1050	pg/L	9.38	20.0
74487-85-7	188-HpCB		1030	pg/L	1.46	20.0
39635-31-9	189-HpCB		1010	pg/L	5.48	20.0
2136-99-4	202-OcCB		1500	pg/L	1.70	20.0
74472-53-0	205-OcCB		1330	pg/L	3.04	20.0
40186-72-9	206-NoCB		1480	pg/L	2.96	20.0
52663-77-1	208-NoCB		1590	pg/L	1.94	20.0
2051-24-3	209-DeCB		1460	pg/L	1.72	20.0

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-1-MoCB		925	2000	pg/L	46.3	(15%-140%)
13C-3-MoCB		1020	2000	pg/L	50.8	(15%-140%)
13C-4-DiCB		922	2000	pg/L	46.1	(30%-140%)
13C-15-DiCB		1890	2000	pg/L	94.6	(30%-140%)
13C-19-TrCB		1340	2000	pg/L	66.9	(30%-140%)
13C-37-TrCB		1900	2000	pg/L	95.0	(30%-140%)
13C-54-TeCB		1070	2000	pg/L	53.4	(30%-140%)
13C-77-TeCB		2200	2000	pg/L	110	(30%-140%)
13C-81-TeCB		2280	2000	pg/L	114	(30%-140%)
13C-104-PeCB		1170	2000	pg/L	58.3	(30%-140%)
13C-105-PeCB		1920	2000	pg/L	96.0	(30%-140%)
13C-114-PeCB		1930	2000	pg/L	96.3	(30%-140%)
13C-118-PeCB		1960	2000	pg/L	97.9	(30%-140%)

PCB Congeners
Certificate of Analysis
Sample Summary

SDG Number:	**A6K0789**	**Client:**	**APEX001**	**Project:**	**APEX00216**
Lab Sample ID:	**12017491**			**Matrix:**	**WATER**
Client Sample:	**QC for batch 33480**				
Client ID:	**LCSD for batch 33480**			**Prep Basis:**	**As Received**
Batch ID:	**33483**	**Method:**	**EPA Method 1668A**		
Run Date:	**12/06/2016 17:50**	**Analyst:**	**MJC**	**Instrument:**	**HRP791**
Data File:	**c06dec16a-3**			**Dilution:**	**1**
Prep Batch:	**33480**	**Prep Method:**	**SW846 3520C**	**Prep SOP Ref:**	**CF-OA-E-001**
Prep Date:	**05-DEC-16**	**Prep Aliquot:**	**1000 mL**		

CAS No.	Parmname	Qual	Result	Units	EDL	PQL

Surrogate/Tracer recovery	Qual	Result	Nominal	Units	Recovery%	Acceptable Limits
13C-123-PeCB		1990	2000	pg/L	99.6	(30%-140%)
13C-126-PeCB		1800	2000	pg/L	90.0	(30%-140%)
13C-155-HxCB		1360	2000	pg/L	67.9	(30%-140%)
13C-156-HxCB	C	3330	4000	pg/L	83.2	(30%-140%)
13C-157-HxCB	C156L					
13C-167-HxCB		1760	2000	pg/L	87.9	(30%-140%)
13C-169-HxCB		1520	2000	pg/L	76.1	(30%-140%)
13C-188-HpCB		1880	2000	pg/L	94.2	(30%-140%)
13C-189-HpCB		1860	2000	pg/L	93.1	(30%-140%)
13C-202-OcCB		2040	2000	pg/L	102	(30%-140%)
13C-205-OcCB		2020	2000	pg/L	101	(30%-140%)
13C-206-NoCB		1850	2000	pg/L	92.4	(30%-140%)
13C-208-NoCB		1980	2000	pg/L	99.1	(30%-140%)
13C-209-DeCB		1750	2000	pg/L	87.3	(30%-140%)
13C-28-TrCB		1560	2000	pg/L	78.1	(40%-125%)
13C-111-PeCB		1960	2000	pg/L	97.8	(40%-125%)
13C-178-HpCB		1880	2000	pg/L	94.2	(40%-125%)

Comments:

C Congener has coeluters. When Cxxx, refer to congener number xxx for data

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WORK ORDER NUMBER: 16-11-2298

The difference is service

AIR | SOIL | WATER | MARINE CHEMISTRY

Analytical Report For

Client: APEX Laboratories, LLC

Client Project Name: A6K0789

Attention: Philip Nerenberg
12232 SW Garden Place
Portland, OR 97223-8246

Approved for release on 12/06/2016 by:
Lori Thompson
Project Manager

ResultLink

Email your PM

Eurofins Calscience, Inc. (Calscience) certifies that the test results provided in this report meet all NELAC requirements for parameters for which accreditation is required or available. Any exceptions to NELAC requirements are noted in the case narrative. The original report of subcontracted analyses, if any, is attached to this report. The results in this report are limited to the sample(s) tested and any reproduction thereof must be made in its entirety. The client or recipient of this report is specifically prohibited from making material changes to said report and, to the extent that such changes are made, Calscience is not responsible, legally or otherwise. The client or recipient agrees to indemnify Calscience for any defense to any litigation which may arise.

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Work Order Number: 16-11-2298

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Work Order Narrative

Work Order: 16-11-2298 Page 1 of 1

Condition Upon Receipt:

Samples were received under Chain-of-Custody (COC) on 11/28/16. They were assigned to Work Order 16-11-2298.

Unless otherwise noted on the Sample Receiving forms all samples were received in good condition and within the recommended EPA temperature criteria for the methods noted on the COC. The COC and Sample Receiving Documents are integral elements of the analytical report and are presented at the back of the report.

Holding Times:

All samples were analyzed within prescribed holding times (HT) and/or in accordance with the Calscience Sample Acceptance Policy unless otherwise noted in the analytical report and/or comprehensive case narrative, if required.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

Quality Control:

All quality control parameters (QC) were within established control limits except where noted in the QC summary forms or described further within this report.

Subcontractor Information:

Unless otherwise noted below (or on the subcontract form), no samples were subcontracted.

Additional Comments:

Air - Sorbent-extracted air methods (EPA TO-4A, EPA TO-10, EPA TO-13A, EPA TO-17): Analytical results are converted from mass/sample basis to mass/volume basis using client-supplied air volumes.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are always reported on a wet weight basis.

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Sample Summary

Client:	APEX Laboratories, LLC 12232 SW Garden Place Portland, OR 97223-8246	Work Order:	16-11-2298
		Project Name:	A6K0789
		PO Number:	
		Date/Time Received:	11/28/16 07:34
		Number of Containers:	12
Attn:	Philip Nerenberg		

Sample Identification	Lab Number	Collection Date and Time	Number of Containers	Matrix
B18-D-CB1	16-11-2298-1	11/22/16 14:15	1	Aqueous
B18-D-CB3	16-11-2298-2	11/22/16 14:25	1	Aqueous
B18-F-1	16-11-2298-3	11/22/16 14:30	1	Aqueous
B18-F-2	16-11-2298-4	11/22/16 16:00	1	Aqueous
B18-F-3	16-11-2298-5	11/22/16 15:10	1	Aqueous
B18-F-4	16-11-2298-6	11/22/16 14:55	1	Aqueous
B18-F-5	16-11-2298-7	11/22/16 14:58	1	Aqueous
B18-F-6	16-11-2298-8	11/22/16 14:40	1	Aqueous
B18-F-7	16-11-2298-9	11/22/16 14:40	1	Aqueous
B18-F-R1	16-11-2298-10	11/22/16 15:20	1	Aqueous
B18-F-R2	16-11-2298-11	11/22/16 14:50	1	Aqueous
B18-F-R3	16-11-2298-12	11/22/16 14:30	1	Aqueous

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Analytical Report

APEX Laboratories, LLC
12232 SW Garden Place
Portland, OR 97223-8246

Project: A6K0789

Date Received: 11/28/16
Work Order: 16-11-2298
Preparation: EPA 3510C
Method: Organotins by Krone et al.
Units: ng/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B18-D-CB1	**16-11-2298-1-A**	**11/22/16 14:15**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 12:08**	**161129L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	5.1	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	18	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	101	19-121	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B18-D-CB3	**16-11-2298-2-A**	**11/22/16 14:25**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 12:23**	**161129L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	98	19-121	

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B18-F-1	**16-11-2298-3-A**	**11/22/16 14:30**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 12:39**	**161129L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	94	19-121	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

APEX Laboratories, LLC
12232 SW Garden Place
Portland, OR 97223-8246

Project: A6K0789

Date Received: 11/28/16
Work Order: 16-11-2298
Preparation: EPA 3510C
Method: Organotins by Krone et al.
Units: ng/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B18-F-2	**16-11-2298-4-A**	**11/22/16 16:00**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 12:55**	**161129L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	98	19-121	

B18-F-3	**16-11-2298-5-A**	**11/22/16 15:10**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 13:10**	**161129L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.8	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	97	19-121	

B18-F-4	**16-11-2298-6-A**	**11/22/16 14:55**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 13:26**	**161129L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	101	19-121	

RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

APEX Laboratories, LLC
12232 SW Garden Place
Portland, OR 97223-8246

Project: A6K0789

Date Received: 11/28/16
Work Order: 16-11-2298
Preparation: EPA 3510C
Method: Organotins by Krone et al.
Units: ng/L

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B18-F-5	**16-11-2298-7-A**	**11/22/16 14:58**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 13:42**	**161129L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.8	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	90	19-121	

B18-F-6	**16-11-2298-8-A**	**11/22/16 14:40**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 13:57**	**161129L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	91	19-121	

B18-F-7	**16-11-2298-9-A**	**11/22/16 14:40**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 14:13**	**161129L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	93	19-121	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

APEX Laboratories, LLC
12232 SW Garden Place
Portland, OR 97223-8246

Date Received: 11/28/16
Work Order: 16-11-2298
Preparation: EPA 3510C
Method: Organotins by Krone et al.
Units: ng/L

Project: A6K0789

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
B18-F-R1	**16-11-2298-10-A**	**11/22/16 15:20**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 14:29**	**161129L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	97	19-121	

B18-F-R2	**16-11-2298-11-A**	**11/22/16 14:50**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 14:45**	**161129L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.8	1.00	
Tributyltin	3.5	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	97	19-121	

B18-F-R3	**16-11-2298-12-A**	**11/22/16 14:30**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 15:00**	**161129L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.7	1.00	
Monobutyltin	ND	50	2.3	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	3.4	50	1.3	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	89	19-121	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Analytical Report

APEX Laboratories, LLC
12232 SW Garden Place
Portland, OR 97223-8246

Date Received: 11/28/16
Work Order: 16-11-2298
Preparation: EPA 3510C
Method: Organotins by Krone et al.
Units: ng/L

Project: A6K0789

Client Sample Number	Lab Sample Number	Date/Time Collected	Matrix	Instrument	Date Prepared	Date/Time Analyzed	QC Batch ID
Method Blank	**099-07-035-412**	**N/A**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 11:21**	**161129L07**

Comment(s): - Results were evaluated to the MDL (DL), concentrations >= to the MDL (DL) but < RL (LOQ), if found, are qualified with a "J" flag.

Parameter	Result	RL	MDL	DF	Qualifiers
Dibutyltin	ND	50	1.8	1.00	
Monobutyltin	ND	50	2.4	1.00	
Tetrabutyltin	ND	50	1.9	1.00	
Tributyltin	ND	50	1.4	1.00	

Surrogate	Rec. (%)	Control Limits	Qualifiers
Tripentyltin	104	19-121	

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RL: Reporting Limit. DF: Dilution Factor. MDL: Method Detection Limit.

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Quality Control - LCS/LCSD

APEX Laboratories, LLC
12232 SW Garden Place
Portland, OR 97223-8246

Project: A6K0789

Date Received: 11/28/16
Work Order: 16-11-2298
Preparation: EPA 3510C
Method: Organotins by Krone et al.

Quality Control Sample ID	Type	Matrix	Instrument	Date Prepared	Date Analyzed	LCS/LCSD Batch Number
099-07-035-412	**LCS**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 11:36**	**161129L07**
099-07-035-412	**LCSD**	**Aqueous**	**GC/MS Y**	**11/29/16**	**12/02/16 11:52**	**161129L07**

Parameter	Spike Added	LCS Conc.	LCS %Rec.	LCSD Conc.	LCSD %Rec.	%Rec. CL	RPD	RPD CL	Qualifiers
Tetrabutyltin	200.0	213.2	107	220.7	110	35-131	3	0-20	
Tributyltin	200.0	176.4	88	185.5	93	50-120	5	0-20	

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RPD: Relative Percent Difference. CL: Control Limits

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Sample Analysis Summary Report

Work Order: 16-11-2298 Page 1 of 1

Method	Extraction	Chemist ID	Instrument	Analytical Location
Organotins by Krone et al.	EPA 3510C	907	GC/MS Y	1

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Glossary of Terms and Qualifiers

Work Order: 16-11-2298 Page 1 of 1

Qualifiers	Definition
*	See applicable analysis comment.
<	Less than the indicated value.
>	Greater than the indicated value.
1	Surrogate compound recovery was out of control due to a required sample dilution. Therefore, the sample data was reported without further clarification.
2	Surrogate compound recovery was out of control due to matrix interference. The associated method blank surrogate spike compound was in control and, therefore, the sample data was reported without further clarification.
3	Recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) compound was out of control due to suspected matrix interference. The associated LCS recovery was in control.
4	The MS/MSD RPD was out of control due to suspected matrix interference.
5	The PDS/PDSD or PES/PESD associated with this batch of samples was out of control due to suspected matrix interference.
6	Surrogate recovery below the acceptance limit.
7	Surrogate recovery above the acceptance limit.
B	Analyte was present in the associated method blank.
BU	Sample analyzed after holding time expired.
BV	Sample received after holding time expired.
CI	See case narrative.
E	Concentration exceeds the calibration range.
ET	Sample was extracted past end of recommended max. holding time.
HD	The chromatographic pattern was inconsistent with the profile of the reference fuel standard.
HDH	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but heavier hydrocarbons were also present (or detected).
HDL	The sample chromatographic pattern for TPH matches the chromatographic pattern of the specified standard but lighter hydrocarbons were also present (or detected).
J	Analyte was detected at a concentration below the reporting limit and above the laboratory method detection limit. Reported value is estimated.
JA	Analyte positively identified but quantitation is an estimate.
ME	LCS Recovery Percentage is within Marginal Exceedance (ME) Control Limit range (+/- 4 SD from the mean).
ND	Parameter not detected at the indicated reporting limit.
Q	Spike recovery and RPD control limits do not apply resulting from the parameter concentration in the sample exceeding the spike concentration by a factor of four or greater.
SG	The sample extract was subjected to Silica Gel treatment prior to analysis.
X	% Recovery and/or RPD out-of-range.
Z	Analyte presence was not confirmed by second column or GC/MS analysis.

Solid - Unless otherwise indicated, solid sample data is reported on a wet weight basis, not corrected for % moisture. All QC results are reported on a wet weight basis.

Any parameter identified in 40CFR Part 136.3 Table II that is designated as "analyze immediately" with a holding time of <= 15 minutes (40CFR-136.3 Table II, footnote 4), is considered a "field" test and the reported results will be qualified as being received outside of the stated holding time unless received at the laboratory within 15 minutes of the collection time.

A calculated total result (Example: Total Pesticides) is the summation of each component concentration and/or, if "J" flags are reported, estimated concentration. Component concentrations showing not detected (ND) are summed into the calculated total result as zero concentrations.

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SUBCONTRACT ORDER

Apex Laboratories

A6K0789 **16-11-2298**

SENDING LABORATORY:

Apex Laboratories
12232 S.W. Garden Place
Tigard, OR 97223
Phone: (503) 718-2323
Fax: (503) 718-0333
Project Manager: Philip Nerenberg

RECEIVING LABORATORY:

Eurofins_CalScience
7440 Lincoln Way
Garden Grove, CA 92841-1427
Phone :(714) 895-5494
Fax: (714) 894-7501

1 **Sample Name: B18-D-CB1** **Water** **Sampled: 11/22/16 14:15** (A6K0789-01)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	12/08/16 17:00	12/06/16 14:15	Krone
Containers Supplied: (E)1 L Amber Glass - Non Preserved			

2 **Sample Name: B18-D-CB3** **Water** **Sampled: 11/22/16 14:25** (A6K0789-02)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	12/08/16 17:00	12/06/16 14:25	Krone
Containers Supplied: (E)1 L Amber Glass - Non Preserved			

3 **Sample Name: B18-F-1** **Water** **Sampled: 11/22/16 14:30** (A6K0789-03)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	12/08/16 17:00	12/06/16 14:30	Krone
Containers Supplied: (E)1 L Amber Glass - Non Preserved			

4 **Sample Name: B18-F-2** **Water** **Sampled: 11/22/16 16:00** (A6K0789-04)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	12/08/16 17:00	12/06/16 16:00	Krone
Containers Supplied: (E)1 L Amber Glass - Non Preserved			

Standard TAT

Released By: [signature]	Date: 11/25/16	Received By: Fed Ex (Shipper)	Date:
Released By: Fed Ex (Shipper)	Date: 11/28/16	Received By: [signature]	Date: 11/28/16 0734

SUBCONTRACT ORDER

Apex Laboratories

A6K0789

2298

5 **Sample Name: B18-F-3** **Water** **Sampled: 11/22/16 15:10** (A6K0789-05)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	12/08/16 17:00	12/06/16 15:10	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

6 **Sample Name: B18-F-4** **Water** **Sampled: 11/22/16 14:55** (A6K0789-06)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	12/08/16 17:00	12/06/16 14:55	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

7 **Sample Name: B18-F-5** **Water** **Sampled: 11/22/16 14:58** (A6K0789-07)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	12/08/16 17:00	12/06/16 14:58	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

8 **Sample Name: B18-F-6** **Water** **Sampled: 11/22/16 14:40** (A6K0789-08)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	12/08/16 17:00	12/06/16 14:40	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

9 **Sample Name: B18-F-7** **Water** **Sampled: 11/22/16 14:40** (A6K0789-09)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	12/08/16 17:00	12/06/16 14:40	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

10 **Sample Name: B18-F-R1** **Water** **Sampled: 11/22/16 15:20** (A6K0789-10)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	12/08/16 17:00	12/06/16 15:20	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

standard TAT

CRB 11/25/16 — Fed Ex (Shipper)

Released By — Date — Received By — Date

Fed Ex (Shipper) 11/28/16 — WObat ECI 11/28/16 0734

Released By — Date — Received By — Date

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SUBCONTRACT ORDER

Apex Laboratories

A6K0789

11 **Sample Name: B18-F-R2** **Water** **Sampled: 11/22/16 14:50** (A6K0789-11)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	12/08/16 17:00	12/06/16 14:50	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

12 **Sample Name: B18-F-R3** **Water** **Sampled: 11/22/16 14:30** (A6K0789-12)

Analysis	Due	Expires	Comments
TBT, Butyl Tins (3) (Sub)	12/08/16 17:00	12/06/16 14:30	Krone
Containers Supplied:			
(E)1 L Amber Glass - Non Preserved			

Standard TAT

CEB 11/25/16

Released By Date — Fed Ex (Shipper) — Received By Date

Fed Ex (Shipper) 11/28/16

Released By Date — Received By Date

WCBath ECI 11/28/16 0754

2594

ORIGIN ID:BNOA (503) 718-2323
SAMPLE CONTROL
APEX LABS
12232 SW GARDEN PLACE

TIGARD, OR 97223
UNITED STATES US

SHIP DATE: 25NOV16
ACTWGT: 55.00 LB
CAD: 4716258/INET3790

BILL SENDER

TO DANIELLE GONSMAN
CALSCIENCE
7440 LINCOLN WAY

GARDEN GROVE CA 92841
(714) 895-5494 REF:
INV:
PO: DEPT:

544J3/CBB1/14E9

FedEx Express

1 of 2

TRK# 0201 7777 9476 2765
MASTER

MON - 28 NOV 8:00A
FIRST OVERNIGHT

W1 APVA

92841
CA-US SNA

ORIGIN ID:BNOA (503) 718-2323
SAMPLE CONTROL
APEX LABS
12232 SW GARDEN PLACE

TIGARD, OR 97223
UNITED STATES US

SHIP DATE: 25NOV16
ACTWGT: 15.00 LB
CAD: 4716258/INET3790

BILL SENDER

TO DANIELLE GONSMAN
CALSCIENCE
7440 LINCOLN WAY

GARDEN GROVE CA 92841
(714) 895-5494 REF:
INV:
PO: DEPT:

544J3/CBB1/14E9

FedEx Express

2 of 2

MPS# 0263 7777 9476 2776
Mstr# 7777 9476 2765 0201

MON - 28 NOV 8:00A
FIRST OVERNIGHT

W1 APVA

92841
CA-US SNA

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WORK ORDER NUMBER: 16-11- 2298

SAMPLE RECEIPT CHECKLIST

COOLER 1 OF 2

CLIENT: APEX

DATE: 11 / 26 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3A (CF: 0.0°C); Temperature (w/o CF): 2.0 °C (w/ CF): 2.0 °C; ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: LS

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: LS

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 300

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOAh ☐ VOAna_2 ☐ 100PJ ☐ 100PJna_2 ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 125PB

☐ 125PBznna ☑ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 250PB ☐ 250PBn ☐ 500AGB ☐ 500AGJ ☐ 500AGJs

☐ 500PB ☑ 1AGB ☐ 1AGBna_2 ☐ 1AGBs ☐ 1PB ☐ 1PBna ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (_____) ☐ EnCores® (_____) ☐ TerraCores® (_____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na_2** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

Labeled/Checked by: 300

Reviewed by: LS

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WORK ORDER NUMBER: 16-11- 2298

SAMPLE RECEIPT CHECKLIST

COOLER 2 OF 2

CLIENT: APEX

DATE: 11 / 26 / 2016

TEMPERATURE: (Criteria: 0.0°C – 6.0°C, not frozen except sediment/tissue)

Thermometer ID: SC3A (CF: 0.0°C); Temperature (w/o CF): 2.4 °C (w/ CF): 2.4 °C; ☐ Blank ☑ Sample

☐ Sample(s) outside temperature criteria (PM/APM contacted by: _____)

☐ Sample(s) outside temperature criteria but received on ice/chilled on same day of sampling

☐ Sample(s) received at ambient temperature; placed on ice for transport by courier

Ambient Temperature: ☐ Air ☐ Filter Checked by: LS

CUSTODY SEAL:

Cooler ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: LS

Sample(s) ☐ Present and Intact ☐ Present but Not Intact ☑ Not Present ☐ N/A Checked by: 300

SAMPLE CONDITION:	Yes	No	N/A
Chain-of-Custody (COC) document(s) received with samples	☑	☐	☐
COC document(s) received complete	☑	☐	☐
☐ Sampling date ☐ Sampling time ☐ Matrix ☐ Number of containers			
☐ No analysis requested ☐ Not relinquished ☐ No relinquished date ☐ No relinquished time			
Sampler's name indicated on COC	☐	☐	☑
Sample container label(s) consistent with COC	☑	☐	☐
Sample container(s) intact and in good condition	☑	☐	☐
Proper containers for analyses requested	☑	☐	☐
Sufficient volume/mass for analyses requested	☑	☐	☐
Samples received within holding time	☑	☐	☐
Aqueous samples for certain analyses received within 15-minute holding time			
☐ pH ☐ Residual Chlorine ☐ Dissolved Sulfide ☐ Dissolved Oxygen	☐	☐	☑
Proper preservation chemical(s) noted on COC and/or sample container	☑	☐	☐
Unpreserved aqueous sample(s) received for certain analyses			
☐ Volatile Organics ☐ Total Metals ☐ Dissolved Metals			
Container(s) for certain analysis free of headspace	☐	☐	☑
☐ Volatile Organics ☐ Dissolved Gases (RSK-175) ☐ Dissolved Oxygen (SM 4500)			
☐ Carbon Dioxide (SM 4500) ☐ Ferrous Iron (SM 3500) ☐ Hydrogen Sulfide (Hach)			
Tedlar™ bag(s) free of condensation	☐	☐	☑

CONTAINER TYPE: (Trip Blank Lot Number: _____)

Aqueous: ☐ VOA ☐ VOAh ☐ VOAna_2 ☐ 100PJ ☐ 100PJna_2 ☐ 125AGB ☐ 125AGBh ☐ 125AGBp ☐ 125PB ☐ 125PBznna ☑ 250AGB ☐ 250CGB ☐ 250CGBs ☐ 250PB ☐ 250PBn ☐ 500AGB ☐ 500AGJ ☐ 500AGJs ☐ 500PB ☑ 1AGB ☐ 1AGBna_2 ☐ 1AGBs ☐ 1PB ☐ 1PBna ☐ _____ ☐ _____ ☐ _____ ☐ _____

Solid: ☐ 4ozCGJ ☐ 8ozCGJ ☐ 16ozCGJ ☐ Sleeve (____) ☐ EnCores® (____) ☐ TerraCores® (____) ☐ _____

Air: ☐ Tedlar™ ☐ Canister ☐ Sorbent Tube ☐ PUF ☐ _____ **Other Matrix** (_____): ☐ _____ ☐ _____

Container: **A** = Amber, **B** = Bottle, **C** = Clear, **E** = Envelope, **G** = Glass, **J** = Jar, **P** = Plastic, and **Z** = Ziploc/Resealable Bag

Preservative: **b** = buffered, **f** = filtered, **h** = HCl, **n** = HNO_3, **na** = NaOH, **na_2** = $Na_2S_2O_3$, **p** = H_3PO_4, **s** = H_2SO_4, **u** = ultra-pure, **x** = Na_2SO_3+$NaHSO_4.H_2O$, **znna** = Zn $(CH_3CO_2)_2$ + NaOH

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Reviewed by: LS

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Quarterly Groundwater Interim Action Monitoring Report, Fourth Quarter 2016
Stantec Consulting Services, Inc., 2017

Quarterly Groundwater Interim Action Monitoring Report, Fourth Quarter 2016

TOC Holdings Co.
Northwest Terminal
10350 North Time Oil Road
Portland, Oregon

Prepared for:
Edmund J. Wood, Esq.
On Behalf of TOC Holdings Co.
303 N. 67th Street
Seattle, WA 98103

Prepared by:
Stantec Consulting Services Inc.
4100 194th Street SW, Suite 400
Lynnwood, WA 98036
Phone: 206.667.0555

May 16, 2017

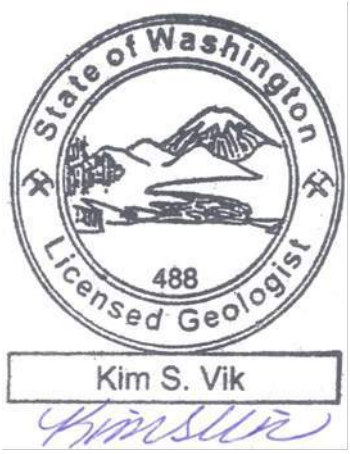
Sign-Off Sheet

This document entitled, ***Fourth Quarter 2016 Groundwater Interim Action Monitoring Report,*** was prepared by **Stantec Consulting Services Inc. (Stantec)** on behalf of **TOC Holdings Co. (TOC)** for specific application to the TOC Holdings Co. Northwest Terminal in Portland, Oregon. Services for this project were conducted in accordance with the Environmental Services Contract between TOC Holdings Co. and Stantec. We have performed our services in accordance with generally accepted engineering and consulting standards for environmental work in effect at the time and locality services were performed. The reuse of information, conclusions, and recommendations provided herein by TOC Holdings Co. or others in connection with any site other than the Northwest Terminal without Stantec's written permission shall be at the sole risk of TOC Holdings Co. and without liability to Stantec.

This document was prepared under the supervision and direction of the key staff identified below.

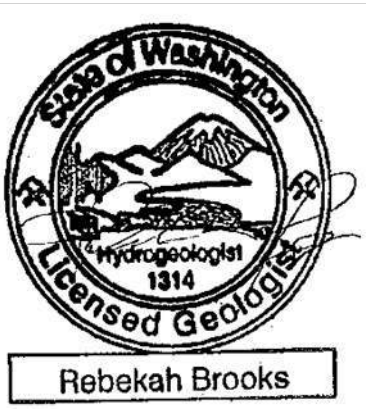
Prepared by:

Kim Vik, LG
Project Geologist



Reviewed by:

Rebekah Brooks, LG, LHg
Project Manager
Senior Associate, Hydrogeology



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Acronyms & Abbreviations

µg/L	micrograms per liter
3Q2016	Third Quarter 2016
4Q2016	Fourth Quarter 2016
bgs	below ground surface
BTEX	benzene, toluene, ethylbenzene, and total xylenes
DTP	depth-to-product
DTW	depth-to-water
EPA	U.S. Environmental Protection Agency
GWIA	groundwater interim action
HRW	horizontal groundwater recovery well
JSCS	Portland Harbor Joint Source Control Strategy
LNAPL	light non-aqueous phase liquid
MDL	method detection limit
MRL	method reporting limit
MTBE	methyl tert-butyl ether
MW	groundwater monitoring well
NA	not analyzed
NFA	No Further Action
NM	not measured
NS	not sampled
NWTPH-Dx	Northwest TPH – Diesel/ Heavy Oil Range Organics
NWTPH-Gx	Northwest TPH - Gasoline Range Organics
ODEQ	Oregon Department of Environmental Quality
PAH	petroleum aromatic hydrocarbons
PCP	pentachlorophenol
QA/QC	quality assurance/quality control
RI	remedial Investigation
RW	vertical groundwater recovery well
SDM	storm drain manhole
Stantec	Stantec Consulting Services Inc.
SVL	screening level value
SVOCs	semivolatile organic compounds
Terminal	TOC Northwest Terminal
TOC	TOC Holdings Co.
TPH	total petroleum hydrocarbons
VOCs	volatile organic compounds

1.0 INTRODUCTION

On behalf of TOC Holdings Co. (TOC), this report presents the results of the fourth quarter 2016 (4Q2016) groundwater interim action (GWIA) monitoring event conducted as part of the ongoing Phase II and Phase III remedial investigation (RI) and interim action activities at the TOC Northwest Terminal (Terminal) located in Portland, Oregon (**Figure 1, Appendix A**). Field activities and data evaluation were performed by Stantec Consulting Services Inc. (Stantec).

The Terminal is a former bulk petroleum storage and transfer facility owned by TOC (formerly Time Oil Co.) located in the industrialized Rivergate area of North Portland, Oregon (**Figure 1, Appendix A**). TOC received No Further Action (NFA) determinations from DEQ for portions of the Terminal, including the East Property (in 2003) and the Central Property (in 2014) (**Figure 2, Appendix A**). Operations ceased at the Terminal on October 31, 2001.

The GWIA system began operation in October 2000. The purpose of the GWIA is to prevent further migration of dissolved pentachlorophenol (PCP) observed in upper and lower zone groundwater at the Terminal. The system consists of the following:

- **Horizontal Recovery Well (HRW1)** – captures upper zone groundwater near the downgradient extent of the PCP plume in the upper zone during periods of seasonal high water levels.
- **Vertical Recovery Well (RW2)** – captures lower zone groundwater at downgradient locations where elevated concentrations of PCP were historically recorded. (operation of RW2 was terminated in November 2013, see section 3.0).
- **Storm Drain Intercept System** – captures PCP-impacted groundwater in the upper zone that infiltrates into the storm drain pipeline in the area of the PCP plume. The groundwater intercept system is located in the east-west trending storm drain between manholes SDM1A and SDM1. SDM1 is the manhole located closest to the Willamette River and is the location for sample collection of the storm drain intercept system for the GWIA monitoring events.

The GWIA monitoring locations and other current groundwater monitoring locations are shown on **Figure 3** (**Appendix A**).

This report provides the following information:

- A summary of groundwater elevation and groundwater quality data for the 4Q2016 GWIA monitoring event,
- A summary of GWIA system operation data collected during the 4Q2016 quarterly event,
- An evaluation of data collected during 4Q2016 for the GWIA relative to compliance with defined performance criteria.

The 4Q2016 GWIA monitoring event was conducted November 8 through 12, 2016.

The scope of quarterly groundwater interim action is provided in **Section 2.0.** The performance and status of the groundwater interim action are described in **Section 3.0**. Compliance sampling for the industrial wastewater permit is discussed in **Section 4.0**. Conclusions and future tasks are discussed in **Section 5.0**.

2.0 SCOPE OF THE QUARTERLY GROUNDWATER INTERIM ACTION EVENTS

2.1 Groundwater Levels and Sampling – Upper Zone Monitoring Wells

The scope of the quarterly GWIA includes depth-to-water (DTW)/depth-to-product (DTP) measurements (if observed) at selected upper and lower zone wells and groundwater quality sampling at selected upper and lower zone wells and sampling points. A detailed description of the scope and results are provided in the following sections. The DTW/DTP measurements and resulting groundwater elevations for measured upper zone monitoring wells during the 4Q2016 GWIA sampling event are provided on **Table 1** (**Appendix B**). Historical measurements (since 1993) are included in the annual groundwater monitoring report. The table below indicates the upper zone monitoring wells that were measured and sampled during 4Q2016.

Horizontal recovery well HRW1 and groundwater intercept system sampling point SDM1 are additional sampling points, but are sampled quarterly to monitor the groundwater treatment system under the GWIA. Samples can only be collected if there is enough water present at the sampling points at the time of sampling, typically during the first and second quarters, the seasonally wetter periods of the year.

Upper Zone Wells – DTW Level Measured and Samples Collected

Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID
D	P	LW005S	LW010S*	LW020S	OX001S	OX005S	OX009S
H	Q	LW007S	LW011S	LW021S	OX002S	OX006S	SDM1**
K	LW001S	LW008S	LW013S	LW027S	OX003S	OX007S	HRW1**
N	LW004S	LW009S**	LW019S	LW040S	OX004S	OX008S	

Notes:
* = Well was dry at the time of DTW measurement; no sample collected.
** = DTW not applicable (not a groundwater monitoring well).
Highlighted cell denotes that in addition to DTW level measurement, a groundwater sample was collected from the well or sampling point.
Upper zone wells OX003S – OX007S, and OX009S are sampled annually as part of the annual groundwater monitoring event and are not part of the quarterly GWIA sampling plan.

2.2 Groundwater Levels and Sampling – Lower Zone Monitoring Wells

Groundwater level (DTW) data and groundwater quality samples were collected from select lower zone monitoring wells as shown in the table below for the 4Q2016 GWIA event. The DTW measurements and resulting groundwater elevations for measured lower zone monitoring wells during 4Q2016 GWIA event are provided on **Table 1** (**Appendix B**). Historical measurements (since 1993) are included in the annual groundwater monitoring report. The table below indicates the lower zone monitoring wells that were measured and sampled during the 4Q2016 GWIA sampling event. Groundwater monitoring locations are shown on **Figure 3** (**Appendix A**).

The river outfall sampling point is frequently not accessible for sampling due to high river stage (covering the outfall). The river outfall was not sampled during 4Q2016.

Vertical recovery well RW2 was turned off on November 1, 2013, as a part of an assessment to determine if groundwater recovery from RW2 can be discontinued. The assessment is discussed in the *Quarterly Interim Action Monitoring Report, 2014 through 2015* (Stantec 2016). DTW measurements were not collected from RW2 following shutdown due to inaccessibility past the pump housing.

Lower Zone Wells – DTW Level Measured and Samples Collected

Well ID	Well ID	Well ID	Well ID	Well ID	Well ID	Well ID
G1A	LW004DR	LW014D	LW020D	LW026D	LW038D	RW2*
O	LW006D	LW015D	LW022D	LW027D	LW039D	River Gauge
R	LW009D	LW016D	LW023D	LW035D	LW040D	River Outfall
LW001D	LW010D	LW017D	LW024D	LW036D	LW045D	
LW003D	LW011D	LW018D	LW025D	LW037D	OX008D	

Notes:
* = DTW level not measured; remediation pump impedes measurement of DTW at RW2.
Highlighted cell denotes that in addition to DTW level measurement, a groundwater sample was collected from the well or sampling point.

2.3 Groundwater Elevations and Flow

DTW measurements were used to calculate groundwater elevations using surveyed reference elevations as shown on **Table 1** (**Appendix B**). Groundwater elevation contour maps for the upper and lower zones are included as **Figures 4** and **5**, respectively (**Appendix A**). Groundwater flow direction in the upper and lower zones is west-southwest toward the Willamette River. In the upper zone, a localized shift in groundwater flow direction to the south/southwest in the area near and including the former PCP mixing area, likely reflects the local influence of the east-west trending storm drain on groundwater flow. Hydrographs indicate that the upper zone groundwater table surface fluctuates approximately 6 to 7 feet seasonally (between about 12 and 19 feet, MSL) for most of the monitoring wells. The approximate depth of the water table during seasonal high conditions is approximately 13 feet below ground surface. Groundwater elevations in the lower zone are influenced by diurnal river stage fluctuations and an increase in groundwater flow gradients in a north-south trending area across the former Main Terminal Tank Farm area, where the confining unit appears to be discontinuous.

2.4 Wells with Light Non-Aqueous Phase Liquid (LNAPL)

DTP measurements were conducted in wells if light non-aqueous phase liquid (LNAPL) was observed during the quarterly monitoring events. During the 4Q2016 GWIA event, measurable LNAPL was observed in upper zone well LW019S located within the former Main Terminal tank farm area, as summarized in the table below. LNAPL has not been observed in any lower zone monitoring well. Monitoring wells at the Terminal will continue to be monitored for the presence of LNAPL during future quarterly monitoring events. The LNAPL observation and thickness observed in 4Q2016 is provided in **Table 1** (**Appendix B**).

Measurable LNAPL in Upper Zone Wells

Location/Well ID	LNAPL Thickness (feet)
LW019S	0.13

2.5 Groundwater Analyses

Groundwater samples were collected from selected upper and lower zone wells (shown in tables in **Section 2.1** and **2.2**) and analyzed for one or more of the following:

Laboratory Analyses for Quarterly Groundwater Samples

Analysis Type	Analysis Method	Sample Location / Well ID or Sampling Point ID
Gasoline-Range Petroleum Hydrocarbons (TPH-G)	NWTPH-Gx	Analyses performed for all samples collected at GWIA groundwater monitoring locations.
Diesel-Range Petroleum Hydrocarbons (TPH-D)	NWTPH-Dx	Analyses performed for all samples collected at GWIA groundwater monitoring locations.
Oil-Range Petroleum Hydrocarbons (TPH-O)	NWTPH-Dx	
Volatile Organic Compounds (VOCs)	EPA Method 8260	Analyses performed for upper zone wells/sampling points: *LW004S, LW011S, LW013S, OX002S, and OX008S.* Analyses performed for lower zone wells/sampling points: *LW006D, LW009D, LW010D, LW017D, LW018D, LW036D, LW037D, LW038D, LW039D and RW2.*
Semivolatile Organic Compounds (SVOCs)	EPA Method 8260	Analyses performed for upper zone wells/sampling points: *LW004S, LW011S, LW013S, OX002S, and OX008S.* Analyses performed for lower zone wells/sampling points: *LW006D, LW009D, LW010D, LW017D, LW018D, LW036D, LW037D, LW038D, LW039D and RW2.*
Dissolved and/or Total Metals (As, Cr, Cu, Pb, Ni, Se, Zn)	EPA Method 6020	Analyses performed for upper zone wells/sampling points: *LW004S, LW011S, LW013S, LW020S, OX002S, and OX008S.* Analyses performed for lower zone wells/sampling points: *LW006D, LW009D, LW010D, LW017D, LW018D, LW020D, LW022D, LW023D, LW024D, LW025D,LW035D, LW036D, LW037D, LW038D, LW039D and RW2.*
Dioxins and Furans	EPA Method 8290	None collected. Analyses performed for select groundwater samples collected annually, during the first quarter only.

Analysis Type	Analysis Method	Sample Location / Well ID
Monitored Natural Attenuation (MNA) Parameters:		
Biochemical Oxygen Demand (BOD)	SM 5210	
Total Organic Carbon (TOC)	SM 5310	Analyses performed for lower zone wells/sampling points only: *LW006D, LW009D, LW036D, LW037D, LW038D and LW039D.*
Nitrate + Nitrite	EPA Method 353.3	
Nitrite - N	EPA Method 353.3	
Nitrate - N	EPA Method 353.3	
Sulfate	EPA Method 300.0	
Field Parameters:		
Conductivity	N/A (Field Measurement)	
Dissolved Oxygen	N/A (Field Measurement)	Field measurements performed for all samples collected at 4Q2016 GWIA groundwater monitoring locations.
pH	N/A (Field Measurement)	
Redox	N/A (Field Measurement)	
Temperature	N/A (Field Measurement)	
Turbidity	N/A (Field Measurement)	

Upper and lower zone groundwater quality data for the 4Q2016 GWIA event are provided in **Tables 2** and **3** (**Appendix B**), respectively. The results have been validated using standard EPA protocols (EPA 1999, 2002, 2004); the tables include the data validation qualifiers, if applicable. The laboratory data packages for the 4Q2016 GWIA event are included as **Appendix C**.

3.0 PERFORMANCE AND STATUS OF GROUNDWATER INTERIM ACTION

This section presents a summary of the performance and status of the GWIA treatment system at the Terminal for the 4Q2016 GWIA event. System operation data for the GWIA were evaluated in accordance with the startup monitoring plan (Landau Associates 2000) to determine compliance with performance criteria based on:

1. recovery from upper zone recovery well, HRW1, when the pump is operating or when sufficient groundwater is present in the upper zone;

2. continuous pumping from lower zone recovery well, RW2 (*performance of RW2 was terminated in November 2013), so performance criterion involving pumping of RW2 no longer applies (see below)*.

3. groundwater flow toward HRW1 and RW2 (as indicated above, no longer applies for RW2) from the downgradient and upgradient directions;

4. reversal of the lower zone groundwater flow direction at the leading edge of the PCP plume;

5. chemical confirmation that continued migration of PCP in groundwater downgradient of RW2 and HRW1 is not occurring; and

6. compliance with the requirements of the industrial wastewater discharge permit (City of Portland Permit No. 400.121).

In addition to the six criteria listed above, information is also presented in this section regarding the operation of an upper zone groundwater storm drain intercept system located in the storm drain between manholes SDM1 and SDM1A. The storm drain intercept system captures upper zone groundwater that infiltrates to the storm drain.

3.1 Summary of GWIA Performance – Groundwater Intercept System

A summary of the GWIA performance information, as it relates to the criteria identified above and the groundwater treatment system, are as follows:

- The groundwater treatment system was shut off for the entire 4Q2016 due to low flow and dry conditions, and there was no discharge to the POTW.
- The pumps at HRW-1 and SDM-1 did not start collecting influent until early December because of low seasonal conditions. Power outages occurred at the Terminal during December 2016 due to downed power poles and inclement weather such that the WWTS was not operating even after the pumps started operating. The pumps were shut down so that the batch tanks did not overfill until repairs could be made which occurred the following quarter (January 2017).
- Based on the 4Q2017t groundwater elevation data, despite the shut-down of the WWTS, the downgradient migration of PCP-impacted groundwater to the river remained contained.
- RW2 was not operated during the 4Q2016, except to sample the well in November 2016. The pump at RW2 was shut off on November 1, 2013 (Stantec 2016). PCP concentrations have been

consistently non-detect since termination of pumping, so remediation of PCP is considered to be complete in the lower zone.

- There was no flow in the horizontal recovery well (HRW1) during the 4Q2016. A summary of the groundwater recovery data for HRW1 is included in **Table 4**.
- A total of 100 gallons of water were recovered from the east-west trending storm drain line intercept system (SDM1) at an average flow rate of 0.002 gallons per minute (gpm) during November 2016. There was no flow from SDM1 for the months of October and December 2016. A summary of the groundwater recovery data for SDM1 is included in **Table 4**.
- The WWTS was shut off during the 4Q2016; therefore, no water was processed through the WWTS and there was no discharge to the City of Portland POTW. Monthly discharge reports were submitted to the City of Portland as required. Effluent samples prior to discharge typically collected on a monthly basis were not collected due to WWTS shut-off (**Section 4.0**).
- A total of approximately 45.9 million gallons of groundwater have been treated and discharged from the GWIA system since October 2000.

3.2 Summary of GWIA Performance – PCP Monitoring

A summary of the GWIA performance information, as it relates to the criteria identified above for PCP monitoring, is as follows:

- The extent of groundwater impact is estimated based on the extent of dissolved-phase PCP. PCP concentration maps for the upper zone for the 4Q2016 is provided on **Figure 6** (**Appendix A**). There were no detections of PCP at or above the method reporting limit (MRL) in the lower zone during 4Q2016.
- The 4Q2016 upper zone analytical data indicate that PCP was not detected above the laboratory MRL in downgradient monitoring well LW013S located 84 feet south of HRW1.
- Well LW004S, located 15 feet south of the storm drain intercept system, was sampled to monitor PCP along the storm drain line. PCP was detected in well LW004S at 0.972 µg/L during 4Q2016, which is a decrease from the previous quarter (3Q2016) where the PCP concentration in LW004S was 1.5 µg/L. The PCP concentration at LW004S continues to be less than the screening level of 3 µg/L. Concentrations of PCP in LW004S have decreased over time as shown in the time versus PCP concentration plot in **Figure 7** (**Appendix A**).
- PCP was not detected in well LW006D which is located between LW004S and the river or in any of the shoreline wells (LW036D, LW037D, LW038D, and LW039D) during the 4Q2016 event.
- The southern boundary of the PCP plume defined by concentrations exceeding the Portland Harbor Joint Source Control Strategy (JSCS) minimum screening level value (SLV) of 3 µg/L is just south of the east-west trending storm drain intercept system, based on results from the 4Q2016 event (**Figure 6**; **Appendix A**). Monitoring of the intercept system shows that the decreases in PCP concentrations at LW004S appear to be related to operation of HRW1 and SDM1 and the termination of pumping at RW2.
- The lack of detected PCP concentrations in wells between LW004S and in the shoreline wells show that PCP has not migrated to the river.

- PCP results are compared with the Portland Harbor JSCS minimum SLV of 3 µg/L. The table below summarizes PCP detections in the upper zone wells monitored during4Q2016 that exceed the SLV. PCP was not detected in any lower zone groundwater monitoring well during 4Q2016. Other analytes detected in groundwater are presented on **Tables 2** and **3** (**Appendix B**).

Upper Zone Wells
PCP Detections Above the Method Reporting Limit (MRL)
Exceeding the SLV of 3 µg/L

Well ID	PCP (ug/L)
Q*	NA
LW011S	**96.9**
OX002S	**99.4**
OX008S	**17.1**

- LNAPL appears to be petroleum-related and not PCP-related. Based on prior LNAPL sampling results in the former PCP mixing area where these wells are located (Stantec 2016), the predominant presence in the LNAPL is total petroleum hydrocarbons in the diesel (TPH-D) and gasoline-range (TPH-G) and appears to be associated with historical tank farm activities. The LNAPL contained high concentrations of TPH-D and TPH-G while PCP was not detected at or above the MRL. The LNAPL sample was analyzed to better understand the possible source and does not represent dissolved phase groundwater conditions. The presence of LNAPL is discussed in the annual groundwater monitoring.

4.0 COMPLIANCE SAMPLING FOR INDUSTRIAL WASTEWATER PERMIT

The industrial wastewater discharge permit (City of Portland Permit No. 400.121) for discharge of the extracted groundwater following treatment at the Terminal's WWTS, effective on February 15, 2012, includes the following discharge limitation:

Wastewater Discharge Permit Compliance Level

Parameter	Permitted Limit
PCP	40 µg/L

Samples of the treated groundwater prior to discharge are normally collected every month, but due to dry conditions during 4Q2015 the WWTS was shut-off and no compliance samples were collected.

Monthly Discharge (Effluent) Compliance Sampling Results

Month - Year	Sample Date	PCP Result (µg/L)
April 2016	System Off	NS
May 2016	System Off	NS
June 2016	System Off	NS

NS – Effluent sample not collected.

The system operation is typically inspected two to three times per week and the effluent is sampled and analyzed for PCP a minimum of once a month. Effluent samples could not be collected from the WWTS during 4Q2016 due to no-flow conditions and system shut-off. The PCP results (or system status) are provided to the City of Portland in a Self-Monitoring Report (SMR) on a quarterly basis. Treatment system discharge volumes and discharge status are reported to the City of Portland on a monthly basis. There are not analytical reports associated with system effluent sampling for the 4Q2016.

5.0 CONCLUSIONS AND FUTURE TASKS

The PCP concentration decreased at the well location south of the storm drain intercept system (LW004S) during the 4Q2016 GWIA event. Overall PCP concentrations at this location continue to be less than the minimum preliminary screening level. PCP was not detected in downgradient wells (between LW004S and the river), or in the shoreline wells in the 4Q2016. LNAPL was present in one upper zone well (LW019S) located in the former Main Terminal Tank Farm area, west of the PCP plume area. Based on prior LNAPL sampling results (Stantec 2016), the predominant presence in the LNAPL is TPH-G and TPH-D and appears to be associated with historical tank farm activities. PCP has not been detected at or above the MRL in any groundwater sample collected from RW2 after shut-down in October 2013.

With the exception of RW2, the operation of the groundwater treatment system is planned to continue through the calendar year 2017. Stantec will continue to sample the PCP in the WWTS effluent and provide compliance reporting if the WWTS is operating and until instructed otherwise.

6.0 REFERENCES

City of Portland. 2011. Letter – Monitoring Waiver for 1200-Z General Stormwater Discharge Permit, DEQ File# 109186. February 8, 2011.

DEQ. 2007. *Portland Harbor Joint Source Control Strategy*. Oregon Department of Environmental Quality. Table 3-1, December 2005, Revised July 16, 2007.

DEQ. 2012. *Risk-Based Concentrations for Individual Chemicals*, Table. Revised June 7, 2012.

DEQ. 2014. Letter – Conditional No Further Action Determination, Central Property, Time Oil Co. NW Terminal, ECSI# 170. February 13, 2014.

EPA. 1999. *USEPA Contract Laboratory Program National Functional Guidelines for Organic Data Review, EPA 540/R-99/008.* USEPA. *October 1999*.

EPA. 2002. *Guidance on Environmental Data Verification and Data Validation, EPA QA/G-8.* USEPA. November 2002.

EPA. 2004. *USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review, EPA 540-R-04-004*. USEPA. October 2004.

Landau Associates. 1999. *Phase I and II Contaminants of Potential Concern (COPC) Screening Report, Time Oil Northwest Terminal, Portland, Oregon.* September 10, 1999.

Landau Associates. 2000. *Startup Plan, Groundwater Interim Action, Time Oil Co., Northwest Terminal, Portland, Oregon.* July 14, 2000.

Stantec Consulting Services, Inc. (Stantec). 2016. *2014-2015 Quarterly Groundwater Interim Action Status Report*. *Time Oil Northwest Terminal, Portland, Oregon*. May 6.

Appendix A

Figures

1 Project Location

2 Terminal Properties and Site Features

3 Groundwater Monitoring Locations

4 Groundwater Elevation Contours, Upper Zone, November 10, 2016

5 Groundwater Elevation Contours, Lower Zone, November 10, 2016

6 PCP Concentrations in GW, Upper Zone and Beyond Confining Unit Boundary, November 2016

7 PCP Concentrations and Groundwater Elevations, LW004S, April 1997 – November 2016

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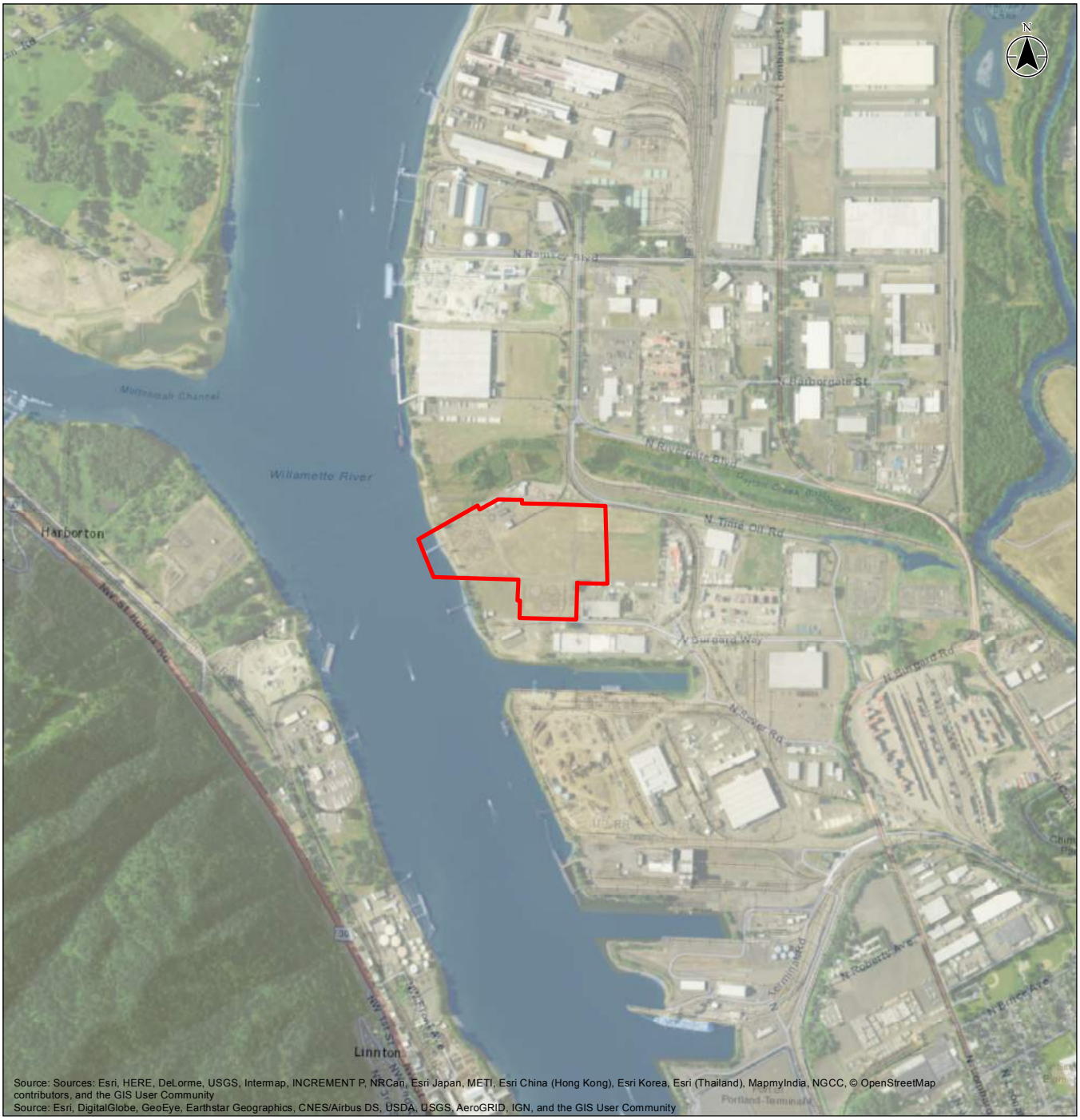

Legend

- <all other values>
- TOC Property Boundary

0 0.1 0.2 miles

1:20,000 (at original document size of 8.5x11)

Stantec

Project Location
10350 North Time Oil Road
Portland, Oregon

185703252
Prepared by DH on 2016-08-31
Technical Review by KV on 2016-09-01
Independent Review by RB on 2016-09-01

Client/Project

TOC Holdings Co., NW Terminal

Figure No.
1

Title

PROJECT LOCATION

Notes

1. Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet

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7618095

718503

Groundwater Treatment System
Main Gate
Warehouse Building
Groundwater Treatment System Storage Tanks
Time Oil Access Road
Time Oil Road
Office
Loading Rack (Removed)
Warehouse
Former Aviation Gasoline Storage Area (Tanks Removed)
Topographic Mound
Loading Dock and Fueling Lines
Former PCP Mixing Area and Warehouse (Warehouse Removed)
Former Butane Storage Tank (Removed)
West Property
Central Property (No Further Action 2014 13.13 acres)
East Property (No Further Action 2003 21.72 acres)
Property Sold by TOC, 2016; (property boundary estimated)10 acres
Former Crosby and Overton Tank Farm Area(Tanks Removed)
Former Main Terminal Tank Farm Area (Tanks Removed)
Gate
Loading Rack (Removed)
Former Bell Terminal Tank Farm Area (Tanks Removed)
N

7618095

718503

Notes
1. Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet

Legend

- Manhole
- Site
- West Property
- No Further Action Boundary
- Property Sold by TOC, 2016
- Concrete Wall
- Former Structure Outline
- Current Structure Outline
- Fence
- TOC Property Boundary
- Storm Drain
- Topographic Contour (1-Foot Interval)

0 175 350 Feet

1:2,600 (At original document size of 11x17)

Stantec

Project Location
10350 North Time Oil Road
Portland, Oregon

185703252
Prepared by DH on 2016-08-31
Technical Review by KV on 2016-9-01
Independent Review by RB on 2016-9-01

Client/Project
TOC Holdings Co., NW Terminal

Figure No.
2

Title
TERMINAL PROPERTIES AND SITE FEATURES

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J:\Pre_MED\AD\OR\Clients\Time_Oil\Portland_Terminal\ASPP Plan 2017\Fig2_new_terminal_properties.mxd Revised: 2017-05-15 By: dahutchins

Notes

1. Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet

Legend

- ISCO Observation Well[3]
- Lower Zone Monitoring Well[3]
- Lower Zone Recovery Well[3]
- Upper Zone Monitoring Well[3]
- Upper Zone Recovery Well[3]
- West Property
- Manhole
- Mean High Water Level (+13 ft NAVD88)
- Upper Zone Horizontal Recovery Well
- Upper Zone Horizontal Recovery Well (Screened Interval)
- Concrete Wall
- Topographic Contour (1-Foot Interval)
- Former Structure Outline
- Current Structure Outline
- Fence
- TOC Property Boundary
- Storm Drain

0 100 200 Feet

1:1,550 (At original document size of 11x17)

Stantec

Project Location
10350 North Time Oil Road
Portland, Oregon

185703252
Prepared by DH on 2016-08-31
Technical Review by KV on 2016-9-01
Independent Review by RB on 2016-9-01

Client/Project
TOC Holdings Co., NW Terminal

Figure No.
3

Title
GROUNDWATER MONITORING LOCATIONS

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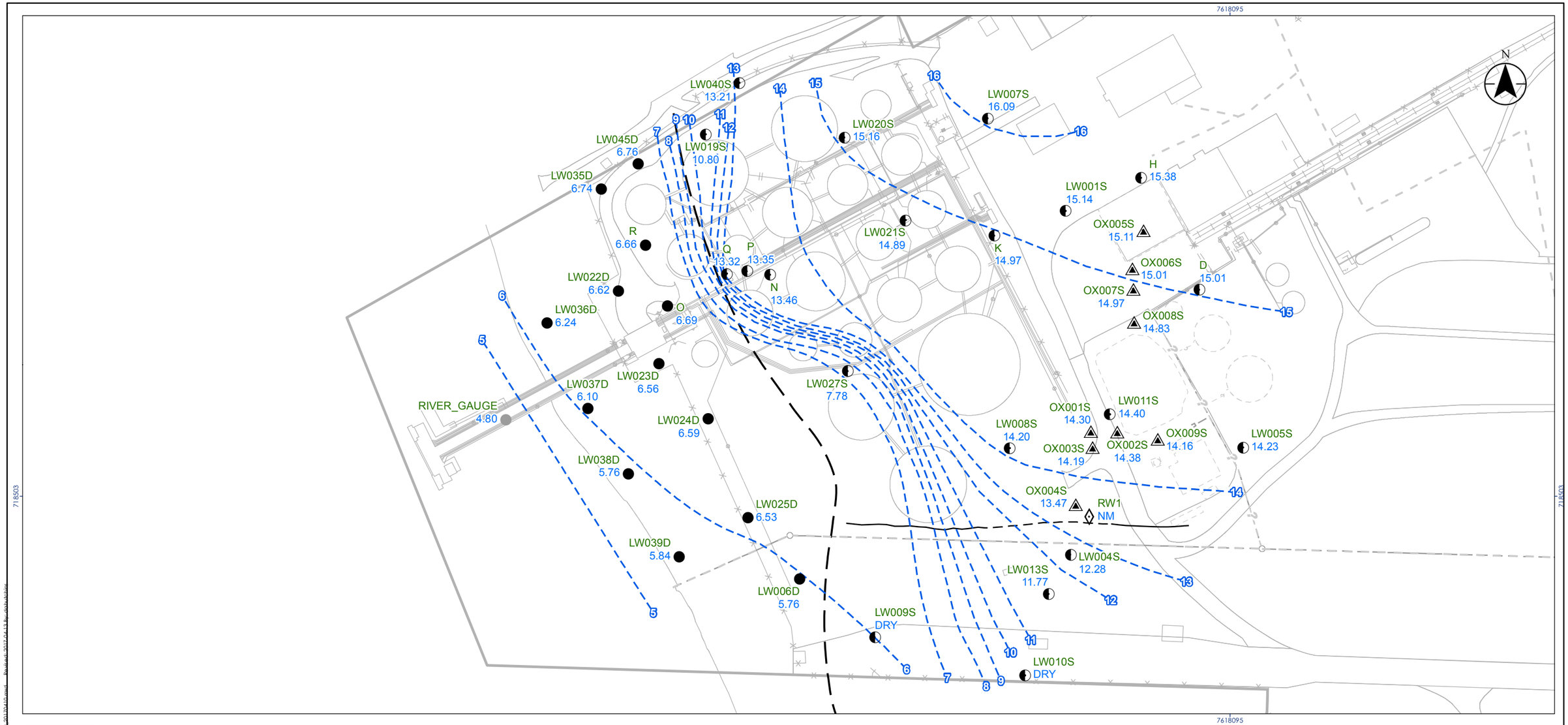

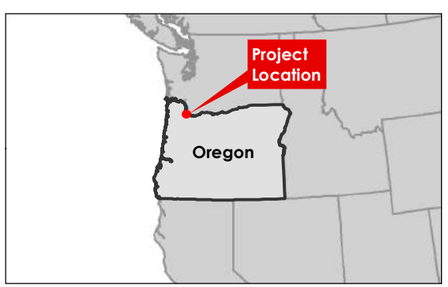

Legend

- LW027S 10.59 — Groundwater Sample Location Identifier and Groundwater Elevation (ft, MSL) (NM = Not Measured)
- Upper Zone Monitoring Well
- River Gauge
- ISCO Observation Well
- Lower Zone Monitoring Well
- Upper Zone Recovery Well
- HRW1 — Horizontal Recovery Well
- 15 — Estimated Groundwater Elevation Contour (ft, MSL)
- Approximate Extent of Confining Unit Between Upper and Lower Zones
- Storm Drain
- Manhole
- TOC Property Boundary
- Fence Line

0 90 180 Feet

1:1,400 (At original document size of 11x17)

Notes:

1. Groundwater levels measured on November 10, 2016.
2. Tank structures and associated piping were removed from the site during tank demolition activities in summer 2009.
3. Well LW009S is intermittently dry; therefore, the extent of the upper zone can change based on seasonal conditions.
4. NM = Not Measured. Recovery well RW1 inaccessible due to pump.

Stantec

Project Location
10350 North Time Oil Road
Portland, Oregon

185703252
Prepared by DH on 2017-04-10
Technical Review by KV on 2017-4-15
Independent Review by RB on 2017-4-15

Client/Project
TOC Holdings Co., NW Terminal

Figure No.
4

Title
GROUNDWATER ELEVATION CONTOURS, UPPER ZONE AND BEYOND CONFINING UNIT NOVEMBER 10, 2016

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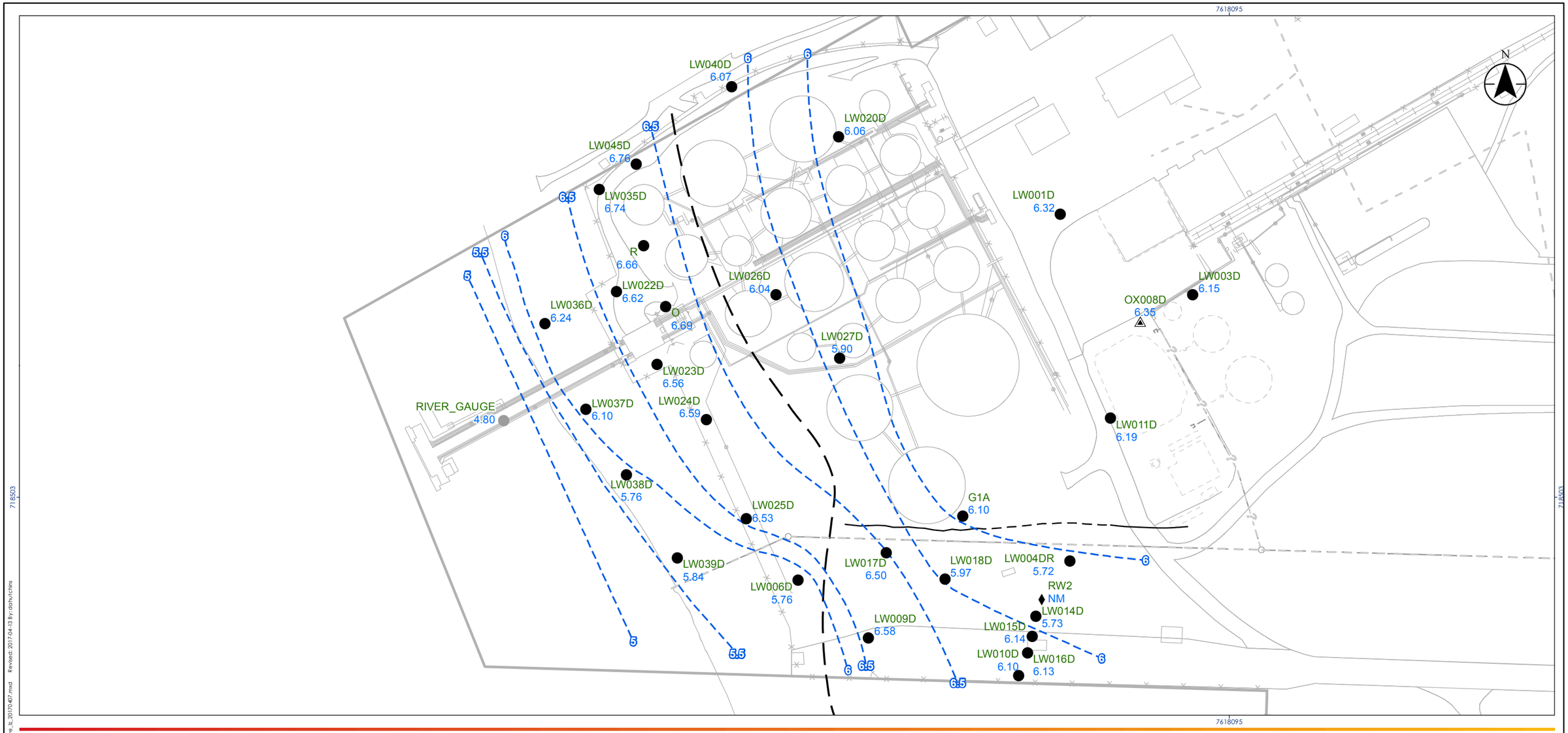

Legend

LW027S 10.59 — Groundwater Sample Location Identifier and Groundwater Elevation (ft, MSL) (NM = Not Measured)

- River Gauge
- Lower ISCO Observation Well
- Lower Zone Monitoring Well
- Lower Zone Recovery Well
- HRW1 — Horizontal Recovery Well
- 15 — Estimated Groundwater Elevation Contour (ft, MSL)
- Approximate Extent of Confining Unit Between Upper and Lower Zones
- Storm Drain
- Manhole
- TOC Property Boundary
- Fence Line

0 90 180 Feet

1:1,400 (At original document size of 11x17)

Notes:

1. Groundwater levels measured on November 10, 2016.
2. Tank structures and associated piping were removed from the site during tank demolition activities in summer 2009.
3. NM = Not Measured. Recovery well RW2 inaccessible due to pump.

Stantec

Project Location
10350 North Time Oil Road
Portland, Oregon

185703252
Prepared by DH on 2017-04-10
Technical Review by KV on 2017-04-15
Independent Review by RB on 2017-04-15

Client/Project
TOC Holdings Co., NW Terminal

Figure No.
5

Title
GROUNDWATER ELEVATION CONTOURS, LOWER ZONE NOVEMBER 10, 2016

U:\Pre_MEDAD\OR\Clients\Time_Oil\Portland_Terminal\GIS\MXD\MapDocs\4Q16\Fig-5_gwe_lz_20170407.mxd Revised: 2017-04-13 By: dshutchins

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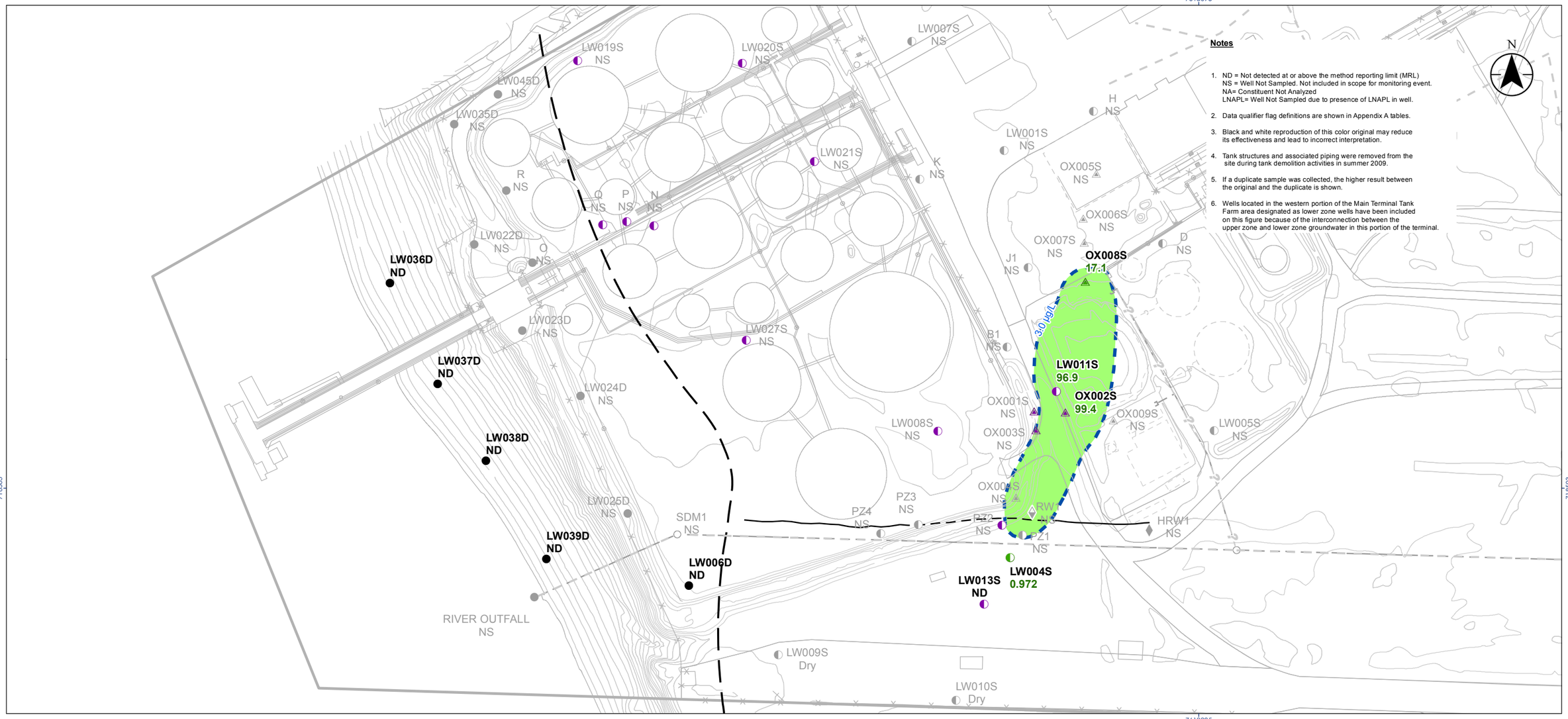

Notes

1. ND = Not detected at or above the method reporting limit (MRL)
   NS = Well Not Sampled. Not included in scope for monitoring event.
   NA= Constituent Not Analyzed
   LNAPL= Well Not Sampled due to presence of LNAPL in well.
2. Data qualifier flag definitions are shown in Appendix A tables.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
4. Tank structures and associated piping were removed from the site during tank demolition activities in summer 2009.
5. If a duplicate sample was collected, the higher result between the original and the duplicate is shown.
6. Wells located in the western portion of the Main Terminal Tank Farm area designated as lower zone wells have been included on this figure because of the interconnection between the upper zone and lower zone groundwater in this portion of the terminal.

0 80 160 Feet

1:1,200 (At original document size of 11x17)

Legend

- OX002S 2050 — Groundwater Sample Location Identifier and PCP Concentration (µg/L)
- Well Previously Contained Product
- Upper Zone Monitoring Well
- Lower Zone Monitoring Well Beyond Confining Unit Boundary
- Upper Zone Recovery Well
- ISCO Observation Well
- HRW1 — Horizontal Recovery Well
- Minimum Preliminary Screening Level For PCP (3.0 µg/L; National Recommended Water Quality Criteria, Organism Only; EPA 2004; Joint Source Control Strategy [JSCS], EPA/DEQ 2005)
- Approximate Extent of Confining Unit Between Upper and Lower Zones
- Storm Drain
- Manhole
- TOC Property Boundary
- Fence Line

Stantec

Project Location
10350 North Time Oil Road
Portland, Oregon

185703252
Prepared by DH on 2017-04-12
Technical Review by KV on 2017-4-20
Independent Review by RB on 2017-4-20

Client/Project
TOC Holdings Co., NW Terminal

Figure No.
6

Title
PCP CONCENTRATIONS IN GW, UPPER ZONE AND BEYOND CONFINING UNIT BOUNDARY, NOVEMBER 2016

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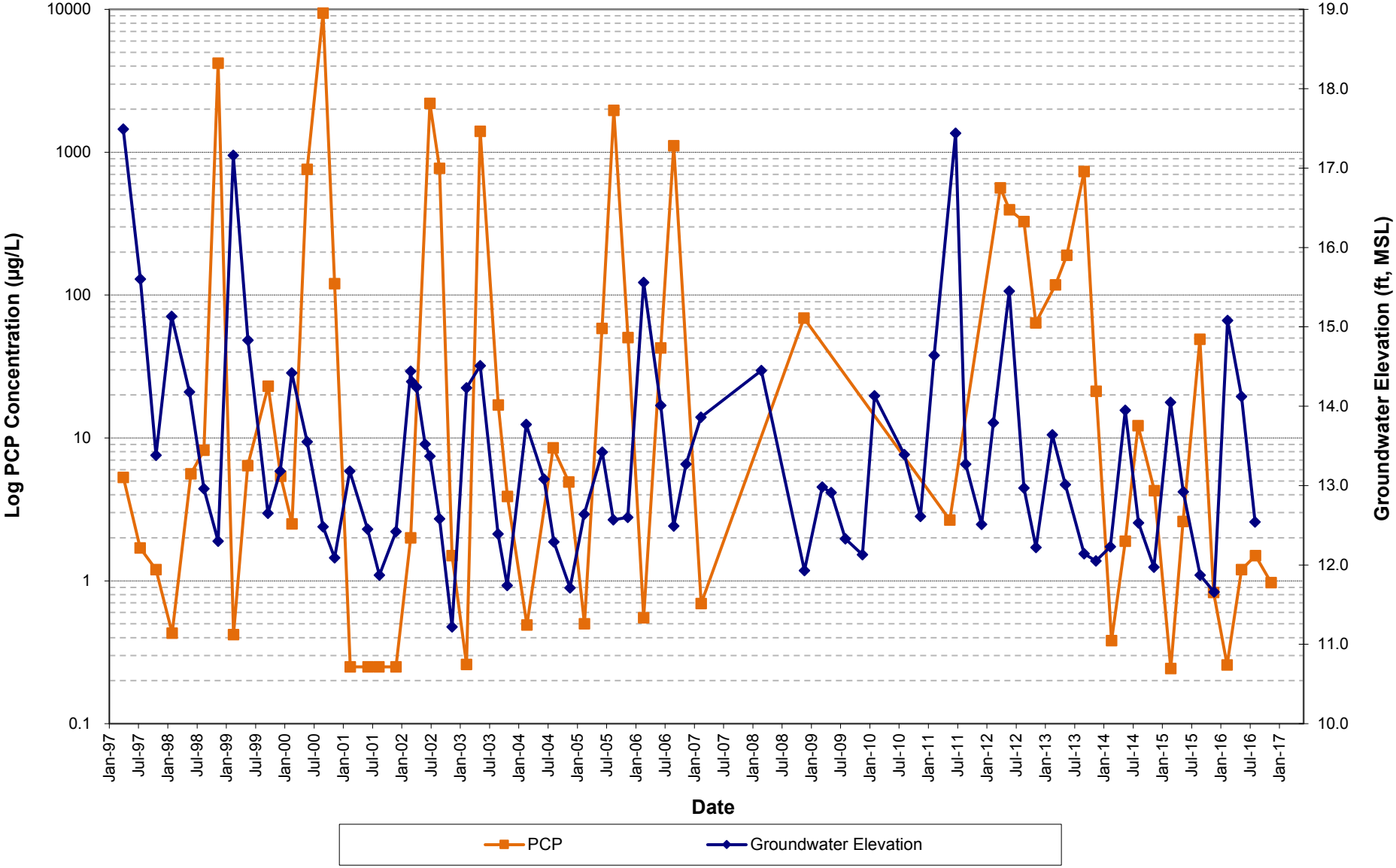
FIGURE 7
PCP CONCENTRATIONS AND GROUNDWATER ELEVATIONS
LW004S
April 1997 - November 2016



Appendix B

Tables

1 Groundwater Level Measurements, Fourth Quarter 2016
2 Groundwater Analytical Results, Upper Zone Wells, Fourth Quarter 2016
3 Groundwater Analytical Results, Lower Zone Wells, Fourth Quarter 2016
4 Groundwater Interim Action Operations

TABLE 1
GROUNDWATER LEVEL MEASUREMENTS
FOURTH QUARTER 2016
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
Shallow Wells:							
D	11/10/2016	09:56	30.04	15.03	15.01	----	
H	11/10/2016	10:03	27.08	11.70	15.38	----	
K	11/10/2016	10:14	29.42	14.45	14.97	----	
L	11/10/2016	NM	28.10	NM	NM	NM	
N	11/10/2016	11:37	31.40	17.94	13.46	----	
P	11/10/2016	11:35	29.98	16.63	13.35	---	
Q	11/10/2016	11:34	30.36	17.04	13.32	----	
LW001S	11/10/2016	10:05	27.96	12.82	15.14	----	
LW004S	11/10/2016	08:51	30.32	18.04	12.28	---	
LW005S	11/10/2016	09:32	30.79	16.56	14.23	----	
LW007S	11/10/2016	10:16	28.10	12.01	16.09	----	
LW008S	11/10/2016	09:37	31.28	17.08	14.20	----	
LW009S	11/10/2016	09:08	31.04	DRY	DRY	DRY	
LW010S	11/10/2016	09:02	30.75	DRY	DRY	DRY	
LW011S	11/10/2016	09:27	29.10	14.70	14.40	----	
LW013S	11/10/2016	08:54	30.17	18.40	11.77	----	
LW019S	11/10/2016	10:27	27.72	17.02	10.80	0.13	
LW020S	11/10/2016	11:16	29.51	14.35	15.16	----	
LW021S	11/10/2026	11:18	30.29	15.40	14.89	----	
LW027S	11/10/2016	11:52	30.59	22.81	7.78	----	
LW040S	11/10/2016	10:25	33.70	20.49	13.21	----	
OX001S	11/10/2016	09:23	33.38	19.08	14.30	----	
OX002S	11/10/2016	09:25	28.95	14.57	14.38	----	
OX003S	11/10/2016	09:29	30.01	15.82	14.19	----	
OX004S	11/10/2016	09:20	33.51	20.04	13.47	----	
OX005S	11/10/2016	09:47	30.74	15.63	15.11	----	
OX006S	11/10/2016	09:49	31.03	16.02	15.01	----	
OX007S	11/10/2016	09:50	30.68	15.71	14.97	----	
OX008S	11/10/2016	09:51	30.74	15.91	14.83	----	
OX009S	11/10/2016	09:29	31.14	16.98	14.16	----	
RW1	11/10/2016	NM	31.46	NM	NM	NM	
Deep Wells:							
G1A	11/10/2016	09:39	29.72	23.62	6.10	----	
O	11/10/2016	11:29	32.03	25.34	6.69	----	
R	11/10/2016	11:26	30.47	23.81	6.66	----	
LW001D	11/10/2016	10:06	28.31	21.99	6.32	----	
LW003D	11/10/2016	09:59	30.80	24.65	6.15	----	
LW004DR	11/10/2016	08:52	30.11	24.39	5.72	----	
LW006D	11/10/2016	11:08	30.84	25.08	5.76	----	
LW009D	11/10/2016	09:05	30.98	24.40	6.58	----	
LW010D	11/10/2016	09:03	31.12	25.02	6.10	----	
LW011D	11/10/2016	09:26	29.04	22.85	6.19	----	
LW014D	11/10/2016	08:56	30.54	24.81	5.73	----	
LW015D	11/10/2016	08:59	30.85	24.71	6.14	----	
LW016D	11/10/2016	09:00	28.40	22.27	6.13	----	
LW017D	11/10/2016	11:56	27.82	21.32	6.50	----	
LW018D	11/10/2016	10:02	27.82	21.85	5.97	----	
LW020D	11/10/2016	11:14	29.51	23.45	6.06	----	
LW022D	11/10/2016	10:49	32.56	25.94	6.62	----	
LW023D	11/10/2016	10:48	31.41	24.85	6.56	----	
LW024D	11/10/2016	11:47	33.47	26.88	6.59	----	
LW025D	11/10/2016	11:06	35.38	28.85	6.53	----	
LW026D	11/10/2016	11:48	31.49	25.45	6.04	----	
LW027D	11/10/2016	12:21	29.71	23.81	5.90	----	
LW035D	11/10/2016	10:40	33.19	26.45	6.74	----	
LW036D	11/10/2016	10:53	11.30	5.06	6.24	----	
LW037D	11/10/2016	10:54	10.84	4.74	6.10	----	
LW038D	11/10/2016	10:56	10.21	4.45	5.76	----	
LW039D	11/10/2016	10:58	9.35	3.51	5.84	----	
LW040D	11/10/2016	10:24	33.77	27.70	6.07	----	
LW045D	11/10/2016	10:39	33.36	26.60	6.76	----	
OX008D	11/10/2016	09:53	30.84	24.49	6.35	----	
RW-2	11/10/2016	NM	30.68	NM	NM	NM	

TABLE 1
GROUNDWATER LEVEL MEASUREMENTS
FOURTH QUARTER 2016
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
Other:							
RIVER_GAUGE	11/10/2016	11:03	28.13	23.33	4.80	----	

Notes:
NM Not measured.
NA Not available.
-- No measurable product or odor observed.
* Well Point

(a) Reference Elevation (Ref. Elev) is the north side of the top of the 1.25-, 2- or 4-inch well casing, reference elevation surveys were conducted by Zarosinski-Tatone Engineers, Inc., Portland, Oregon. For the river gauge, the reference elevation was measured at a marked location on the south side of the dock on the Willamette River.

(b) Depth to water (DTW) measured from surveyed reference elevation [see note (1)].

(c) Where LNAPL thickness measured, groundwater elevation adjusted to account for the presence of LNAPL in the well using the method in "*Estimation of Free Hydrocarbon Volume from Fluid Levels in* Monitoring Wells" [Lenhard and Parker 1990;Groundwater 28(1):57-67].

TABLE 2
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER 2016
TOC HOLDINGS NORTHWEST TERMINAL, PORTLAND, OREGON

Parameter	SLVs[1]	HRW1 NS	LW004S 11/12/2016	LW010S NS	LW011S 11/11/2016	LW013S 11/11/2016	LW019S NS	LW020S 11/9/2016	OX002S 11/11/2016	OX008S 11/12/2016	Q 11/13/2016	SDM1 NS
SEMIVOLATILES (µg/L)												
EPA 8270C												
1,2,4-Trichlorobenzene	70	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
1,2-Dichlorobenzene	14	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
1,2-Dinitrobenzene	--	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
1,3-Dichlorobenzene	71	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
1,3-Dinitrobenzene	--	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
1,4-Dichlorobenzene	15	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
1,4-Dinitrobenzene	--	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
1-Methylnaphthalene	--	NS	0.0777U	NS	4.81U	0.0194U	NS	NA	**2.04**	0.192U	NA	NS
2,2`-oxybis(1-chloropropane)*	--	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
2,3,4,6-Tetrachlorophenol	--	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
2,3,5,6-Tetrachlorophenol	--	NS	0.971U	NS	60.1U	0.243U	NS	NA	**33.4**	**5.16**	NA	NS
2,4,5-Trichlorophenol	3600	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
2,4,6-Trichlorophenol	2.4	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
2,4-Dichlorophenol	290	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
2,4-Dimethylphenol	850	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
2,4-Dinitrophenol	150	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
2,4-Dinitrotoluene	3.4	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
2,6-Dinitrotoluene	29000[2]	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
2-Chloronaphthalene	--	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
2-Chlorophenol	150	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
2-Methylnaphthalene	2.1	NS	0.0777U	NS	4.81U	0.0194U	NS	NA	**2.81**	0.192U	NA	NS
2-Methylphenol	13	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
2-Nitroaniline	--	NS	1.94U	NS	120U	0.485U	NS	NA	48.1U	4.81U	NA	NS
2-Nitrophenol	--	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
3+4-Methylphenol	--	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
3-Nitroaniline	--	NS	1.94U	NS	120U	0.485U	NS	NA	24U	4.81U	NA	NS
4,6-Dinitro-2-methylphenol	--	NS	1.94U	NS	120U	0.485U	NS	NA	24U	4.81U	NA	NS
4-Bromophenyl-phenylether	--	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
4-Chloro-3-methylphenol	--	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
4-Chloroaniline	--	NS	1.94U	NS	120U	0.485U	NS	NA	24U	4.81U	NA	NS
4-Chlorophenylphenyl ether	--	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
4-Nitroaniline	--	NS	1.94U	NS	120U	0.485U	NS	NA	24U	4.81U	NA	NS
4-Nitrophenol	150	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
Acenaphthene	520	NS	0.0388U	NS	2.4U	0.00971U	NS	NA	0.481U	0.0962U	NA	NS
Acenaphthylene	--	NS	0.0388U	NS	2.4U	0.00971U	NS	NA	0.481U	0.0962U	NA	NS
Aniline	--	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
Anthracene	0.73	NS	0.0388U	NS	2.4U	**0.0279**	NS	NA	0.481U	0.0962U	NA	NS
Benzo(a)anthracene	0.018	NS	0.0388U	NS	2.4U	0.00971U	NS	NA	0.481U	0.0962U	NA	NS
Benzo(a)pyrene	0.014	NS	0.0505U	NS	3.12U	0.0126U	NS	NA	0.625U	0.125U	NA	NS
Benzo(b)fluoranthene	0.018	NS	0.0583U	NS	3.61U	0.0146U	NS	NA	0.721U	0.144U	NA	NS
Benzo(g,h,i)perylene	--	NS	0.0388U	NS	2.4U	0.00971U	NS	NA	0.481U	0.0962U	NA	NS
Benzo(k)fluoranthene	0.018	NS	0.0583U	NS	3.61U	0.0146U	NS	NA	0.721U	0.144U	NA	NS
Benzoic acid	42	NS	3.88U	NS	240U	1.94U	NS	NA	48.1U	9.62U	NA	NS
Benzyl alcohol	8.6	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
Bis(2-chloroethoxy)methane	--	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
Bis-(2-Chloroethyl) Ether	0.53	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
Bis(2-ethylhexyl)phthalate	2.2	NS	1.94U	NS	120U	0.485U	NS	NA	24U	4.81U	NA	NS
Butyl benzyl phthalate	3	NS	1.94U	NS	120U	0.485U	NS	NA	24U	4.81U	NA	NS
Carbazole	--	NS	0.0583U	NS	3.61U	0.0146U	NS	NA	0.721U	0.144U	NA	NS
Chrysene	0.018	NS	0.0388U	NS	2.4U	0.00971U	NS	NA	0.481U	0.0962U	NA	NS
Dibenzo(a,h)anthracene	0.21[2]	NS	0.0388U	NS	2.4U	0.00971U	NS	NA	0.481U	0.0962U	NA	NS
Dibenzofuran	3.7	NS	0.0388U	NS	2.4U	0.00971U	NS	NA	0.481U	0.0962U	NA	NS
Diethyl phthalate	3	NS	1.94U	NS	120U	0.485U	NS	NA	24U	4.81U	NA	NS
Dimethyl phthalate	3	NS	1.94U	NS	120U	0.485U	NS	NA	24U	4.81U	NA	NS
Di-n-butyl phthalate	3	NS	1.94U	NS	120U	0.485U	NS	NA	24U	4.81U	NA	NS
Di-n-octyl phthalate	3	NS	1.94U	NS	120U	0.485U	NS	NA	24U	4.81U	NA	NS
Fluoranthene	140	NS	0.0388U	NS	2.4U	0.00971U	NS	NA	0.481U	0.0962U	NA	NS
Fluorene	3.9	NS	0.0388U	NS	2.4U	0.00971U	NS	NA	0.481U	0.192U	NA	NS
Hexachlorobenzene	0.00029	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
Hexachlorobutadiene	9.3	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
Hexachlorocyclopentadiene	5.2	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
Hexachloroethane	3.3	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS

TABLE 2
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER 2016
TOC HOLDINGS NORTHWEST TERMINAL, PORTLAND, OREGON

Parameter	SLVs[1]	HRW1 NS	LW004S 11/12/2016	LW010S NS	LW011S 11/11/2016	LW013S 11/11/2016	LW019S NS	LW020S 11/9/2016	OX002S 11/11/2016	OX008S 11/12/2016	Q 11/13/2016	SDM1 NS
Indeno(1,2,3-cd)pyrene	0.018	NS	0.0388U	NS	2.4U	0.00971U	NS	NA	0.481U	0.0962U	NA	NS
Naphthalene	12	NS	0.0777U	NS	4.81U	0.0194U	NS	NA	**6.51**	**1.5JL**	NA	NS
Nitrobenzene	690	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
N-Nitrosodimethylamine	3	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
N-Nitroso-di-n-propylamine	0.51	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
N-Nitrosodiphenylamine	6	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
Pentachlorophenol	3	NS	**0.972**	NS	**96.9**	0.0971U	NS	NA	**99.4**	**17.1**	NA	NS
Phenanthrene	--	NS	0.0388U	NS	2.4U	0.00971U	NS	NA	0.481U	0.0962U	NA	NS
Phenol	2560	NS	0.971U	NS	60.1U	0.243U	NS	NA	12U	2.4U	NA	NS
Pyrene	4000	NS	0.0388U	NS	2.4U	0.00971U	NS	NA	0.481U	0.0962U	NA	NS
VOLATILES (µg/L)												
EPA 8260B												
1,1,1,2-Tetrachloroethane	--	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
1,1,1-Trichloroethane	11	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
1,1,2,2-Tetrachloroethane	4	NS	0.25U	NS	0.5U	0.25U	NS	NA	1U	0.25U	NA	NS
1,1,2-Trichloroethane	16	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
1,1-Dichloroethane	47	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
1,1-Dichloroethene	43000[2]	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
1,1-Dichloropropene	--	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
1,2,3-Trichlorobenzene	--	NS	1U	NS	1U	1U	NS	NA	2U	1U	NA	NS
1,2,3-Trichloropropane	--	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	1U	NA	NS
1,2,4-Trichlorobenzene	70	NS	1U	NS	1U	1U	NS	NA	2U	1U	NA	NS
1,2,4-Trimethylbenzene	1700[2]	NS	0.5U	NS	**79.4**	0.5U	NS	NA	**225**	**102**	NA	NS
1,2-Dibromo-3-chloropropane	--	NS	2.5U	NS	2.5U	2.5U	NS	NA	5U	2.5U	NA	NS
1,2-Dibromoethane (EDB)	--	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
1,2-Dichlorobenzene	14	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
1,2-Dichloroethane (EDC)	--	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
1,2-Dichloropropane	15	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
1,3,5-Trimethylbenzene	23000[2]	NS	0.5U	NS	**22.4**	0.5U	NS	NA	**54.1**	**32**	NA	NS
1,3-Dichlorobenzene	71	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
1,3-Dichloropropane	--	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
1,4-Dichlorobenzene	15	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
2,2-Dichloropropane	--	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
2-Butanone (MEK)	14000	NS	5U	NS	5U	5U	NS	NA	10U	5U	NA	NS
2-Chlorotoluene	--	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
2-Hexanone	99	NS	5U	NS	5U	5U	NS	NA	10U	5U	NA	NS
4-Chlorotoluene	--	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
4-Isopropyltoluene	--	NS	0.5U	NS	**3.39JL**	0.5U	NS	NA	**4.39**	**1.05JL**	NA	NS
4-Methyl-2-Pentanone (MiBK)	170	NS	5U	NS	5U	5U	NS	NA	10U	5U	NA	NS
Acetone	1500	NS	10U	NS	10U	10U	NS	NA	20U	10U	NA	NS
Benzene	51	NS	0.1U	NS	0.1U	0.1U	NS	NA	0.2U	0.1U	NA	NS
Bromobenzene	--	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
Bromochloromethane	--	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
Bromodichloromethane	450[2]	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
Bromoform	140	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
Bromomethane	1200[2]	NS	5U	NS	5U	5U	NS	NA	10U	5U	NA	NS
Carbon tetrachloride	1.6	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
Chlorobenzene	50	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
Chloroethane	2400000[2]	NS	5U	NS	5U	5U	NS	NA	10U	5U	NA	NS
Chloroform	28	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
Chloromethane	22000[2]	NS	2.5U	NS	2.5U	2.5U	NS	NA	5U	2.5U	NA	NS
cis-1,2-Dichloroethene	24000[2]	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
cis-1,3-Dichloropropene	0.055	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
Dibromochloromethane	--	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
Dibromomethane	--	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
Dichlorodifluoromethane	--	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
Ethylbenzene	7.3	NS	0.25U	NS	**13.1**	0.25U	NS	NA	**16.6**	**1.28**	NA	NS
Hexachlorobutadiene	9.3	NS	2.5U	NS	2.5U	2.5U	NS	NA	5U	2.5U	NA	NS
Isopropylbenzene	--	NS	0.5U	NS	**6.45**	0.5U	NS	NA	**14.9**	**5.71**	NA	NS
m,p-Xylene	1.8	NS	0.5U	NS	**12.1**	0.5U	NS	NA	**16.4**	*0.83*	NA	NS
Methyl tert-butyl ether (MTBE)	62000[2]	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
Methylene chloride	500	NS	1.5U	NS	1.5U	1.5U	NS	NA	3U	1.5U	NA	NS

TABLE 2
GROUNDWATER ANALYTICAL RESULTS - UPPER ZONE WELLS
FOURTH QUARTER 2016
TOC HOLDINGS NORTHWEST TERMINAL, PORTLAND, OREGON

Parameter	SLVs[1]	HRW1 NS	LW004S 11/12/2016	LW010S NS	LW011S 11/11/2016	LW013S 11/11/2016	LW019S NS	LW020S 11/9/2016	OX002S 11/11/2016	OX008S 11/12/2016	Q 11/13/2016	SDM1 NS
Naphthalene	12	NS	1U	NS	**4.37**	1U	NS	NA	**12.7**	**4.31**	NA	NS
n-Butylbenzene	--	NS	0.5U	NS	**3.27**	0.5U	NS	NA	**6.23**	**3.57JL**	NA	NS
n-Propylbenzene	--	NS	0.25U	NS	**12.7**	0.25U	NS	NA	**27.8**	**11.3**	NA	NS
o-Xylene	13	NS	0.5U	NS	**22.5**	0.25U	NS	NA	**29.3**	**6.84**	NA	NS
sec-Butylbenzene	--	NS	0.5U	NS	**4.68**	0.5U	NS	NA	**9.92**	**6**	NA	NS
Styrene	160000[2]	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
tert-Butylbenzene	--	NS	0.5U	NS	*0.574*	0.5U	NS	NA	*1.1*	**1.16**	NA	NS
Tetrachloroethene (PCE)	5400[2]	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
Toluene	210000[2]	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
trans-1,2-Dichloroethene	14000[2]	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
trans-1,3-Dichloropropene	--	NS	0.5U	NS	0.5U	0.5U	NS	NA	1U	0.5U	NA	NS
Trichloroethene (TCE)	30	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
Trichlorofluoromethane	160000[2]	NS	1U	NS	1U	1U	NS	NA	2U	1U	NA	NS
Vinyl chloride	2.4	NS	0.25U	NS	0.25U	0.25U	NS	NA	0.5U	0.25U	NA	NS
NWTPH-G (µg/L)												
Gasoline-Range Hydrocarbons	13000[2]	NS	50U	NS	**2550**	50U	NS	**608**	**4180**	**1890**	**3600**	NS
NWTPH-Dx (µg/L)												
Diesel-Range Hydrocarbons	--	NS	**111**	NS	**515**	38.1U	NS	**4250**	**1090**	**867JL**	**7730**	NS
Heavy Oil-Range Hydrocarbons	--	NS	78.4U	NS	*134*	*115*	NS	76.2U	**480**	76.9U	76.9U	NS
TOTAL METALS (µg/L) EPA 6020												
Arsenic	0.14 (3.57)[3]	NS	*0.533*	NS	5.77	*0.689*	NS	**33.2**	**9.81**	**17.5**	NA	NS
Chromium	-- (5)[3]	NS	0.5U	NS	0.5U	0.5U	NS	0.5U	0.5U	0.5U	NA	NS
Copper	3.6 (4)[3]	NS	**1.01**	NS	0.5U	*0.633*	NS	*0.789*	0.5U	0.5U	NA	NS
Lead	0.54 (20)[3]	NS	0.1U	NS	0.1U	0.1U	NS	0.1U	0.1U	0.1U	NA	NS
Nickel	49 (10)[3]	NS	**10.2**	NS	**1.71**	**2.47**	NS	**1.1**	**1.72**	**4.36**	NA	NS
Selenium	35 (5)[3]	NS	0.5U	NS	0.5U	0.5U	NS	0.5U	0.5U	0.5U	NA	NS
Zinc	33 (15)[3]	NS	2U	NS	2U	2U	NS	2U	2U	2U	NA	NS
FIELD PARAMETERS												
Conductivity (µS)	NA	NS	172.4	NS	237	89.6	NS	449	295.5	241.9	632	NS
Dissolved Oxygen (mg/L)	NA	NS	4.02	NS	0.25	5.56	NS	2.95	1.81	1.4	2.18	NS
pH	NA	NS	6.19	NS	6.57	6.43	NS	6.29	6.53	6.45	6.55	NS
Redox (mV)	NA	NS	135	NS	-116	152.3	NS	-113.1	-111.7	-100.6	-116.7	NS
Temperature (°C)	NA	NS	16.7	NS	15.5	15.3	NS	18.6	16	16.2	17	NS
Turbidity (NTU)	NA	NS	1.14	NS	1.37	2.08	NS	3.03	2.12	2.41	26	NS

Notes:
Bold indicates a detection above the method reporting limit (MRL).
Italicized results are results reported between the MDL and MRL and represent estimates only. Confirm

Highlighted results exceed the minimum SLV. Results between the MDL and MRL (italicized) were also highlighted if above the SLV. For metals, highlighted results exceed both the SLV and the site-specific background concentration (Landau 1999).

Highlighted results exceed the SLV, but do not exceed the site-specific background concentration (Landau 1999).

U = Indicates the compound was undetected at the reported concentration.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. Qualifier was assigned based on data validation protocol.
UJ = Indicates the compound was undetected at the estimated method reporting limit. Qualifier was assigned based on data validation protocol.
JL = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. Qualifier was assigned by the laboratory based on their quality
UJL = Indicates the compound was undetected at the estimated method reporting limit. Qualifier was assigned by the laboratory based on their quality control protocol.
µg/L = micrograms per liter (ppb)
NS = Not sampled
NA = Not analyzed

[1] Minimum Screening Level Values (SLVs) are the lowest applicable SLVs based on the Portland Harbor Joint Source Control Strategy (JSCS) Groundwater SLVs (Table 3-1, December 2005, Revised July 16, 2007) and the ODEQ Risk Based Concentrations for individual Chemicals Table (June 7, 2012).

[2] SLV shown is the ODEQ Risk Based Concentrations for individual Chemicals Table (June 7, 2012) which represents the more stringent SLV.

[3] Site-specific metals background levels for groundwater from Table AT1-7, Phase I and II Contaminants of Potential Concern (COPC) Screening Report (Landau 1999); shown in parentheses.

*2,2'-oxybis(1-chloropropane) is also known as bis(2-chloroisopropyl)ether.

TABLE 3
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
FOURTH QUARTER 2016
TOC HOLDINGS NORTHWEST TERMINAL, PORTLAND, OREGON

Parameter	SLVs[1]	LW006D 11/8/2016	LW009D 11/8/2016	LW010D 11/12/2016	LW017D 11/12/2016	LW018D 11/12/2016	LW020D 11/9/2016	LW022D 11/11/2016	LW023D 11/13/2016	LW024D 11/10/2016	LW025D 11/10/2016	LW035D 11/11/2016	LW036D 11/9/2016	LW037D 11/9/2016	LW038D 11/9/2016	LW039D 11/9/2016	X *LW039D Duplicate* 11/9/2016	LW045D 11/11/2016	RW2 11/12/2016	W *RW2 Duplicate* 11/12/2016
SEMIVOLATILES (µg/L)																				
EPA 8270D																				
1,2,4-Trichlorobenzene	70	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
1,2-Dichlorobenzene	14	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
1,2-Dinitrobenzene	--	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	2.45U	2.4U
1,3-Dichlorobenzene	71	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
1,3-Dinitrobenzene	--	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
1,4-Dichlorobenzene	15	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
1,4-Dinitrobenzene	--	0.971U	0.962U	0.24U	4.31U	3.08U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	4.41U	4.09U
1-Methylnaphthalene	--	0.0777U	0.154U	0.0192U	0.725	0.231U	NA	NA	NA	NA	NA	NA	0.019U	0.019U	0.019U	0.0762U	0.0777U	NA	0.686U	0.673U
2,2`-oxybis(1-chloropropane)*	--	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
2,3,4,6-Tetrachlorophenol	--	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
2,3,5,6-Tetrachlorophenol	--	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
2,4,5-Trichlorophenol	3600	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
2,4,6-Trichlorophenol	2.4	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
2,4-Dichlorophenol	290	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
2,4-Dimethylphenol	850	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
2,4-Dinitrophenol	150	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	3.37U
2,4-Dinitrotoluene	3.4	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
2,6-Dinitrotoluene	29000[2]	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	2.45U	2.4U
2-Chloronaphthalene	--	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
2-Chlorophenol	150	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
2-Methylnaphthalene	2.1	0.0777U	0.0769U	0.0192U	0.0784U	0.0769U	NA	NA	NA	NA	NA	NA	0.019U	0.019U	0.019U	0.0762U	0.0777U	NA	0.098U	0.0962U
2-Methylphenol	13	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
2-Nitroaniline	--	1.94U	1.92U	0.481U	1.96U	1.92U	NA	NA	NA	NA	NA	NA	0.476U	0.476U	0.476U	1.9U	1.94U	NA	13.7U	12U
2-Nitrophenol	--	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
3+4-Methylphenol	--	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
3-Nitroaniline	--	1.94U	1.92U	0.481U	1.96U	1.92U	NA	NA	NA	NA	NA	NA	0.476U	0.476U	0.476U	1.9U	1.94U	NA	2.45U	2.4U
4,6-Dinitro-2-methylphenol	--	1.94U	1.92U	0.481U	1.96U	1.92U	NA	NA	NA	NA	NA	NA	0.476U	0.476U	0.476U	1.9U	1.94U	NA	2.45U	2.4U
4-Bromophenyl-phenylether	--	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
4-Chloro-3-methylphenol	--	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	2.45U	1.2U
4-Chloroaniline	--	1.94U	1.92U	0.481U	1.96U	1.92U	NA	NA	NA	NA	NA	NA	0.476U	0.476U	0.476U	1.9U	1.94U	NA	2.45U	2.4U
4-Chlorophenylphenyl ether	--	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
4-Nitroaniline	--	1.94U	1.92U	0.481U	1.96U	1.92U	NA	NA	NA	NA	NA	NA	0.476U	0.476U	0.476U	1.9U	1.94U	NA	2.45U	2.4U
4-Nitrophenol	150	0.971U	0.962U	0.24U	0.98U	1.92U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	2.45U	1.2U
Acenaphthene	520	**0.155**	**0.196**	0.00962U	**0.554**	**0.371**	NA	NA	NA	NA	NA	NA	0.00952U	0.00952U	0.00952U	0.141J	0.0837J	NA	0.392UJ	0.488J
Acenaphthylene	--	0.0388U	0.0385U	0.00962U	0.157U	0.135U	NA	NA	NA	NA	NA	NA	0.00952U	0.00952U	0.00952U	0.0381U	0.0388U	NA	0.196U	0.192U
Aniline	--	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
Anthracene	0.73	0.0388U	*0.0478*	**0.0324**	*0.072*	*0.0392*	NA	NA	NA	NA	NA	NA	0.00952U	0.00952U	0.00952U	0.0381U	0.0388U	NA	0.049U	*0.0505*
Benzo(a)anthracene	0.018	0.0388U	0.0385U	0.00962U	0.0392U	0.0385U	NA	NA	NA	NA	NA	NA	0.00952U	0.00952U	0.00952U	0.0381U	0.0388U	NA	0.049U	0.0481U
Benzo(a)pyrene	0.014	0.0505U	0.05U	0.0125U	0.051U	0.05U	NA	NA	NA	NA	NA	NA	0.0124U	0.0124U	0.0124U	0.0495U	0.0505U	NA	0.0637U	0.0625U
Benzo(b)fluoranthene	0.018	0.0583U	0.0577U	0.0144U	0.0588U	0.0577U	NA	NA	NA	NA	NA	NA	0.0143U	0.0143U	0.0143U	0.0571U	0.0583U	NA	0.0735U	0.0721U
Benzo(g,h,i)perylene	--	0.0388U	0.0385U	0.00962U	0.0392U	0.0385U	NA	NA	NA	NA	NA	NA	0.00952U	0.00952U	0.00952U	0.0381U	0.0388U	NA	0.049U	0.0481U
Benzo(k)fluoranthene	0.018	0.0583U	0.0577U	0.0144U	0.0588U	0.0577U	NA	NA	NA	NA	NA	NA	0.0143U	0.0143U	0.0143U	0.0571U	0.0583U	NA	0.0735U	0.0721U
Benzoic acid	42	7.77U	7.69U	1.92U	9.8U	8.46U	NA	NA	NA	NA	NA	NA	0.952U	0.952U	0.952U	3.81U	3.88U	NA	11.3U	9.62U
Benzyl alcohol	8.6	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
Bis(2-chloroethoxy)methane	--	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
Bis-(2-Chloroethyl) Ether	0.53	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
Bis(2-ethylhexyl)phthalate	2.2	1.94U	1.92U	0.481U	1.96U	1.92U	NA	NA	NA	NA	NA	NA	0.476U	0.476U	0.476U	1.9U	1.94U	NA	2.45U	2.4U
Butyl benzyl phthalate	3	1.94U	1.92U	0.481U	1.96U	1.92U	NA	NA	NA	NA	NA	NA	0.476U	0.476U	0.476U	1.9U	1.94U	NA	2.45U	2.4U
Carbazole	--	0.0583U	0.0577U	0.0144U	0.0588U	0.0577U	NA	NA	NA	NA	NA	NA	0.0143U	0.0143U	0.0143U	0.0571U	0.0583U	NA	0.0735U	0.0721U
Chrysene	0.018	0.0388U	0.0385U	0.00962U	0.0392U	0.0385U	NA	NA	NA	NA	NA	NA	0.00952U	0.00952U	0.00952U	0.0381U	0.0388U	NA	0.049U	0.0481U
Dibenzo(a,h)anthracene	0.21[2]	0.0388U	0.0385U	0.00962U	0.0392U	0.0385U	NA	NA	NA	NA	NA	NA	0.00952U	0.00952U	0.00952U	0.0381U	0.0388U	NA	0.049U	0.0481U

TABLE 3
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
FOURTH QUARTER 2016
TOC HOLDINGS NORTHWEST TERMINAL, PORTLAND, OREGON

Parameter	SLVs[1]	LW006D 11/8/2016	LW009D 11/8/2016	LW010D 11/12/2016	LW017D 11/12/2016	LW018D 11/12/2016	LW020D 11/9/2016	LW022D 11/11/2016	LW023D 11/13/2016	LW024D 11/10/2016	LW025D 11/10/2016	LW035D 11/11/2016	LW036D 11/9/2016	LW037D 11/9/2016	LW038D 11/9/2016	LW039D 11/9/2016	X *LW039D Duplicate* 11/9/2016	LW045D 11/11/2016	RW2 11/12/2016	W *RW2 Duplicate* 11/12/2016
Dibenzofuran	3.7	0.0388U	0.0385U	0.00962U	**0.422**	**0.348**	NA	NA	NA	NA	NA	NA	0.00952U	0.00952U	0.00952U	0.0381U	0.0388U	NA	**0.363**	**0.417**
Diethyl phthalate	3	1.94U	1.92U	0.481U	1.96U	1.92U	NA	NA	NA	NA	NA	NA	0.476U	0.476U	0.476U	1.9U	1.94U	NA	2.45U	2.4U
Dimethyl phthalate	3	1.94U	1.92U	0.481U	1.96U	1.92U	NA	NA	NA	NA	NA	NA	0.476U	0.476U	0.476U	1.9U	1.94U	NA	2.45U	2.4U
Di-n-butyl phthalate	3	1.94U	1.92U	0.481U	1.96U	1.92U	NA	NA	NA	NA	NA	NA	0.476U	0.476U	0.476U	1.9U	1.94U	NA	2.45U	2.4U
Di-n-octyl phthalate	3	1.94U	1.92U	0.481U	1.96U	1.92U	NA	NA	NA	NA	NA	NA	0.476U	0.476U	0.476U	1.9U	1.94U	NA	2.45U	2.4U
Fluoranthene	140	0.0388U	0.0385U	0.00962U	**0.0901**	0.0385U	NA	NA	NA	NA	NA	NA	0.00952U	0.00952U	0.00952U	0.0381U	0.0388U	NA	0.049U	0.0481U
Fluorene	3.9	0.0388U	*0.0688*	0.00962U	**0.777**	**0.55**	NA	NA	NA	NA	NA	NA	0.00952U	0.00952U	0.00952U	0.0381U	0.0388U	NA	**0.518**	**0.572**
Hexachlorobenzene	0.00029	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
Hexachlorobutadiene	9.3	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
Hexachlorocyclopentadiene	5.2	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
Hexachloroethane	3.3	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
Indeno(1,2,3-cd)pyrene	0.018	0.0388U	0.0385U	0.00962U	0.0392U	0.0385U	NA	NA	NA	NA	NA	NA	0.00952U	0.00952U	0.00952U	0.0381U	0.0388U	NA	0.049U	0.0481U
Naphthalene	12	0.175U	0.173U	0.0192U	0.549U	0.462U	NA	NA	NA	NA	NA	NA	0.019U	0.019U	0.019U	0.0762U	0.0777U	NA	0.588U	0.625U
Nitrobenzene	690	0.971U	0.962U	0.24U	2.35U	1.92U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	2.45U	2.4U
N-Nitrosodimethylamine	3	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
N-Nitroso-di-n-propylamine	0.51	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
N-Nitrosodiphenylamine	6	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
Pentachlorophenol	3	0.388U	0.385U	0.0962U	0.392U	0.385U	NA	NA	NA	NA	NA	NA	0.0952U	0.0952U	0.0952U	0.381U	0.388U	NA	0.49U	*0.548*
Phenanthrene	--	0.0777U	**0.157**	0.0192U	**0.357**	**0.214**	NA	NA	NA	NA	NA	NA	0.00952U	0.00952U	0.00952U	0.0381U	0.0388U	NA	**0.192**	**0.223**
Phenol	2560	0.971U	0.962U	0.24U	0.98U	0.962U	NA	NA	NA	NA	NA	NA	0.238U	0.238U	0.238U	0.952U	0.971U	NA	1.23U	1.2U
Pyrene	4000	0.0388U	*0.0645*	0.00962U	**0.0795**	0.0385U	NA	NA	NA	NA	NA	NA	0.00952U	0.00952U	0.00952U	0.0381U	0.0388U	NA	0.049U	0.0481U
VOLATILES (µg/L)																				
EPA 8260B																				
1,1,1,2-Tetrachloroethane	--	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
1,1,1-Trichloroethane	11	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
1,1,2,2-Tetrachloroethane	4	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
1,1,2-Trichloroethane	16	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
1,1-Dichloroethane	47	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
1,1-Dichloroethene	43000[2]	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
1,1-Dichloropropene	--	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
1,2,3-Trichlorobenzene	--	1U	1U	1U	1U	1U	NA	NA	NA	NA	NA	NA	1U	1U	1U	1U	1U	NA	1U	1U
1,2,3-Trichloropropane	--	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
1,2,4-Trichlorobenzene	70	1U	1U	1U	1U	1U	NA	NA	NA	NA	NA	NA	1U	1U	1U	1U	1U	NA	1U	1U
1,2,4-Trimethylbenzene	1700[2]	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
1,2-Dibromo-3-chloropropane	--	2.5U	2.5U	2.5U	2.5U	2.5U	NA	NA	NA	NA	NA	NA	2.5U	2.5U	2.5U	2.5U	2.5U	NA	2.5U	2.5U
1,2-Dibromoethane (EDB)	--	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
1,2-Dichlorobenzene	14	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
1,2-Dichloroethane (EDC)	--	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
1,2-Dichloropropane	15	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
1,3,5-Trimethylbenzene	23000[2]	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
1,3-Dichlorobenzene	71	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
1,3-Dichloropropane	--	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
1,4-Dichlorobenzene	15	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
2,2-Dichloropropane	--	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
2-Butanone (MEK)	14000	5U	5U	5U	5U	5U	NA	NA	NA	NA	NA	NA	5U	5U	5U	5U	5U	NA	5U	5U
2-Chlorotoluene	--	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
2-Hexanone	99	5U	5U	5U	5U	5U	NA	NA	NA	NA	NA	NA	5U	5U	5U	5U	5U	NA	5U	5U
4-Chlorotoluene	--	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
4-Isopropyltoluene	--	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
4-Methyl-2-Pentanone (MiBK)	170	5U	5U	5U	5U	5U	NA	NA	NA	NA	NA	NA	5U	5U	5U	5U	5U	NA	5U	5U
Acetone	1500	10U	10U	10U	10U	10U	NA	NA	NA	NA	NA	NA	10U	10U	10U	10U	10U	NA	10U	10U
Benzene	51	0.1U	0.1U	0.1U	0.1U	0.1U	NA	NA	NA	NA	NA	NA	0.1U	0.1U	0.1U	0.1U	0.1U	NA	0.1U	0.1U
Bromobenzene	--	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U

TABLE 3
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
FOURTH QUARTER 2016
TOC HOLDINGS NORTHWEST TERMINAL, PORTLAND, OREGON

Parameter	SLVs[1]	LW006D 11/8/2016	LW009D 11/8/2016	LW010D 11/12/2016	LW017D 11/12/2016	LW018D 11/12/2016	LW020D 11/9/2016	LW022D 11/11/2016	LW023D 11/13/2016	LW024D 11/10/2016	LW025D 11/10/2016	LW035D 11/11/2016	LW036D 11/9/2016	LW037D 11/9/2016	LW038D 11/9/2016	LW039D 11/9/2016	X *LW039D Duplicate* 11/9/2016	LW045D 11/11/2016	RW2 11/12/2016	W *RW2 Duplicate* 11/12/2016
Bromochloromethane	--	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
Bromodichloromethane	450[2]	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
Bromoform	140	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
Bromomethane	1200[2]	5U	5U	5U	5U	5U	NA	NA	NA	NA	NA	NA	5U	5U	5U	5U	5U	NA	5U	5U
Carbon tetrachloride	1.6	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
Chlorobenzene	50	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
Chloroethane	2400000[2]	5U	5U	5U	5U	5U	NA	NA	NA	NA	NA	NA	5U	5U	5U	5U	5U	NA	5U	5U
Chloroform	28	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
Chloromethane	22000[2]	2.5U	2.5U	2.5U	2.5U	2.5U	NA	NA	NA	NA	NA	NA	2.5U	2.5U	2.5U	2.5U	2.5U	NA	2.5U	2.5U
cis-1,2-Dichloroethene	24000[2]	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
cis-1,3-Dichloropropene	0.055	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
Dibromochloromethane	--	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
Dibromomethane	--	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
Dichlorodifluoromethane	--	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
Ethylbenzene	7.3	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
Hexachlorobutadiene	9.3	2.5U	2.5U	2.5U	2.5U	2.5U	NA	NA	NA	NA	NA	NA	2.5U	2.5U	2.5U	2.5U	2.5U	NA	2.5U	2.5U
Isopropylbenzene	--	0.5U	**25.6**	0.5U	**5.04**	**8.92**	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	**13.5**	**11.2**
m,p-Xylene	1.8	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
Methyl tert-butyl ether (MTBE)	62000[2]	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
Methylene chloride	500	1.5U	1.5U	1.5U	1.5U	1.5U	NA	NA	NA	NA	NA	NA	1.5U	1.5U	1.5U	1.5U	1.5U	NA	1.5U	1.5U
Naphthalene	12	1U	2U	1U	1U	1U	NA	NA	NA	NA	NA	NA	1U	1U	1U	1U	1U	NA	1U	1U
n-Butylbenzene	--	0.5U	0.5U	0.5U	0.5U	**1.56**	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	**9.27**	**7.93**
n-Propylbenzene	--	0.25U	**3.91**	0.25U	**1.92**	**0.706**	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	**8.16**	**7.45**
o-Xylene	13	0.5U	*0.32*	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.5U	NA	0.5U	0.25U
sec-Butylbenzene	--	0.5U	**2.4**	0.5U	**8.85**	**10.1**	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	**20.6**	**19.7**
Styrene	160000[2]	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
tert-Butylbenzene	--	**2.64**	**2.9**	0.5U	*3.05*	*3.64*	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	**3.77J**	**2.88J**
Tetrachloroethene (PCE)	5400[2]	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
Toluene	210000[2]	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
trans-1,2-Dichloroethene	14000[2]	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
trans-1,3-Dichloropropene	--	0.5U	0.5U	0.5U	0.5U	0.5U	NA	NA	NA	NA	NA	NA	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
Trichloroethene (TCE)	30	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
Trichlorofluoromethane	160000[2]	1U	1U	1U	1U	1U	NA	NA	NA	NA	NA	NA	1U	1U	1U	1U	1U	NA	1U	1U
Vinyl chloride	2.4	0.25U	0.25U	0.25U	0.25U	0.25U	NA	NA	NA	NA	NA	NA	0.25U	0.25U	0.25U	0.25U	0.25U	NA	0.25U	0.25U
NWTPH-Gx (µg/L)																				
Gasoline-Range Hydrocarbons	13000[2]	**1200**	**1440**	50U	**2200**	**2050**	**117**	50U	**845**	**1740**	**179**	50U	50U	50U	50U	*89.9*	**100**	50U	**2100**	**2060**
NWTPH-Dx (µg/L)																				
Diesel-Range Hydrocarbons	--	**1190**	**684**	**55.9**	**1460**	**1230**	**416**	**537**	**6970**	**5050**	**1370**	**2560**	**110**	38.1U	37.7U	**603**	**521**	**2070**	**1690JL**	**2060JL**
Heavy Oil-Range Hydrocarbons	--	76.9U	76.2U	76.2U	80U	75.5U	76.2U	430U	76.9U	76.2U	381U	79.2U	76.2U	76.2U	75.5U	75.5U	75.5U	377U	76.9U	76.2U
TOTAL METALS (µg/L)																				
EPA 6020																				
Arsenic	0.14 (3.57)[3]	**16.9**	**30.3**	**19.2**	**16.3**	**18.7**	**37.1**	**1.01**	**51.2**	**50.2**	**14**	**8.37**	*0.856*	*0.656*	*0.756*	**4.74**	**4.52**	NA	**23.4**	**23.2**
Chromium	-- (5)[3]	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	*0.662*	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	NA	0.5U	0.5U
Copper	3.6 (4)[3]	0.5U	0.5U	**8.72**	**1.01J**	*0.556*	0.5U	*0.722*	**1.16J**	0.5U	0.5U	**23.4**	*0.967*	*0.833*	**1.17**	0.5U	0.5U	NA	0.5U	0.5U
Lead	0.54 (20)[3]	0.1U	0.1U	0.1U	*0.101*	0.1U	0.1U	0.1U	**0.242**	0.1U	**0.389**	0.1U	0.789	0.1U	*0.167*	0.1U	0.1U	NA	*0.144J*	*0.178J*
Nickel	49 (10)[3]	**2.8**	**1.16**	**4.19**	**2.49**	**3.26**	**4.49**	*0.8*	**2.53**	**3.04**	**3.08**	**5.32**	*0.744*	*0.6*	**1.04**	0.5UJ	*0.644J*	NA	**12.2**	**12.2**
Selenium	35 (5)[3]	1U	1U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	0.5U	1U	1U	1U	1U	NA	0.5U	0.5U
Zinc	33 (15)[3]	2U	2U	**6.86**	*2.16*	*3.34*	2U	2U	*3.03*	2U	2U	2U	*2.54*	**3.07**	*2.98*	2U	2U	NA	**50.4**	**52.5**

TABLE 3
GROUNDWATER ANALYTICAL RESULTS - LOWER ZONE WELLS
FOURTH QUARTER 2016
TOC HOLDINGS NORTHWEST TERMINAL, PORTLAND, OREGON

Parameter	SLVs[1]	LW006D 11/8/2016	LW009D 11/8/2016	LW010D 11/12/2016	LW017D 11/12/2016	LW018D 11/12/2016	LW020D 11/9/2016	LW022D 11/11/2016	LW023D 11/13/2016	LW024D 11/10/2016	LW025D 11/10/2016	LW035D 11/11/2016	LW036D 11/9/2016	LW037D 11/9/2016	LW038D 11/9/2016	LW039D 11/9/2016	X *LW039D Duplicate* 11/9/2016	LW045D 11/11/2016	RW2 11/12/2016	W *RW2 Duplicate* 11/12/2016
DISSOLVED METALS (µg/L)																				
EPA 6020																				
Arsenic	0.14 (3.57)[3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.5U	*0.511*	0.5U	**7.32**	**7.14**	NA	NA	NA
Chromium	-- (5)[3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1U	1U	1U	1U	1U	NA	NA	NA
Copper	2.7 (4)[3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1U	1U	1U	1U	1U	NA	NA	NA
Lead	0.54 (20)[3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2U	0.2U	0.2U	0.2U	0.2U	NA	NA	NA
Nickel	16 (10)[3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1U	1U	1U	1U	1U	NA	NA	NA
Selenium	5 (5)[3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2U	2U	2U	2U	2U	NA	NA	NA
Zinc	36 (15)[3]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4U	4U	4U	**6.53J**	4UJ	NA	NA	NA
MNA PARAMETERS (mg/L)																				
Biochemical Oxygen Demand (SM 52	--	**13.3**	**21.8**	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.14U	3.14U	3.14U	**25.5**	**25.2**	NA	NA	NA
Nitrate + Nitrite (300.0)	--	0.04U	**0.02**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.3**	**0.44**	**0.46**	0.02U	0.02U	NA	NA	NA
Nitrite - N (EPA 300.0)	--	0.25UJ	0.25UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.25UJ	0.25UJ	0.25UJ	0.25UJ	0.25UJ	NA	NA	NA
N-Nitrite (353.2)	--	0.02UJ	0.02UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.02UJ	0.02UJ	0.02UJ	0.02UJ	**0.02J**	NA	NA	NA
Nitrate - N (300.0)	--	0.25UJ	0.25UJ	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.27J**	**0.431J**	**0.439J**	0.25UJ	0.25UJ	NA	NA	NA
Nitrate - N (353.2)	--	0.04U	**0.02**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.3**	**0.44**	**0.46**	0.02U	0.02U	NA	NA	NA
Sulfate (EPA 300.0)	--	1U	1U	NA	NA	NA	NA	NA	NA	NA	NA	NA	**3.62**	**3.68**	**4.07**	1U	1U	NA	NA	NA
Total Organic Carbon (SM 5310)	--	**4.81**	**2.9**	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.61**	**1.84**	**1.56**	**2.4**	**2.43**	NA	NA	NA
FIELD PARAMETERS																				
Conductivity (µs)	NA	358.7	267	213.7	235.7	261.8	347.6	146	579	443.2	230.9	460.1	65.1	67.4	68.7	98.9	98.9	413.8	387.2	387.2
Dissolved Oxygen (mg/L)	NA	0.76	0.55	0.27	1.42	0.39	2.14	5.29	2.69	1.21	0.53	0.91	2.1	3.87	4.28	0.26	0.26	2.43	0.6	0.6
pH	NA	6.68	6.4	6.86	6.31	6.43	6.72	6.39	6.59	6.54	6.11	6.23	6.68	6.76	6.51	6.33	6.33	6.02	6.43	6.43
Redox (mV)	NA	-109.4	-114.9	-135	-51.9	-103.5	-90.9	82.2	-141.6	-84	-31.4	-27.3	131.4	136.4	113	-85.4	-85.4	59.4	-90.5	-90.5
Temperature (°C)	NA	15.9	16.56	14.6	15.3	14.6	165	16.3	14.9	16	16.7	15.7	15.9	14.6	14.8	14.9	14.9	17.3	16	16
Turbidity (NTU)	NA	1.83	1.29	1.05	1.76	1.34	2.77	14.8	14.3	6.55	24.4	1.94	2.6	3.3	4.57	1.37	1.37	2.2	0.99	0.99

Notes:
Bold indicates a detection above the method reporting limit (MRL).
Italicized results are results reported between the MDL and MRL and represent estimates only. Confirmed detections are those results that are above the MRL.
Highlighted results exceed the minimum SLV. Results between the MDL and MRL (italicized) were also highlighted if above the SLV. For metals, highlighted results exceed both the SLV and the site-specific background concentration (Landau 1999).
Highlighted results exceed the SLV, but do not exceed the site-specific background concentration (Landau 1999).

U = Indicates the compound was undetected at the reported concentration.
J = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. Qualifier was assigned based on data validation protocol.
UJ = Indicates the compound was undetected at the estimated method reporting limit. Qualifier was assigned based on data validation protocol.
JL = Indicates the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample. Qualifier was assigned by the laboratory based on their quality control protocol.
UJL = Indicates the compound was undetected at the estimated method reporting limit. Qualifier was assigned by the laboratory based on their quality control protocol.
µg/L = micrograms per liter (ppb)
MNA = Monitored Natural Attenuation
NS = Not sampled
NA = Not analyzed

[1] Minimum Screening Level Values (SLVs) are the lowest applicable SLVs based on the Portland Harbor Joint Source Control Strategy (JSCS) Groundwater SLVs (Table 3-1, December 2005, Revised July 16, 2007) and the ODEQ Risk Based Concentrations for individual Chemicals Table (June 7, 2012).
[2] SLV shown is the ODEQ Risk Based Concentrations for individual Chemicals Table (June 7, 2012) which represents the more stringent SLV.
[3] Site-specific metals background levels for groundwater from Table AT1-7, Phase I and II Contaminants of Potential Concern (COPC) Screening Report (Landau 1999); shown in parentheses.

*2,2'-oxybis(1-chloropropane) is also known as bis(2-chloroisopropyl)ether.

TABLE 4
GROUNDWATER INTERIM ACTION OPERATIONS
TOC HOLDINGS NORTHWEST TERMINAL
PORTLAND, OREGON

Monitoring Period	RW-2 Discharge				HRW-1 Discharge				SDM-1 Discharge				Treatment System Discharge			Comments
	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Treated (gal)	Sample Date	Discharge PCP Concentration (µg/L)	
First Quarter 2016																
January 2016	0			0.0000	25,900			0.0005	157,500			0.0005	90,200	1/14/2016	ND (0.196)	Treatment System Sample = Effluent; RW2 not pumping.
February 2016	0	2/11/2016	0.538	0.0000	34,000	2/11/2016	2	0.0006	184,300	2/11/2016	0.40	0.0006	92,462	2/9/2016	ND (0.192)	Treatment System Sample = Effluent; RW2 not pumping. RW-2 PCP concentration was <0.538 (ND) and SDM-1 PCP concentration was <0.400 (ND).
March 2016	0			0.0000	43,000			0.0008	206,400			0.0007	103,867	3/9/2016	0.275	Treatment System Sample = Effluent; RW2 not pumping.
Quarterly Totals	*0*			*0.0000*	*102,900*			*0.0020*	*548,200*			*0.0018*	*286,529*			
Second Quarter 2016																
April 2016	0			0.0000	30,000			0.0099	174,900			0.3420	106,923	4/20/2016	4.12	Treatment System Sample = Effluent; RW2 not pumping.
May 2016	0	5/12/2016	0.521	0.0000	14,000	5/13/2016	39.6	0.0046	176,000	5/13/2016	234	0.3441	72,109	5/10/2016	13.6	Treatment System Sample = Effluent; RW2 not pumping. RW-2 PCP concentration was <0.521 (ND).
June 2016	0			0.0000	1,100			0.0004	84,100			0.1644	37,959	6/20/2016	0.533	Treatment System Sample = Effluent; RW2 not pumping.
Quarterly Totals	*0*			*0.0000*	*45,100*			*0.0149*	*435,000*			*0.8505*	*216,991*			
Third Quarter 2016																
July 2016	0			0.0000	0			0.0000	42,200			0.0511	19,773	7/27/2016	1.91	Treatment System Sample = Effluent; RW2 not pumping.
August 2016	0	8/6/2016	0.865	0.0000	0		NS	0.0000	1,100	8/3/2016	145	0.0013	0		NS	No effluent sample; system off
September 2016	0			0.0000	0			0.0000	0			0.0000	0		NS	No effluent sample; system off
Quarterly Totals	*0*			*0.0000*	*0*			*0.0000*	*43,300*			*0.0525*	*19,773*			
FourthQuarter 2016																
October 2016	0			0.0000	0			0.0000	0			0.0000	0		NS	No effluent sample; system off
November 2016	0	11/12/2016	0.49	0.0000	0		NS	0.0000	100		NS	0.0000	0		NS	No effluent sample; system off. RW-2 PCP concentration was <0.490 (ND).
December 2016	0			0.0000	0			0.0000	17,300			0.0000	0		NS	No effluent sample; system off
Quarterly Totals	*0*			*0.0000*	*0*			*0.0000*	*17,400*			*0.0000*	*0*			
Grand Totals	***32,103,929***			***6.694***	***3,441,899***			***3.1430***	***16,202,347***			***36.4763***	***45,960,650***			

ND = Not Detected.

Appendix C

Analytical Lab Reports – Fourth Quarter 2016

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Monday, January 2, 2017

Rebekah Brooks
Stantec Lynnwood
19101 36th Avenue West Suite 203
Lynwood, WA 98036-5759

RE: TOC Groundwater Quarterly / 185703250

Enclosed are the results of analyses for work order A6K0316, which was received by the laboratory on 11/9/2016 at 3:30:00PM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

Apex Laboratories

Darwin Thomas, Business Development Director

The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.

Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LW009D	A6K0316-01	Water	11/08/16 13:00	11/09/16 15:30
LW006D	A6K0316-02	Water	11/08/16 14:55	11/09/16 15:30
LW036D	A6K0316-03	Water	11/09/16 09:30	11/09/16 15:30
LW037D	A6K0316-04	Water	11/09/16 09:40	11/09/16 15:30
LW038D	A6K0316-05	Water	11/09/16 10:30	11/09/16 15:30
LW039D	A6K0316-06	Water	11/09/16 11:00	11/09/16 15:30
X	A6K0316-07	Water	11/09/16 11:30	11/09/16 15:30
TB-110916-1	A6K0316-08	Water	11/09/16 00:00	11/09/16 15:30

Apex Laboratories

Darwin Thomas, Business Development Director

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503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW009D (A6K0316-01)			**Matrix: Water**		**Batch: 6110513**			
Diesel	**684**	38.1	76.2	ug/L	1	11/11/16 21:43	NWTPH-Dx	F-13
Oil	ND	76.2	152	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 74 %*	*Limits: 50-150 %*	"	"	"	
LW006D (A6K0316-02)			**Matrix: Water**		**Batch: 6110513**			
Diesel	**1190**	38.5	76.9	ug/L	1	11/11/16 22:04	NWTPH-Dx	F-13
Oil	ND	76.9	154	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 76 %*	*Limits: 50-150 %*	"	"	"	
LW036D (A6K0316-03)			**Matrix: Water**		**Batch: 6110513**			
Diesel	**110**	38.1	76.2	ug/L	1	11/11/16 22:24	NWTPH-Dx	F-11
Oil	ND	76.2	152	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 77 %*	*Limits: 50-150 %*	"	"	"	
LW037D (A6K0316-04)			**Matrix: Water**		**Batch: 6110513**			
Diesel	ND	38.1	76.2	ug/L	1	11/11/16 22:45	NWTPH-Dx	
Oil	ND	76.2	152	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 77 %*	*Limits: 50-150 %*	"	"	"	
LW038D (A6K0316-05)			**Matrix: Water**		**Batch: 6110513**			
Diesel	ND	37.7	75.5	ug/L	1	11/11/16 23:05	NWTPH-Dx	
Oil	ND	75.5	151	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 77 %*	*Limits: 50-150 %*	"	"	"	
LW039D (A6K0316-06)			**Matrix: Water**		**Batch: 6110513**			
Diesel	**603**	37.7	75.5	ug/L	1	11/11/16 23:25	NWTPH-Dx	F-11
Oil	ND	75.5	151	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 87 %*	*Limits: 50-150 %*	"	"	"	
X (A6K0316-07)			**Matrix: Water**		**Batch: 6110513**			
Diesel	**521**	37.7	75.5	ug/L	1	11/11/16 23:46	NWTPH-Dx	F-11
Oil	ND	75.5	151	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 84 %*	*Limits: 50-150 %*	"	"	"	

Apex Laboratories

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Darwin Thomas, Business Development Director

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503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW009D (A6K0316-01)			**Matrix: Water**		**Batch: 6110436**			
Gasoline Range Organics	**1440**	50.0	100	ug/L	1	11/10/16 17:10	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 108 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*133 %*	*Limits: 50-150 %*	"	"	"	
LW006D (A6K0316-02RE1)			**Matrix: Water**		**Batch: 6110479**			
Gasoline Range Organics	**1200**	50.0	100	ug/L	1	11/11/16 15:00	NWTPH-Gx (MS)	F-13
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 104 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*122 %*	*Limits: 50-150 %*	"	"	"	
LW036D (A6K0316-03)			**Matrix: Water**		**Batch: 6110436**			
Gasoline Range Organics	ND	50.0	100	ug/L	1	11/10/16 16:42	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 95 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*90 %*	*Limits: 50-150 %*	"	"	"	
LW037D (A6K0316-04)			**Matrix: Water**		**Batch: 6110436**			
Gasoline Range Organics	ND	50.0	100	ug/L	1	11/10/16 16:14	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 96 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*90 %*	*Limits: 50-150 %*	"	"	"	
LW038D (A6K0316-05)			**Matrix: Water**		**Batch: 6110436**			
Gasoline Range Organics	ND	50.0	100	ug/L	1	11/10/16 15:47	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 96 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*91 %*	*Limits: 50-150 %*	"	"	"	
LW039D (A6K0316-06)			**Matrix: Water**		**Batch: 6110436**			
Gasoline Range Organics	**89.9**	50.0	100	ug/L	1	11/10/16 15:19	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 96 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*90 %*	*Limits: 50-150 %*	"	"	"	
X (A6K0316-07RE2)			**Matrix: Water**		**Batch: 6110522**			
Gasoline Range Organics	**100**	50.0	100	ug/L	1	11/14/16 15:40	NWTPH-Gx (MS)	F-13
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 100 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*93 %*	*Limits: 50-150 %*	"	"	"	
TB-110916-1 (A6K0316-08)			**Matrix: Water**		**Batch: 6110436**			
Gasoline Range Organics	ND	50.0	100	ug/L	1	11/10/16 12:05	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 96 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*92 %*	*Limits: 50-150 %*	"	"	"	

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Darwin Thomas, Business Development Director

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Tigard, OR 97223
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503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW009D (A6K0316-01)			**Matrix: Water**		**Batch: 6110436**			
Acetone	ND	10.0	20.0	ug/L	1	11/10/16 17:10	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	**2.40**	0.500	1.00	"	"	"	"	
tert-Butylbenzene	**2.90**	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
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Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW009D (A6K0316-01)			**Matrix: Water**		**Batch: 6110436**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	**25.6**	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	2.00	2.00	"	"	"	"	
n-Propylbenzene	**3.91**	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	**0.320**	0.250	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 101 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*102 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*112 %*	*Limits: 80-120 %*	"	"	"	

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19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW006D (A6K0316-02RE1)			**Matrix: Water**		**Batch: 6110479**			
Acetone	ND	10.0	20.0	ug/L	1	11/11/16 15:00	EPA 8260B	Q-30
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	**2.64**	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW006D (A6K0316-02RE1)			**Matrix: Water**		**Batch: 6110479**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.500	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 102 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*103 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*109 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW036D (A6K0316-03)			**Matrix: Water**		**Batch: 6110436**			
Acetone	ND	10.0	20.0	ug/L	1	11/10/16 16:42	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW036D (A6K0316-03)			**Matrix: Water**		**Batch: 6110436**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 96 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*108 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*111 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW037D (A6K0316-04)			**Matrix: Water**		**Batch: 6110436**			
Acetone	ND	10.0	20.0	ug/L	1	11/10/16 16:14	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW037D (A6K0316-04)			**Matrix: Water**		**Batch: 6110436**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 96 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*106 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*114 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW038D (A6K0316-05)			**Matrix: Water**		**Batch: 6110436**			
Acetone	ND	10.0	20.0	ug/L	1	11/10/16 15:47	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW038D (A6K0316-05)			**Matrix: Water**		**Batch: 6110436**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 98 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*106 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*115 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW039D (A6K0316-06)			**Matrix: Water**		**Batch: 6110436**			
Acetone	ND	10.0	20.0	ug/L	1	11/10/16 15:19	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW039D (A6K0316-06)			**Matrix: Water**		**Batch: 6110436**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 97 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*107 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*114 %*	*Limits: 80-120 %*	"	"	"	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
X (A6K0316-07RE2)			**Matrix: Water**		**Batch: 6110522**			
Acetone	ND	10.0	20.0	ug/L	1	11/14/16 15:40	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
X (A6K0316-07RE2)			**Matrix: Water**		**Batch: 6110522**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.500	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*105 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*109 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
TB-110916-1 (A6K0316-08)			**Matrix: Water**		**Batch: 6110436**			
Acetone	ND	10.0	20.0	ug/L	1	11/10/16 12:05	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
TB-110916-1 (A6K0316-08)			**Matrix: Water**		**Batch: 6110436**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*108 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*112 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW009D (A6K0316-01)			**Matrix: Water**					
Batch: 6110515								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	11/12/16 09:51	EPA 300.0	H-06
Nitrite-Nitrogen	ND	---	0.250	"	"	"	"	H-06
Sulfate	ND	---	1.00	"	"	"	"	
LW006D (A6K0316-02)			**Matrix: Water**					
Batch: 6110515								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	11/12/16 10:55	EPA 300.0	H-06
Nitrite-Nitrogen	ND	---	0.250	"	"	"	"	H-06
Sulfate	ND	---	1.00	"	"	"	"	
LW036D (A6K0316-03)			**Matrix: Water**					
Batch: 6110515								
Nitrate-Nitrogen	**0.270**	---	0.250	mg/L	1	11/12/16 11:17	EPA 300.0	H-06
Nitrite-Nitrogen	ND	---	0.250	"	"	"	"	H-06
Sulfate	**3.62**	---	1.00	"	"	"	"	
LW037D (A6K0316-04)			**Matrix: Water**					
Batch: 6110515								
Nitrate-Nitrogen	**0.431**	---	0.250	mg/L	1	11/12/16 11:39	EPA 300.0	H-06
Nitrite-Nitrogen	ND	---	0.250	"	"	"	"	H-06
Sulfate	**3.68**	---	1.00	"	"	"	"	
LW038D (A6K0316-05)			**Matrix: Water**					
Batch: 6110515								
Nitrate-Nitrogen	**0.439**	---	0.250	mg/L	1	11/12/16 12:00	EPA 300.0	H-06
Nitrite-Nitrogen	ND	---	0.250	"	"	"	"	H-06
Sulfate	**4.07**	---	1.00	"	"	"	"	
LW039D (A6K0316-06)			**Matrix: Water**					
Batch: 6110515								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	11/12/16 12:22	EPA 300.0	H-06
Nitrite-Nitrogen	ND	---	0.250	"	"	"	"	H-06
Sulfate	ND	---	1.00	"	"	"	"	
X (A6K0316-07)			**Matrix: Water**					
Batch: 6110515								
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	11/12/16 13:26	EPA 300.0	H-06
Nitrite-Nitrogen	ND	---	0.250	"	"	"	"	H-06
Sulfate	ND	---	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Nitrate + Nitrite by EPA 353.2

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW009D (A6K0316-01)			**Matrix: Water**					
Batch: [CALC]								
Nitrate-Nitrogen	**0.0200**	---	0.0200	mg/L	1	11/15/16 14:20	EPA 353.2 Calc	
Batch: 6110506								
Nitrite-Nitrogen	ND	---	0.0200	"	"	11/11/16 16:23	EPA 353.2	H-06
Batch: 6110568								
Nitrate+Nitrite Nitrogen	**0.0200**	---	0.0200	"	"	11/15/16 14:20	"	
LW006D (A6K0316-02)			**Matrix: Water**					
Batch: [CALC]								
Nitrate-Nitrogen	ND	---	0.0400	mg/L	2	11/15/16 15:32	EPA 353.2 Calc	
Batch: 6110506								
Nitrite-Nitrogen	ND	---	0.0200	"	1	11/11/16 15:21	EPA 353.2	H-06
Batch: 6110568								
Nitrate+Nitrite Nitrogen	ND	---	0.0400	"	2	11/15/16 15:32	"	R-01
LW036D (A6K0316-03)			**Matrix: Water**					
Batch: [CALC]								
Nitrate-Nitrogen	**0.300**	---	0.0200	mg/L	1	11/15/16 14:25	EPA 353.2 Calc	
Batch: 6110506								
Nitrite-Nitrogen	ND	---	0.0200	"	"	11/11/16 15:22	EPA 353.2	H-06
Batch: 6110568								
Nitrate+Nitrite Nitrogen	**0.300**	---	0.0200	"	"	11/15/16 14:25	"	
LW037D (A6K0316-04)			**Matrix: Water**					
Batch: [CALC]								
Nitrate-Nitrogen	**0.440**	---	0.0200	mg/L	1	11/15/16 14:27	EPA 353.2 Calc	
Batch: 6110506								
Nitrite-Nitrogen	ND	---	0.0200	"	"	11/11/16 15:23	EPA 353.2	H-06
Batch: 6110568								
Nitrate+Nitrite Nitrogen	**0.440**	---	0.0200	"	"	11/15/16 14:27	"	
LW038D (A6K0316-05)			**Matrix: Water**					
Batch: [CALC]								
Nitrate-Nitrogen	**0.460**	---	0.0200	mg/L	1	11/15/16 14:43	EPA 353.2 Calc	
Batch: 6110506								
Nitrite-Nitrogen	ND	---	0.0200	"	"	11/11/16 15:24	EPA 353.2	H-06
Batch: 6110568								
Nitrate+Nitrite Nitrogen	**0.460**	---	0.0200	"	"	11/15/16 14:43	"	
LW039D (A6K0316-06)			**Matrix: Water**					
Batch: [CALC]								

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503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Nitrate + Nitrite by EPA 353.2

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW039D (A6K0316-06)			**Matrix: Water**					
Nitrate-Nitrogen	ND	---	0.0200	mg/L	1	11/15/16 14:44	EPA 353.2 Calc	
Batch: 6110506								
Nitrite-Nitrogen	ND	---	0.0200	"	"	11/11/16 15:26	EPA 353.2	H-06
Batch: 6110568								
Nitrate+Nitrite Nitrogen	ND	---	0.0200	"	"	11/15/16 14:44	"	
X (A6K0316-07)			**Matrix: Water**					
Batch: [CALC]								
Nitrate-Nitrogen	ND	---	0.0200	mg/L	1	11/15/16 15:06	EPA 353.2 Calc	
Batch: 6110506								
Nitrite-Nitrogen	**0.0200**	---	0.0200	"	"	11/11/16 16:22	EPA 353.2	H-06
Batch: 6110568								
Nitrate+Nitrite Nitrogen	ND	---	0.0200	"	"	11/15/16 15:06	"	

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503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW009D (A6K0316-01)			**Matrix: Water**		**Batch: 6110545**			
Acenaphthene	**0.196**	0.0385	0.0769	ug/L	4	11/14/16 21:04	EPA 8270D	
Acenaphthylene	ND	0.0385	0.0769	"	"	"	"	
Anthracene	**0.0478**	0.0385	0.0769	"	"	"	"	J
Benz(a)anthracene	ND	0.0385	0.0769	"	"	"	"	
Benzo(a)pyrene	ND	0.0500	0.115	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0577	0.115	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0577	0.115	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0385	0.0769	"	"	"	"	
Chrysene	ND	0.0385	0.0769	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0385	0.0769	"	"	"	"	
Fluoranthene	ND	0.0385	0.0769	"	"	"	"	
Fluorene	**0.0688**	0.0385	0.0769	"	"	"	"	J
Indeno(1,2,3-cd)pyrene	ND	0.0385	0.0769	"	"	"	"	
1-Methylnaphthalene	ND	0.154	0.154	"	"	"	"	
2-Methylnaphthalene	ND	0.0769	0.154	"	"	"	"	
Naphthalene	ND	0.173	0.173	"	"	"	"	R-02
Phenanthrene	**0.157**	0.0385	0.0769	"	"	"	"	
Pyrene	**0.0645**	0.0385	0.0769	"	"	"	"	J
Carbazole	ND	0.0577	0.115	"	"	"	"	
Dibenzofuran	ND	0.0385	0.0769	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.962	1.92	"	"	"	"	
2-Chlorophenol	ND	0.962	1.92	"	"	"	"	
2,4-Dichlorophenol	ND	0.962	1.92	"	"	"	"	
2,4-Dimethylphenol	ND	0.962	1.92	"	"	"	"	
2,4-Dinitrophenol	ND	0.962	1.92	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1.92	3.85	"	"	"	"	
2-Methylphenol	ND	0.962	1.92	"	"	"	"	
3+4-Methylphenol(s)	ND	0.962	1.92	"	"	"	"	
2-Nitrophenol	ND	0.962	1.92	"	"	"	"	
4-Nitrophenol	ND	0.962	1.92	"	"	"	"	
Pentachlorophenol (PCP)	ND	0.385	0.769	"	"	"	"	
Phenol	ND	0.962	1.92	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	0.962	1.92	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	0.962	1.92	"	"	"	"	
2,4,5-Trichlorophenol	ND	0.962	1.92	"	"	"	"	
2,4,6-Trichlorophenol	ND	0.962	1.92	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW009D (A6K0316-01)			**Matrix: Water**		**Batch: 6110545**			
Bis(2-ethylhexyl)phthalate	ND	1.92	3.85	ug/L	4	"	EPA 8270D	
Butyl benzyl phthalate	ND	1.92	3.85	"	"	"	"	
Diethylphthalate	ND	1.92	3.85	"	"	"	"	
Dimethylphthalate	ND	1.92	3.85	"	"	"	"	
Di-n-butylphthalate	ND	1.92	3.85	"	"	"	"	
Di-n-octyl phthalate	ND	1.92	3.85	"	"	"	"	
N-Nitrosodimethylamine	ND	0.962	1.92	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	0.962	1.92	"	"	"	"	
N-Nitrosodiphenylamine	ND	0.962	1.92	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	0.962	1.92	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	0.962	1.92	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	0.962	1.92	"	"	"	"	
Hexachlorobenzene	ND	0.962	1.92	"	"	"	"	
Hexachlorobutadiene	ND	0.962	1.92	"	"	"	"	
Hexachlorocyclopentadiene	ND	0.962	1.92	"	"	"	"	
Hexachloroethane	ND	0.962	1.92	"	"	"	"	
2-Chloronaphthalene	ND	0.962	1.92	"	"	"	"	
1,2-Dichlorobenzene	ND	0.962	1.92	"	"	"	"	
1,3-Dichlorobenzene	ND	0.962	1.92	"	"	"	"	
1,4-Dichlorobenzene	ND	0.962	1.92	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.962	1.92	"	"	"	"	
4-Bromophenyl phenyl ether	ND	0.962	1.92	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.962	1.92	"	"	"	"	
Aniline	ND	0.962	1.92	"	"	"	"	
4-Chloroaniline	ND	1.92	3.85	"	"	"	"	
2-Nitroaniline	ND	1.92	3.85	"	"	"	"	
3-Nitroaniline	ND	1.92	3.85	"	"	"	"	
4-Nitroaniline	ND	1.92	3.85	"	"	"	"	
Nitrobenzene	ND	0.962	1.92	"	"	"	"	
2,4-Dinitrotoluene	ND	0.962	1.92	"	"	"	"	
2,6-Dinitrotoluene	ND	0.962	1.92	"	"	"	"	
1,2-Dinitrobenzene	ND	0.962	1.92	"	"	"	"	
1,3-Dinitrobenzene	ND	0.962	1.92	"	"	"	"	
1,4-Dinitrobenzene	ND	0.962	1.92	"	"	"	"	
Benzoic acid	ND	7.69	7.69	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW009D (A6K0316-01)			**Matrix: Water**		**Batch: 6110545**			
Benzyl alcohol	ND	0.962	1.92	ug/L	4	"	EPA 8270D	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 33 %*	*Limits: 44-120 %*	"	"	"	*S-06*
2-Fluorobiphenyl (Surr)			*48 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*14 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*100 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*19 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*130 %*	*Limits: 43-140 %*	"	"	"	*Q-41*
LW006D (A6K0316-02)			**Matrix: Water**		**Batch: 6110545**			
Acenaphthene	**0.155**	0.0388	0.0777	ug/L	4	11/14/16 21:40	EPA 8270D	
Acenaphthylene	ND	0.0388	0.0777	"	"	"	"	
Anthracene	ND	0.0388	0.0777	"	"	"	"	
Benz(a)anthracene	ND	0.0388	0.0777	"	"	"	"	
Benzo(a)pyrene	ND	0.0505	0.117	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0583	0.117	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0583	0.117	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0388	0.0777	"	"	"	"	
Chrysene	ND	0.0388	0.0777	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0388	0.0777	"	"	"	"	
Fluoranthene	ND	0.0388	0.0777	"	"	"	"	
Fluorene	ND	0.0388	0.0777	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0388	0.0777	"	"	"	"	
1-Methylnaphthalene	ND	0.0777	0.155	"	"	"	"	
2-Methylnaphthalene	ND	0.0777	0.155	"	"	"	"	
Naphthalene	ND	0.175	0.175	"	"	"	"	R-02
Phenanthrene	ND	0.0777	0.0777	"	"	"	"	
Pyrene	ND	0.0388	0.0777	"	"	"	"	
Carbazole	ND	0.0583	0.117	"	"	"	"	
Dibenzofuran	ND	0.0388	0.0777	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.971	1.94	"	"	"	"	
2-Chlorophenol	ND	0.971	1.94	"	"	"	"	
2,4-Dichlorophenol	ND	0.971	1.94	"	"	"	"	
2,4-Dimethylphenol	ND	0.971	1.94	"	"	"	"	
2,4-Dinitrophenol	ND	0.971	1.94	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1.94	3.88	"	"	"	"	
2-Methylphenol	ND	0.971	1.94	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW006D (A6K0316-02)			**Matrix: Water**		**Batch: 6110545**			
3+4-Methylphenol(s)	ND	0.971	1.94	ug/L	4	"	EPA 8270D	
2-Nitrophenol	ND	0.971	1.94	"	"	"	"	
4-Nitrophenol	ND	0.971	1.94	"	"	"	"	
Pentachlorophenol (PCP)	ND	0.388	0.777	"	"	"	"	
Phenol	ND	0.971	1.94	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	0.971	1.94	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	0.971	1.94	"	"	"	"	
2,4,5-Trichlorophenol	ND	0.971	1.94	"	"	"	"	
2,4,6-Trichlorophenol	ND	0.971	1.94	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	1.94	3.88	"	"	"	"	
Butyl benzyl phthalate	ND	1.94	3.88	"	"	"	"	
Diethylphthalate	ND	1.94	3.88	"	"	"	"	
Dimethylphthalate	ND	1.94	3.88	"	"	"	"	
Di-n-butylphthalate	ND	1.94	3.88	"	"	"	"	
Di-n-octyl phthalate	ND	1.94	3.88	"	"	"	"	
N-Nitrosodimethylamine	ND	0.971	1.94	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	0.971	1.94	"	"	"	"	
N-Nitrosodiphenylamine	ND	0.971	1.94	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	0.971	1.94	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	0.971	1.94	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	0.971	1.94	"	"	"	"	
Hexachlorobenzene	ND	0.971	1.94	"	"	"	"	
Hexachlorobutadiene	ND	0.971	1.94	"	"	"	"	
Hexachlorocyclopentadiene	ND	0.971	1.94	"	"	"	"	
Hexachloroethane	ND	0.971	1.94	"	"	"	"	
2-Chloronaphthalene	ND	0.971	1.94	"	"	"	"	
1,2-Dichlorobenzene	ND	0.971	1.94	"	"	"	"	
1,3-Dichlorobenzene	ND	0.971	1.94	"	"	"	"	
1,4-Dichlorobenzene	ND	0.971	1.94	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.971	1.94	"	"	"	"	
4-Bromophenyl phenyl ether	ND	0.971	1.94	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.971	1.94	"	"	"	"	
Aniline	ND	0.971	1.94	"	"	"	"	
4-Chloroaniline	ND	1.94	3.88	"	"	"	"	
2-Nitroaniline	ND	1.94	3.88	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW006D (A6K0316-02)			**Matrix: Water**		**Batch: 6110545**			
3-Nitroaniline	ND	1.94	3.88	ug/L	4	"	EPA 8270D	
4-Nitroaniline	ND	1.94	3.88	"	"	"	"	
Nitrobenzene	ND	0.971	1.94	"	"	"	"	
2,4-Dinitrotoluene	ND	0.971	1.94	"	"	"	"	
2,6-Dinitrotoluene	ND	0.971	1.94	"	"	"	"	
1,2-Dinitrobenzene	ND	0.971	1.94	"	"	"	"	
1,3-Dinitrobenzene	ND	0.971	1.94	"	"	"	"	
1,4-Dinitrobenzene	ND	0.971	1.94	"	"	"	"	
Benzoic acid	ND	7.77	7.77	"	"	"	"	
Benzyl alcohol	ND	0.971	1.94	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 32 %*	*Limits: 44-120 %*	"	"	"	*S-06*
2-Fluorobiphenyl (Surr)			*38 %*	*Limits: 44-120 %*	"	"	"	*S-06*
Phenol-d6 (Surr)			*13 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*89 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*18 %*	*Limits: 19-120 %*	"	"	"	*S-06*
2,4,6-Tribromophenol (Surr)			*120 %*	*Limits: 43-140 %*	"	"	"	*Q-41*
LW036D (A6K0316-03RE1)			**Matrix: Water**		**Batch: 6110545**			
Acenaphthene	ND	0.00952	0.0190	ug/L	1	11/15/16 11:11	EPA 8270D	
Acenaphthylene	ND	0.00952	0.0190	"	"	"	"	
Anthracene	ND	0.00952	0.0190	"	"	"	"	
Benz(a)anthracene	ND	0.00952	0.0190	"	"	"	"	
Benzo(a)pyrene	ND	0.0124	0.0286	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.00952	0.0190	"	"	"	"	
Chrysene	ND	0.00952	0.0190	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00952	0.0190	"	"	"	"	
Fluoranthene	ND	0.00952	0.0190	"	"	"	"	
Fluorene	ND	0.00952	0.0190	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00952	0.0190	"	"	"	"	
1-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
2-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
Naphthalene	ND	0.0190	0.0381	"	"	"	"	
Phenanthrene	ND	0.00952	0.0190	"	"	"	"	
Pyrene	ND	0.00952	0.0190	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW036D (A6K0316-03RE1)			**Matrix: Water**		**Batch: 6110545**			
Carbazole	ND	0.0143	0.0286	ug/L	1	"	EPA 8270D	
Dibenzofuran	ND	0.00952	0.0190	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.238	0.476	"	"	"	"	
2-Chlorophenol	ND	0.238	0.476	"	"	"	"	
2,4-Dichlorophenol	ND	0.238	0.476	"	"	"	"	
2,4-Dimethylphenol	ND	0.238	0.476	"	"	"	"	
2,4-Dinitrophenol	ND	0.238	0.476	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	0.476	0.952	"	"	"	"	
2-Methylphenol	ND	0.238	0.476	"	"	"	"	
3+4-Methylphenol(s)	ND	0.238	0.476	"	"	"	"	
2-Nitrophenol	ND	0.238	0.476	"	"	"	"	
4-Nitrophenol	ND	0.238	0.476	"	"	"	"	
Pentachlorophenol (PCP)	ND	0.0952	0.190	"	"	"	"	
Phenol	ND	0.238	0.476	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	0.238	0.476	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	0.238	0.476	"	"	"	"	
2,4,5-Trichlorophenol	ND	0.238	0.476	"	"	"	"	
2,4,6-Trichlorophenol	ND	0.238	0.476	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	0.476	0.952	"	"	"	"	
Butyl benzyl phthalate	ND	0.476	0.952	"	"	"	"	
Diethylphthalate	ND	0.476	0.952	"	"	"	"	
Dimethylphthalate	ND	0.476	0.952	"	"	"	"	
Di-n-butylphthalate	ND	0.476	0.952	"	"	"	"	
Di-n-octyl phthalate	ND	0.476	0.952	"	"	"	"	
N-Nitrosodimethylamine	ND	0.238	0.476	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	0.238	0.476	"	"	"	"	
N-Nitrosodiphenylamine	ND	0.238	0.476	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	0.238	0.476	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	0.238	0.476	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	0.238	0.476	"	"	"	"	
Hexachlorobenzene	ND	0.238	0.476	"	"	"	"	
Hexachlorobutadiene	ND	0.238	0.476	"	"	"	"	
Hexachlorocyclopentadiene	ND	0.238	0.476	"	"	"	"	
Hexachloroethane	ND	0.238	0.476	"	"	"	"	
2-Chloronaphthalene	ND	0.238	0.476	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW036D (A6K0316-03RE1)			**Matrix: Water**		**Batch: 6110545**			
1,2-Dichlorobenzene	ND	0.238	0.476	ug/L	1	"	EPA 8270D	
1,3-Dichlorobenzene	ND	0.238	0.476	"	"	"	"	
1,4-Dichlorobenzene	ND	0.238	0.476	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.238	0.476	"	"	"	"	
4-Bromophenyl phenyl ether	ND	0.238	0.476	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.238	0.476	"	"	"	"	
Aniline	ND	0.238	0.476	"	"	"	"	
4-Chloroaniline	ND	0.476	0.952	"	"	"	"	
2-Nitroaniline	ND	0.476	0.952	"	"	"	"	
3-Nitroaniline	ND	0.476	0.952	"	"	"	"	
4-Nitroaniline	ND	0.476	0.952	"	"	"	"	
Nitrobenzene	ND	0.238	0.476	"	"	"	"	
2,4-Dinitrotoluene	ND	0.238	0.476	"	"	"	"	
2,6-Dinitrotoluene	ND	0.238	0.476	"	"	"	"	
1,2-Dinitrobenzene	ND	0.238	0.476	"	"	"	"	
1,3-Dinitrobenzene	ND	0.238	0.476	"	"	"	"	
1,4-Dinitrobenzene	ND	0.238	0.476	"	"	"	"	
Benzoic acid	ND	0.952	1.90	"	"	"	"	
Benzyl alcohol	ND	0.238	0.476	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 35 %*	*Limits: 44-120 %*	"	"	"	*S-06*
2-Fluorobiphenyl (Surr)			*41 %*	*Limits: 44-120 %*	"	"	"	*S-06*
Phenol-d6 (Surr)			*13 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*95 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*20 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*88 %*	*Limits: 43-140 %*	"	"	"	*Q-41*

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW037D (A6K0316-04RE1)			**Matrix: Water**		**Batch: 6110545**			
Acenaphthene	ND	0.00952	0.0190	ug/L	1	11/15/16 11:47	EPA 8270D	
Acenaphthylene	ND	0.00952	0.0190	"	"	"	"	
Anthracene	ND	0.00952	0.0190	"	"	"	"	
Benz(a)anthracene	ND	0.00952	0.0190	"	"	"	"	
Benzo(a)pyrene	ND	0.0124	0.0286	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.00952	0.0190	"	"	"	"	
Chrysene	ND	0.00952	0.0190	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00952	0.0190	"	"	"	"	
Fluoranthene	ND	0.00952	0.0190	"	"	"	"	
Fluorene	ND	0.00952	0.0190	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00952	0.0190	"	"	"	"	
1-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
2-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
Naphthalene	ND	0.0190	0.0381	"	"	"	"	
Phenanthrene	ND	0.00952	0.0190	"	"	"	"	
Pyrene	ND	0.00952	0.0190	"	"	"	"	
Carbazole	ND	0.0143	0.0286	"	"	"	"	
Dibenzofuran	ND	0.00952	0.0190	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.238	0.476	"	"	"	"	
2-Chlorophenol	ND	0.238	0.476	"	"	"	"	
2,4-Dichlorophenol	ND	0.238	0.476	"	"	"	"	
2,4-Dimethylphenol	ND	0.238	0.476	"	"	"	"	
2,4-Dinitrophenol	ND	0.238	0.476	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	0.476	0.952	"	"	"	"	
2-Methylphenol	ND	0.238	0.476	"	"	"	"	
3+4-Methylphenol(s)	ND	0.238	0.476	"	"	"	"	
2-Nitrophenol	ND	0.238	0.476	"	"	"	"	
4-Nitrophenol	ND	0.238	0.476	"	"	"	"	
Pentachlorophenol (PCP)	ND	0.0952	0.190	"	"	"	"	
Phenol	ND	0.238	0.476	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	0.238	0.476	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	0.238	0.476	"	"	"	"	
2,4,5-Trichlorophenol	ND	0.238	0.476	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW037D (A6K0316-04RE1)			**Matrix: Water**		**Batch: 6110545**			
2,4,6-Trichlorophenol	ND	0.238	0.476	ug/L	1	"	EPA 8270D	
Bis(2-ethylhexyl)phthalate	ND	0.476	0.952	"	"	"	"	
Butyl benzyl phthalate	ND	0.476	0.952	"	"	"	"	
Diethylphthalate	ND	0.476	0.952	"	"	"	"	
Dimethylphthalate	ND	0.476	0.952	"	"	"	"	
Di-n-butylphthalate	ND	0.476	0.952	"	"	"	"	
Di-n-octyl phthalate	ND	0.476	0.952	"	"	"	"	
N-Nitrosodimethylamine	ND	0.238	0.476	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	0.238	0.476	"	"	"	"	
N-Nitrosodiphenylamine	ND	0.238	0.476	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	0.238	0.476	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	0.238	0.476	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	0.238	0.476	"	"	"	"	
Hexachlorobenzene	ND	0.238	0.476	"	"	"	"	
Hexachlorobutadiene	ND	0.238	0.476	"	"	"	"	
Hexachlorocyclopentadiene	ND	0.238	0.476	"	"	"	"	
Hexachloroethane	ND	0.238	0.476	"	"	"	"	
2-Chloronaphthalene	ND	0.238	0.476	"	"	"	"	
1,2-Dichlorobenzene	ND	0.238	0.476	"	"	"	"	
1,3-Dichlorobenzene	ND	0.238	0.476	"	"	"	"	
1,4-Dichlorobenzene	ND	0.238	0.476	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.238	0.476	"	"	"	"	
4-Bromophenyl phenyl ether	ND	0.238	0.476	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.238	0.476	"	"	"	"	
Aniline	ND	0.238	0.476	"	"	"	"	
4-Chloroaniline	ND	0.476	0.952	"	"	"	"	
2-Nitroaniline	ND	0.476	0.952	"	"	"	"	
3-Nitroaniline	ND	0.476	0.952	"	"	"	"	
4-Nitroaniline	ND	0.476	0.952	"	"	"	"	
Nitrobenzene	ND	0.238	0.476	"	"	"	"	
2,4-Dinitrotoluene	ND	0.238	0.476	"	"	"	"	
2,6-Dinitrotoluene	ND	0.238	0.476	"	"	"	"	
1,2-Dinitrobenzene	ND	0.238	0.476	"	"	"	"	
1,3-Dinitrobenzene	ND	0.238	0.476	"	"	"	"	
1,4-Dinitrobenzene	ND	0.238	0.476	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW037D (A6K0316-04RE1)			**Matrix: Water**		**Batch: 6110545**			
Benzoic acid	ND	0.952	1.90	ug/L	1	"	EPA 8270D	
Benzyl alcohol	ND	0.238	0.476	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 45 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*54 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*17 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*97 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*26 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*93 %*	*Limits: 43-140 %*	"	"	"	*Q-41*
LW038D (A6K0316-05RE1)			**Matrix: Water**		**Batch: 6110545**			
Acenaphthene	ND	0.00952	0.0190	ug/L	1	11/15/16 12:23	EPA 8270D	
Acenaphthylene	ND	0.00952	0.0190	"	"	"	"	
Anthracene	ND	0.00952	0.0190	"	"	"	"	
Benz(a)anthracene	ND	0.00952	0.0190	"	"	"	"	
Benzo(a)pyrene	ND	0.0124	0.0286	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0143	0.0286	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.00952	0.0190	"	"	"	"	
Chrysene	ND	0.00952	0.0190	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00952	0.0190	"	"	"	"	
Fluoranthene	ND	0.00952	0.0190	"	"	"	"	
Fluorene	ND	0.00952	0.0190	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00952	0.0190	"	"	"	"	
1-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
2-Methylnaphthalene	ND	0.0190	0.0381	"	"	"	"	
Naphthalene	ND	0.0190	0.0381	"	"	"	"	
Phenanthrene	ND	0.00952	0.0190	"	"	"	"	
Pyrene	ND	0.00952	0.0190	"	"	"	"	
Carbazole	ND	0.0143	0.0286	"	"	"	"	
Dibenzofuran	ND	0.00952	0.0190	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.238	0.476	"	"	"	"	
2-Chlorophenol	ND	0.238	0.476	"	"	"	"	
2,4-Dichlorophenol	ND	0.238	0.476	"	"	"	"	
2,4-Dimethylphenol	ND	0.238	0.476	"	"	"	"	
2,4-Dinitrophenol	ND	0.238	0.476	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	0.476	0.952	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW038D (A6K0316-05RE1)			**Matrix: Water**		**Batch: 6110545**			
2-Methylphenol	ND	0.238	0.476	ug/L	1	"	EPA 8270D	
3+4-Methylphenol(s)	ND	0.238	0.476	"	"	"	"	
2-Nitrophenol	ND	0.238	0.476	"	"	"	"	
4-Nitrophenol	ND	0.238	0.476	"	"	"	"	
Pentachlorophenol (PCP)	ND	0.0952	0.190	"	"	"	"	
Phenol	ND	0.238	0.476	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	0.238	0.476	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	0.238	0.476	"	"	"	"	
2,4,5-Trichlorophenol	ND	0.238	0.476	"	"	"	"	
2,4,6-Trichlorophenol	ND	0.238	0.476	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	0.476	0.952	"	"	"	"	
Butyl benzyl phthalate	ND	0.476	0.952	"	"	"	"	
Diethylphthalate	ND	0.476	0.952	"	"	"	"	
Dimethylphthalate	ND	0.476	0.952	"	"	"	"	
Di-n-butylphthalate	ND	0.476	0.952	"	"	"	"	
Di-n-octyl phthalate	ND	0.476	0.952	"	"	"	"	
N-Nitrosodimethylamine	ND	0.238	0.476	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	0.238	0.476	"	"	"	"	
N-Nitrosodiphenylamine	ND	0.238	0.476	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	0.238	0.476	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	0.238	0.476	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	0.238	0.476	"	"	"	"	
Hexachlorobenzene	ND	0.238	0.476	"	"	"	"	
Hexachlorobutadiene	ND	0.238	0.476	"	"	"	"	
Hexachlorocyclopentadiene	ND	0.238	0.476	"	"	"	"	
Hexachloroethane	ND	0.238	0.476	"	"	"	"	
2-Chloronaphthalene	ND	0.238	0.476	"	"	"	"	
1,2-Dichlorobenzene	ND	0.238	0.476	"	"	"	"	
1,3-Dichlorobenzene	ND	0.238	0.476	"	"	"	"	
1,4-Dichlorobenzene	ND	0.238	0.476	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.238	0.476	"	"	"	"	
4-Bromophenyl phenyl ether	ND	0.238	0.476	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.238	0.476	"	"	"	"	
Aniline	ND	0.238	0.476	"	"	"	"	
4-Chloroaniline	ND	0.476	0.952	"	"	"	"	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW038D (A6K0316-05RE1)			**Matrix: Water**		**Batch: 6110545**			
2-Nitroaniline	ND	0.476	0.952	ug/L	1	"	EPA 8270D	
3-Nitroaniline	ND	0.476	0.952	"	"	"	"	
4-Nitroaniline	ND	0.476	0.952	"	"	"	"	
Nitrobenzene	ND	0.238	0.476	"	"	"	"	
2,4-Dinitrotoluene	ND	0.238	0.476	"	"	"	"	
2,6-Dinitrotoluene	ND	0.238	0.476	"	"	"	"	
1,2-Dinitrobenzene	ND	0.238	0.476	"	"	"	"	
1,3-Dinitrobenzene	ND	0.238	0.476	"	"	"	"	
1,4-Dinitrobenzene	ND	0.238	0.476	"	"	"	"	
Benzoic acid	ND	0.952	1.90	"	"	"	"	
Benzyl alcohol	ND	0.238	0.476	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 57 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*60 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*23 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*94 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*32 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*90 %*	*Limits: 43-140 %*	"	"	"	*Q-41*
LW039D (A6K0316-06RE1)			**Matrix: Water**		**Batch: 6110545**			
Acenaphthene	**0.141**	0.0381	0.0762	ug/L	4	11/15/16 10:00	EPA 8270D	
Acenaphthylene	ND	0.0381	0.0762	"	"	"	"	
Anthracene	ND	0.0381	0.0762	"	"	"	"	
Benz(a)anthracene	ND	0.0381	0.0762	"	"	"	"	
Benzo(a)pyrene	ND	0.0495	0.114	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0571	0.114	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0571	0.114	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0381	0.0762	"	"	"	"	
Chrysene	ND	0.0381	0.0762	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0381	0.0762	"	"	"	"	
Fluoranthene	ND	0.0381	0.0762	"	"	"	"	
Fluorene	ND	0.0381	0.0762	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0381	0.0762	"	"	"	"	
1-Methylnaphthalene	ND	0.0762	0.152	"	"	"	"	
2-Methylnaphthalene	ND	0.0762	0.152	"	"	"	"	
Naphthalene	ND	0.0762	0.152	"	"	"	"	
Phenanthrene	ND	0.0381	0.0762	"	"	"	"	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW039D (A6K0316-06RE1)			**Matrix: Water**		**Batch: 6110545**			
Pyrene	ND	0.0381	0.0762	ug/L	4	"	EPA 8270D	
Carbazole	ND	0.0571	0.114	"	"	"	"	
Dibenzofuran	ND	0.0381	0.0762	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.952	1.90	"	"	"	"	
2-Chlorophenol	ND	0.952	1.90	"	"	"	"	
2,4-Dichlorophenol	ND	0.952	1.90	"	"	"	"	
2,4-Dimethylphenol	ND	0.952	1.90	"	"	"	"	
2,4-Dinitrophenol	ND	0.952	1.90	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1.90	3.81	"	"	"	"	
2-Methylphenol	ND	0.952	1.90	"	"	"	"	
3+4-Methylphenol(s)	ND	0.952	1.90	"	"	"	"	
2-Nitrophenol	ND	0.952	1.90	"	"	"	"	
4-Nitrophenol	ND	0.952	1.90	"	"	"	"	
Pentachlorophenol (PCP)	ND	0.381	0.762	"	"	"	"	
Phenol	ND	0.952	1.90	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	0.952	1.90	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	0.952	1.90	"	"	"	"	
2,4,5-Trichlorophenol	ND	0.952	1.90	"	"	"	"	
2,4,6-Trichlorophenol	ND	0.952	1.90	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	1.90	3.81	"	"	"	"	
Butyl benzyl phthalate	ND	1.90	3.81	"	"	"	"	
Diethylphthalate	ND	1.90	3.81	"	"	"	"	
Dimethylphthalate	ND	1.90	3.81	"	"	"	"	
Di-n-butylphthalate	ND	1.90	3.81	"	"	"	"	
Di-n-octyl phthalate	ND	1.90	3.81	"	"	"	"	
N-Nitrosodimethylamine	ND	0.952	1.90	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	0.952	1.90	"	"	"	"	
N-Nitrosodiphenylamine	ND	0.952	1.90	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	0.952	1.90	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	0.952	1.90	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	0.952	1.90	"	"	"	"	
Hexachlorobenzene	ND	0.952	1.90	"	"	"	"	
Hexachlorobutadiene	ND	0.952	1.90	"	"	"	"	
Hexachlorocyclopentadiene	ND	0.952	1.90	"	"	"	"	
Hexachloroethane	ND	0.952	1.90	"	"	"	"	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW039D (A6K0316-06RE1)			**Matrix: Water**		**Batch: 6110545**			
2-Chloronaphthalene	ND	0.952	1.90	ug/L	4	"	EPA 8270D	
1,2-Dichlorobenzene	ND	0.952	1.90	"	"	"	"	
1,3-Dichlorobenzene	ND	0.952	1.90	"	"	"	"	
1,4-Dichlorobenzene	ND	0.952	1.90	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.952	1.90	"	"	"	"	
4-Bromophenyl phenyl ether	ND	0.952	1.90	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.952	1.90	"	"	"	"	
Aniline	ND	0.952	1.90	"	"	"	"	
4-Chloroaniline	ND	1.90	3.81	"	"	"	"	
2-Nitroaniline	ND	1.90	3.81	"	"	"	"	
3-Nitroaniline	ND	1.90	3.81	"	"	"	"	
4-Nitroaniline	ND	1.90	3.81	"	"	"	"	
Nitrobenzene	ND	0.952	1.90	"	"	"	"	
2,4-Dinitrotoluene	ND	0.952	1.90	"	"	"	"	
2,6-Dinitrotoluene	ND	0.952	1.90	"	"	"	"	
1,2-Dinitrobenzene	ND	0.952	1.90	"	"	"	"	
1,3-Dinitrobenzene	ND	0.952	1.90	"	"	"	"	
1,4-Dinitrobenzene	ND	0.952	1.90	"	"	"	"	
Benzoic acid	ND	3.81	7.62	"	"	"	"	
Benzyl alcohol	ND	0.952	1.90	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 53 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*68 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*21 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*99 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*31 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*129 %*	*Limits: 43-140 %*	"	"	"	*Q-41*

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
X (A6K0316-07RE1)			**Matrix: Water**		**Batch: 6110545**			
Acenaphthene	**0.0837**	0.0388	0.0777	ug/L	4	11/15/16 10:36	EPA 8270D	
Acenaphthylene	ND	0.0388	0.0777	"	"	"	"	
Anthracene	ND	0.0388	0.0777	"	"	"	"	
Benz(a)anthracene	ND	0.0388	0.0777	"	"	"	"	
Benzo(a)pyrene	ND	0.0505	0.117	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0583	0.117	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0583	0.117	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0388	0.0777	"	"	"	"	
Chrysene	ND	0.0388	0.0777	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0388	0.0777	"	"	"	"	
Fluoranthene	ND	0.0388	0.0777	"	"	"	"	
Fluorene	ND	0.0388	0.0777	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0388	0.0777	"	"	"	"	
1-Methylnaphthalene	ND	0.0777	0.155	"	"	"	"	
2-Methylnaphthalene	ND	0.0777	0.155	"	"	"	"	
Naphthalene	ND	0.0777	0.155	"	"	"	"	
Phenanthrene	ND	0.0388	0.0777	"	"	"	"	
Pyrene	ND	0.0388	0.0777	"	"	"	"	
Carbazole	ND	0.0583	0.117	"	"	"	"	
Dibenzofuran	ND	0.0388	0.0777	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.971	1.94	"	"	"	"	
2-Chlorophenol	ND	0.971	1.94	"	"	"	"	
2,4-Dichlorophenol	ND	0.971	1.94	"	"	"	"	
2,4-Dimethylphenol	ND	0.971	1.94	"	"	"	"	
2,4-Dinitrophenol	ND	0.971	1.94	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	1.94	3.88	"	"	"	"	
2-Methylphenol	ND	0.971	1.94	"	"	"	"	
3+4-Methylphenol(s)	ND	0.971	1.94	"	"	"	"	
2-Nitrophenol	ND	0.971	1.94	"	"	"	"	
4-Nitrophenol	ND	0.971	1.94	"	"	"	"	
Pentachlorophenol (PCP)	ND	0.388	0.777	"	"	"	"	
Phenol	ND	0.971	1.94	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	0.971	1.94	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	0.971	1.94	"	"	"	"	
2,4,5-Trichlorophenol	ND	0.971	1.94	"	"	"	"	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
X (A6K0316-07RE1)			**Matrix: Water**		**Batch: 6110545**			
2,4,6-Trichlorophenol	ND	0.971	1.94	ug/L	4	"	EPA 8270D	
Bis(2-ethylhexyl)phthalate	ND	1.94	3.88	"	"	"	"	
Butyl benzyl phthalate	ND	1.94	3.88	"	"	"	"	
Diethylphthalate	ND	1.94	3.88	"	"	"	"	
Dimethylphthalate	ND	1.94	3.88	"	"	"	"	
Di-n-butylphthalate	ND	1.94	3.88	"	"	"	"	
Di-n-octyl phthalate	ND	1.94	3.88	"	"	"	"	
N-Nitrosodimethylamine	ND	0.971	1.94	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	0.971	1.94	"	"	"	"	
N-Nitrosodiphenylamine	ND	0.971	1.94	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	0.971	1.94	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	0.971	1.94	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	0.971	1.94	"	"	"	"	
Hexachlorobenzene	ND	0.971	1.94	"	"	"	"	
Hexachlorobutadiene	ND	0.971	1.94	"	"	"	"	
Hexachlorocyclopentadiene	ND	0.971	1.94	"	"	"	"	
Hexachloroethane	ND	0.971	1.94	"	"	"	"	
2-Chloronaphthalene	ND	0.971	1.94	"	"	"	"	
1,2-Dichlorobenzene	ND	0.971	1.94	"	"	"	"	
1,3-Dichlorobenzene	ND	0.971	1.94	"	"	"	"	
1,4-Dichlorobenzene	ND	0.971	1.94	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.971	1.94	"	"	"	"	
4-Bromophenyl phenyl ether	ND	0.971	1.94	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.971	1.94	"	"	"	"	
Aniline	ND	0.971	1.94	"	"	"	"	
4-Chloroaniline	ND	1.94	3.88	"	"	"	"	
2-Nitroaniline	ND	1.94	3.88	"	"	"	"	
3-Nitroaniline	ND	1.94	3.88	"	"	"	"	
4-Nitroaniline	ND	1.94	3.88	"	"	"	"	
Nitrobenzene	ND	0.971	1.94	"	"	"	"	
2,4-Dinitrotoluene	ND	0.971	1.94	"	"	"	"	
2,6-Dinitrotoluene	ND	0.971	1.94	"	"	"	"	
1,2-Dinitrobenzene	ND	0.971	1.94	"	"	"	"	
1,3-Dinitrobenzene	ND	0.971	1.94	"	"	"	"	
1,4-Dinitrobenzene	ND	0.971	1.94	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
X (A6K0316-07RE1)			**Matrix: Water**		**Batch: 6110545**			
Benzoic acid	ND	3.88	7.77	ug/L	4	"	EPA 8270D	
Benzyl alcohol	ND	0.971	1.94	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 29 %*	*Limits: 44-120 %*	"	"	"	*S-06*
2-Fluorobiphenyl (Surr)			*35 %*	*Limits: 44-120 %*	"	"	"	*S-06*
Phenol-d6 (Surr)			*12 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*90 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*17 %*	*Limits: 19-120 %*	"	"	"	*S-06*
2,4,6-Tribromophenol (Surr)			*117 %*	*Limits: 43-140 %*	"	"	"	*Q-41*

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW009D (A6K0316-01)			**Matrix: Water**					
Batch: 6110749								
Arsenic	**30.3**	0.500	1.00	ug/L	1	11/21/16 17:21	EPA 6020A	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	ND	0.500	1.00	"	"	"	"	
Lead	ND	0.100	0.200	"	"	"	"	
Nickel	**1.16**	0.500	1.00	"	"	"	"	Q-42
Selenium	ND	1.00	2.00	"	"	"	"	
Zinc	ND	2.00	4.00	"	"	"	"	
LW006D (A6K0316-02)			**Matrix: Water**					
Batch: 6110749								
Arsenic	**16.9**	0.500	1.00	ug/L	1	11/21/16 17:27	EPA 6020A	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	ND	0.500	1.00	"	"	"	"	
Lead	ND	0.100	0.200	"	"	"	"	
Nickel	**2.80**	0.500	1.00	"	"	"	"	
Selenium	ND	1.00	2.00	"	"	"	"	
Zinc	ND	2.00	4.00	"	"	"	"	
LW036D (A6K0316-03)			**Matrix: Water**					
Batch: 6110749								
Arsenic	**0.856**	0.500	1.00	ug/L	1	11/21/16 18:07	EPA 6020A	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**0.967**	0.500	1.00	"	"	"	"	
Lead	**0.789**	0.100	0.200	"	"	"	"	
Nickel	**0.744**	0.500	1.00	"	"	"	"	
Zinc	**2.54**	2.00	4.00	"	"	"	"	
LW036D (A6K0316-03RE1)			**Matrix: Water**					
Batch: 6110749								
Selenium	ND	0.500	1.00	ug/L	1	11/22/16 16:28	EPA 6020A	
LW037D (A6K0316-04)			**Matrix: Water**					
Batch: 6110749								
Arsenic	**0.656**	0.500	1.00	ug/L	1	11/21/16 18:17	EPA 6020A	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**0.833**	0.500	1.00	"	"	"	"	
Lead	ND	0.100	0.200	"	"	"	"	
Nickel	**0.600**	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
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503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW037D (A6K0316-04)			**Matrix: Water**					
Selenium	ND	1.00	2.00	ug/L	1	"	EPA 6020A	
Zinc	**3.07**	2.00	4.00	"	"	"	"	
LW038D (A6K0316-05)			**Matrix: Water**					
Batch: 6110749								
Arsenic	**0.756**	0.500	1.00	ug/L	1	11/21/16 18:20	EPA 6020A	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	**1.17**	0.500	1.00	"	"	"	"	
Lead	**0.167**	0.100	0.200	"	"	"	"	
Nickel	**1.04**	0.500	1.00	"	"	"	"	
Selenium	ND	1.00	2.00	"	"	"	"	
Zinc	**2.98**	2.00	4.00	"	"	"	"	
LW039D (A6K0316-06)			**Matrix: Water**					
Batch: 6110749								
Arsenic	**4.74**	0.500	1.00	ug/L	1	11/21/16 18:32	EPA 6020A	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	ND	0.500	1.00	"	"	"	"	
Lead	ND	0.100	0.200	"	"	"	"	
Nickel	ND	0.500	1.00	"	"	"	"	
Selenium	ND	1.00	2.00	"	"	"	"	
Zinc	ND	2.00	4.00	"	"	"	"	
X (A6K0316-07)			**Matrix: Water**					
Batch: 6110749								
Arsenic	**4.52**	0.500	1.00	ug/L	1	11/21/16 18:35	EPA 6020A	
Chromium	ND	0.500	1.00	"	"	"	"	
Copper	ND	0.500	1.00	"	"	"	"	
Lead	ND	0.100	0.200	"	"	"	"	
Nickel	**0.644**	0.500	1.00	"	"	"	"	
Selenium	ND	1.00	2.00	"	"	"	"	
Zinc	ND	2.00	4.00	"	"	"	"	

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503-718-2323 Phone
503-718-0333 Fax

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19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW036D (A6K0316-03)			**Matrix: Water**					
Batch: 6110764								
Arsenic	ND	0.500	1.00	ug/L	1	11/21/16 16:33	EPA 200.8 (Diss)	
Chromium	ND	---	1.00	"	"	"	"	
Copper	ND	---	1.00	"	"	"	"	
Lead	ND	---	0.200	"	"	"	"	
Nickel	ND	---	1.00	"	"	"	"	
Selenium	ND	---	2.00	"	"	"	"	
Zinc	ND	---	4.00	"	"	"	"	
LW037D (A6K0316-04)			**Matrix: Water**					
Batch: 6110764								
Arsenic	**0.511**	0.500	1.00	ug/L	1	11/21/16 16:36	EPA 200.8 (Diss)	J
Chromium	ND	---	1.00	"	"	"	"	
Copper	ND	---	1.00	"	"	"	"	
Lead	ND	---	0.200	"	"	"	"	
Nickel	ND	---	1.00	"	"	"	"	
Selenium	ND	---	2.00	"	"	"	"	
Zinc	ND	---	4.00	"	"	"	"	
LW038D (A6K0316-05)			**Matrix: Water**					
Batch: 6110764								
Arsenic	ND	0.500	1.00	ug/L	1	11/21/16 16:39	EPA 200.8 (Diss)	
Chromium	ND	---	1.00	"	"	"	"	
Copper	ND	---	1.00	"	"	"	"	
Lead	ND	---	0.200	"	"	"	"	
Nickel	ND	---	1.00	"	"	"	"	
Selenium	ND	---	2.00	"	"	"	"	
Zinc	ND	---	4.00	"	"	"	"	
LW039D (A6K0316-06)			**Matrix: Water**					
Batch: 6110764								
Arsenic	**7.32**	0.500	1.00	ug/L	1	11/21/16 16:55	EPA 200.8 (Diss)	
Chromium	ND	---	1.00	"	"	"	"	
Copper	ND	---	1.00	"	"	"	"	
Lead	ND	---	0.200	"	"	"	"	
Nickel	ND	---	1.00	"	"	"	"	
Selenium	ND	---	2.00	"	"	"	"	
Zinc	**6.53**	---	4.00	"	"	"	"	

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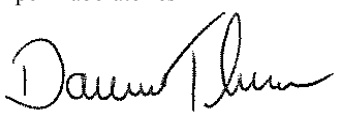

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19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Dissolved Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
X (A6K0316-07)			**Matrix: Water**					
Batch: 6110764								
Arsenic	**7.14**	0.500	1.00	ug/L	1	11/21/16 17:01	EPA 200.8 (Diss)	
Chromium	ND	---	1.00	"	"	"	"	
Copper	ND	---	1.00	"	"	"	"	
Lead	ND	---	0.200	"	"	"	"	
Nickel	ND	---	1.00	"	"	"	"	
Selenium	ND	---	2.00	"	"	"	"	
Zinc	ND	---	4.00	"	"	"	"	

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Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW009D (A6K0316-01)			**Matrix: Water**					
Batch: 6110443								
Biochemical Oxygen Demand (5 Day)	**21.8**	---	3.14	mg/L	1	11/15/16 14:01	SM 5210 B	
Batch: 6110451								
Total Organic Carbon	**2.90**	---	1.00	"	"	11/10/16 23:42	SM 5310 B	
LW006D (A6K0316-02)			**Matrix: Water**					
Batch: 6110443								
Biochemical Oxygen Demand (5 Day)	**13.3**	---	3.14	mg/L	1	11/15/16 14:01	SM 5210 B	
Batch: 6110451								
Total Organic Carbon	**4.81**	---	1.00	"	"	11/10/16 23:42	SM 5310 B	
LW036D (A6K0316-03)			**Matrix: Water**					
Batch: 6110443								
Biochemical Oxygen Demand (5 Day)	ND	---	3.14	mg/L	1	11/15/16 14:01	SM 5210 B	
Batch: 6110451								
Total Organic Carbon	**1.61**	---	1.00	"	"	11/10/16 23:42	SM 5310 B	
LW037D (A6K0316-04)			**Matrix: Water**					
Batch: 6110443								
Biochemical Oxygen Demand (5 Day)	ND	---	3.14	mg/L	1	11/15/16 14:01	SM 5210 B	
Batch: 6110451								
Total Organic Carbon	**1.84**	---	1.00	"	"	11/10/16 23:42	SM 5310 B	
LW038D (A6K0316-05)			**Matrix: Water**					
Batch: 6110443								
Biochemical Oxygen Demand (5 Day)	ND	---	3.14	mg/L	1	11/15/16 14:01	SM 5210 B	
Batch: 6110451								
Total Organic Carbon	**1.56**	---	1.00	"	"	11/10/16 23:42	SM 5310 B	
LW039D (A6K0316-06)			**Matrix: Water**					
Batch: 6110443								
Biochemical Oxygen Demand (5 Day)	**25.5**	---	3.14	mg/L	1	11/15/16 14:01	SM 5210 B	
Batch: 6110451								
Total Organic Carbon	**2.40**	---	1.00	"	"	11/10/16 23:42	SM 5310 B	
X (A6K0316-07)			**Matrix: Water**					
Batch: 6110443								

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19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

ANALYTICAL SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
X (A6K0316-07)			**Matrix: Water**					
Biochemical Oxygen Demand (5 Day)	**25.2**	---	3.14	mg/L	1	11/15/16 14:01	SM 5210 B	
Batch: 6110451								
Total Organic Carbon	**2.43**	---	1.00	"	"	11/10/16 23:42	SM 5310 B	

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Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110513 - EPA 3510C (Fuels/Acid Ext.)									**Water**			
Blank (6110513-BLK1)					Prepared: 11/11/16 16:19 Analyzed: 11/11/16 20:42							
NWTPH-Dx												
Diesel	ND	36.4	72.7	ug/L	1	---	---	---	---	---	---	
Oil	ND	72.7	145	"	"	---	---	---	---	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 88 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS (6110513-BS1)					Prepared: 11/11/16 16:19 Analyzed: 11/11/16 21:02							
NWTPH-Dx												
Diesel	359	40.0	80.0	ug/L	1	500	---	72	52-120%	---	---	
Surr: o-Terphenyl (Surr)			*Recovery: 82 %*	*Limits: 50-150 %*			*Dilution: 1x*					
LCS Dup (6110513-BSD1)					Prepared: 11/11/16 16:19 Analyzed: 11/11/16 21:23							Q-19
NWTPH-Dx												
Diesel	455	40.0	80.0	ug/L	1	500	---	91	52-120%	24	20%	Q-24
Surr: o-Terphenyl (Surr)			*Recovery: 85 %*	*Limits: 50-150 %*			*Dilution: 1x*					

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503-718-0333 Fax

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Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110436 - EPA 5030B									**Water**			
Blank (6110436-BLK1)					Prepared: 11/10/16 09:19 Analyzed: 11/10/16 11:38							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	50.0	100	ug/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 97 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*91 %*	*50-150 %*			*"*					
LCS (6110436-BS2)					Prepared: 11/10/16 09:19 Analyzed: 11/10/16 11:10							
NWTPH-Gx (MS)												
Gasoline Range Organics	513	50.0	100	ug/L	1	500	---	103	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 94 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*92 %*	*50-150 %*			*"*					
Duplicate (6110436-DUP2)					Prepared: 11/10/16 11:39 Analyzed: 11/10/16 17:37							
QC Source Sample: LW009D (A6K0316-01)												
NWTPH-Gx (MS)												
Gasoline Range Organics	**1450**	50.0	100	ug/L	1	---	1440	---	---	1	30%	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 108 %*	*Limits: 50-150 %*			*Dilution: 1x*					
1,4-Difluorobenzene (Sur)			*133 %*	*50-150 %*			*"*					

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Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110479 - EPA 5030B									Water			
Blank (6110479-BLK1)					Prepared: 11/11/16 08:33 Analyzed: 11/11/16 10:51							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	50.0	100	ug/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 97 %*		*Limits: 50-150 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Sur)			*90 %*		*50-150 %*				*"*			
LCS (6110479-BS2)					Prepared: 11/11/16 08:33 Analyzed: 11/11/16 10:23							
NWTPH-Gx (MS)												
Gasoline Range Organics	487	50.0	100	ug/L	1	500	---	97	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 94 %*		*Limits: 50-150 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Sur)			*90 %*		*50-150 %*				*"*			

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Tigard, OR 97223
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Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110522 - EPA 5030B									Water			
Blank (6110522-BLK1)					Prepared: 11/14/16 10:07 Analyzed: 11/14/16 12:26							
NWTPH-Gx (MS)												
Gasoline Range Organics	ND	50.0	100	ug/L	1	---	---	---	---	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 99 %*		*Limits: 50-150 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Sur)			*92 %*		*50-150 %*				*"*			
LCS (6110522-BS2)					Prepared: 11/14/16 10:07 Analyzed: 11/14/16 11:58							
NWTPH-Gx (MS)												
Gasoline Range Organics	492	50.0	100	ug/L	1	500	---	98	70-130%	---	---	
Surr: 4-Bromofluorobenzene (Sur)			*Recovery: 95 %*		*Limits: 50-150 %*				*Dilution: 1x*			
1,4-Difluorobenzene (Sur)			*91 %*		*50-150 %*				*"*			

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19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110436 - EPA 5030B							**Water**					
Blank (6110436-BLK1)					Prepared: 11/10/16 09:19 Analyzed: 11/10/16 11:38							
EPA 8260B												
Acetone	ND	10.0	20.0	ug/L	1	---	---	---	---	---	---	
Benzene	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Bromobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Bromochloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromodichloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromoform	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromomethane	ND	5.00	5.00	"	"	---	---	---	---	---	---	
2-Butanone (MEK)	ND	5.00	10.0	"	"	---	---	---	---	---	---	
n-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
sec-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
tert-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Carbon tetrachloride	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Chlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Chloroethane	ND	5.00	5.00	"	"	---	---	---	---	---	---	
Chloroform	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Chloromethane	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Chlorotoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Chlorotoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Dibromochloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Dibromomethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,1-Dichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1-Dichloroethene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloropropane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,3-Dichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
2,2-Dichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	

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Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110436 - EPA 5030B							**Water**					
Blank (6110436-BLK1)					Prepared: 11/10/16 09:19 Analyzed: 11/10/16 11:38							
EPA 8260B												
1,1-Dichloropropene	ND	0.500	1.00	ug/L	"	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Hexanone	ND	5.00	10.0	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Isopropyltoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Methylene chloride	ND	1.50	3.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Styrene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Toluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Trichlorofluoromethane	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Vinyl chloride	ND	0.250	0.500	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
o-Xylene	ND	0.250	0.500	"	"	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 97 %* *Limits: 80-120 %* *Dilution: 1x*
Toluene-d8 (Surr) *108 %* *80-120 %* *"*
4-Bromofluorobenzene (Surr) *114 %* *80-120 %* *"*

LCS (6110436-BS1) Prepared: 11/10/16 09:19 Analyzed: 11/10/16 10:42

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Darwin Thomas, Business Development Director

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110436 - EPA 5030B							**Water**					
LCS (6110436-BS1)					Prepared: 11/10/16 09:19 Analyzed: 11/10/16 10:42							
EPA 8260B												
Acetone	31.4	10.0	20.0	ug/L	1	40.0	---	78	70-130%	---	---	
Benzene	19.4	0.100	0.200	"	"	20.0	---	97	"	---	---	
Bromobenzene	23.0	0.250	0.500	"	"	"	---	115	"	---	---	
Bromochloromethane	18.2	0.500	1.00	"	"	"	---	91	"	---	---	
Bromodichloromethane	20.4	0.500	1.00	"	"	"	---	102	"	---	---	
Bromoform	24.0	0.500	1.00	"	"	"	---	120	"	---	---	
Bromomethane	27.4	5.00	5.00	"	"	"	---	137	"	---	---	Q-29
2-Butanone (MEK)	34.7	5.00	10.0	"	"	40.0	---	87	"	---	---	
n-Butylbenzene	21.4	0.500	1.00	"	"	20.0	---	107	"	---	---	
sec-Butylbenzene	22.4	0.500	1.00	"	"	"	---	112	"	---	---	
tert-Butylbenzene	22.0	0.500	1.00	"	"	"	---	110	"	---	---	
Carbon tetrachloride	22.2	0.500	1.00	"	"	"	---	111	"	---	---	
Chlorobenzene	22.9	0.250	0.500	"	"	"	---	114	"	---	---	
Chloroethane	24.9	5.00	5.00	"	"	"	---	124	"	---	---	
Chloroform	20.2	0.500	1.00	"	"	"	---	101	"	---	---	
Chloromethane	24.6	2.50	5.00	"	"	"	---	123	"	---	---	
2-Chlorotoluene	22.7	0.500	1.00	"	"	"	---	113	"	---	---	
4-Chlorotoluene	21.6	0.500	1.00	"	"	"	---	108	"	---	---	
1,2-Dibromo-3-chloropropane	20.5	2.50	5.00	"	"	"	---	102	"	---	---	
Dibromochloromethane	23.8	0.500	1.00	"	"	"	---	119	"	---	---	
1,2-Dibromoethane (EDB)	22.3	0.250	0.500	"	"	"	---	112	"	---	---	
Dibromomethane	20.1	0.500	1.00	"	"	"	---	100	"	---	---	
1,2-Dichlorobenzene	22.8	0.250	0.500	"	"	"	---	114	"	---	---	
1,3-Dichlorobenzene	22.9	0.250	0.500	"	"	"	---	114	"	---	---	
1,4-Dichlorobenzene	22.3	0.250	0.500	"	"	"	---	112	"	---	---	
Dichlorodifluoromethane	27.4	0.500	1.00	"	"	"	---	137	"	---	---	Q-29
1,1-Dichloroethane	18.8	0.250	0.500	"	"	"	---	94	"	---	---	
1,2-Dichloroethane (EDC)	19.9	0.250	0.500	"	"	"	---	100	"	---	---	
1,1-Dichloroethene	19.1	0.250	0.500	"	"	"	---	96	"	---	---	
cis-1,2-Dichloroethene	18.5	0.250	0.500	"	"	"	---	93	"	---	---	
trans-1,2-Dichloroethene	18.6	0.250	0.500	"	"	"	---	93	"	---	---	
1,2-Dichloropropane	19.4	0.250	0.500	"	"	"	---	97	"	---	---	
1,3-Dichloropropane	20.7	0.500	1.00	"	"	"	---	103	"	---	---	
2,2-Dichloropropane	22.7	0.500	1.00	"	"	"	---	114	"	---	---	

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Apex Labs

12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110436 - EPA 5030B								**Water**				
LCS (6110436-BS1)					Prepared: 11/10/16 09:19 Analyzed: 11/10/16 10:42							
EPA 8260B												
1,1-Dichloropropene	20.7	0.500	1.00	ug/L	"	"	---	104	"	---	---	
cis-1,3-Dichloropropene	20.8	0.500	1.00	"	"	"	---	104	"	---	---	
trans-1,3-Dichloropropene	23.2	0.500	1.00	"	"	"	---	116	"	---	---	
Ethylbenzene	22.8	0.250	0.500	"	"	"	---	114	"	---	---	
Hexachlorobutadiene	20.3	2.50	5.00	"	"	"	---	101	"	---	---	
2-Hexanone	36.1	5.00	10.0	"	"	40.0	---	90	"	---	---	
Isopropylbenzene	24.0	0.500	1.00	"	"	20.0	---	120	"	---	---	
4-Isopropyltoluene	22.8	0.500	1.00	"	"	"	---	114	"	---	---	
4-Methyl-2-pentanone (MiBK)	37.7	5.00	10.0	"	"	40.0	---	94	"	---	---	
Methyl tert-butyl ether (MTBE)	19.5	0.500	1.00	"	"	20.0	---	98	"	---	---	
Methylene chloride	20.3	1.50	3.00	"	"	"	---	101	"	---	---	
Naphthalene	19.9	1.00	2.00	"	"	"	---	100	"	---	---	
n-Propylbenzene	21.9	0.250	0.500	"	"	"	---	110	"	---	---	
Styrene	21.6	0.500	1.00	"	"	"	---	108	"	---	---	
1,1,1,2-Tetrachloroethane	23.1	0.250	0.500	"	"	"	---	116	"	---	---	
1,1,2,2-Tetrachloroethane	20.1	0.250	0.500	"	"	"	---	100	"	---	---	
Tetrachloroethene (PCE)	23.7	0.250	0.500	"	"	"	---	118	"	---	---	
Toluene	21.4	0.500	1.00	"	"	"	---	107	"	---	---	
1,2,3-Trichlorobenzene	20.0	1.00	2.00	"	"	"	---	100	"	---	---	
1,2,4-Trichlorobenzene	20.1	1.00	2.00	"	"	"	---	101	"	---	---	
1,1,1-Trichloroethane	21.2	0.250	0.500	"	"	"	---	106	"	---	---	
1,1,2-Trichloroethane	22.4	0.250	0.500	"	"	"	---	112	"	---	---	
Trichloroethene (TCE)	20.5	0.250	0.500	"	"	"	---	102	"	---	---	
Trichlorofluoromethane	22.9	1.00	2.00	"	"	"	---	114	"	---	---	
1,2,3-Trichloropropane	20.9	0.500	1.00	"	"	"	---	105	"	---	---	
1,2,4-Trimethylbenzene	22.9	0.500	1.00	"	"	"	---	114	"	---	---	
1,3,5-Trimethylbenzene	23.4	0.500	1.00	"	"	"	---	117	"	---	---	
Vinyl chloride	25.0	0.250	0.500	"	"	"	---	125	"	---	---	
m,p-Xylene	49.0	0.500	1.00	"	"	40.0	---	122	"	---	---	
o-Xylene	23.0	0.250	0.500	"	"	20.0	---	115	"	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 93 %* *Limits: 80-120 %* *Dilution: 1x*
Toluene-d8 (Surr) *105 %* *80-120 %* *"*
4-Bromofluorobenzene (Surr) *109 %* *80-120 %* *"*

Duplicate (6110436-DUP2) Prepared: 11/10/16 11:39 Analyzed: 11/10/16 17:37

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Tigard, OR 97223
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503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110436 - EPA 5030B							**Water**					
Duplicate (6110436-DUP2)					Prepared: 11/10/16 11:39 Analyzed: 11/10/16 17:37							
QC Source Sample: LW009D (A6K0316-01)												
EPA 8260B												
Acetone	ND	10.0	20.0	ug/L	1	---	ND	---	---	---	30%	
Benzene	ND	0.100	0.200	"	"	---	ND	---	---	---	30%	
Bromobenzene	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
Bromochloromethane	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
Bromodichloromethane	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
Bromoform	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
Bromomethane	ND	5.00	5.00	"	"	---	ND	---	---	---	30%	
2-Butanone (MEK)	ND	5.00	10.0	"	"	---	ND	---	---	---	30%	
n-Butylbenzene	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
sec-Butylbenzene	**2.37**	0.500	1.00	"	"	---	2.40	---	---	1	30%	
tert-Butylbenzene	**2.91**	0.500	1.00	"	"	---	2.90	---	---	0.3	30%	
Carbon tetrachloride	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
Chlorobenzene	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
Chloroethane	ND	5.00	5.00	"	"	---	ND	---	---	---	30%	
Chloroform	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
Chloromethane	ND	2.50	5.00	"	"	---	ND	---	---	---	30%	
2-Chlorotoluene	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
4-Chlorotoluene	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	---	ND	---	---	---	30%	
Dibromochloromethane	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
Dibromomethane	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
1,1-Dichloroethane	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
1,1-Dichloroethene	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
1,2-Dichloropropane	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
1,3-Dichloropropane	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	

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Tigard, OR 97223
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503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110436 - EPA 5030B							**Water**					
Duplicate (6110436-DUP2)					Prepared: 11/10/16 11:39 Analyzed: 11/10/16 17:37							
QC Source Sample: LW009D (A6K0316-01)												
EPA 8260B												
2,2-Dichloropropane	ND	0.500	1.00	ug/L	"	---	ND	---	---	---	30%	
1,1-Dichloropropene	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
Ethylbenzene	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
Hexachlorobutadiene	ND	2.50	5.00	"	"	---	ND	---	---	---	30%	
2-Hexanone	ND	5.00	10.0	"	"	---	ND	---	---	---	30%	
Isopropylbenzene	**25.5**	0.500	1.00	"	"	---	25.6	---	---	0.2	30%	
4-Isopropyltoluene	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	---	ND	---	---	---	30%	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
Methylene chloride	ND	1.50	3.00	"	"	---	ND	---	---	---	30%	
Naphthalene	ND	1.00	2.00	"	"	---	ND	---	---	---	30%	
n-Propylbenzene	**3.93**	0.250	0.500	"	"	---	3.91	---	---	0.5	30%	
Styrene	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
Toluene	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	---	ND	---	---	---	30%	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	---	ND	---	---	---	30%	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
Trichlorofluoromethane	ND	1.00	2.00	"	"	---	ND	---	---	---	30%	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
Vinyl chloride	ND	0.250	0.500	"	"	---	ND	---	---	---	30%	
m,p-Xylene	ND	0.500	1.00	"	"	---	ND	---	---	---	30%	
o-Xylene	**0.300**	0.250	0.500	"	"	---	0.320	---	---	6	30%	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 100 %* *Limits: 80-120 %* *Dilution: 1x*
Toluene-d8 (Surr) *102 %* *80-120 %* *"*

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110436 - EPA 5030B												**Water**
Duplicate (6110436-DUP2)						Prepared: 11/10/16 11:39 Analyzed: 11/10/16 17:37						
QC Source Sample: LW009D (A6K0316-01)												
EPA 8260B												
Surr: 4-Bromofluorobenzene (Surr)						*Recovery: 110 %*	*Limits: 80-120 %*					*Dilution: 1x*

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110479 - EPA 5030B							**Water**					
Blank (6110479-BLK1)					Prepared: 11/11/16 08:33 Analyzed: 11/11/16 10:51							
EPA 8260B												
Acetone	ND	10.0	20.0	ug/L	1	---	---	---	---	---	---	Q-30
Benzene	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Bromobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Bromochloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromodichloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromoform	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromomethane	ND	5.00	5.00	"	"	---	---	---	---	---	---	
2-Butanone (MEK)	ND	5.00	10.0	"	"	---	---	---	---	---	---	
n-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
sec-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
tert-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Carbon tetrachloride	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Chlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Chloroethane	ND	5.00	5.00	"	"	---	---	---	---	---	---	
Chloroform	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Chloromethane	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Chlorotoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Chlorotoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Dibromochloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Dibromomethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,1-Dichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1-Dichloroethene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloropropane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,3-Dichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
2,2-Dichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	

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Darwin Thomas, Business Development Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110479 - EPA 5030B							**Water**					
Blank (6110479-BLK1)					Prepared: 11/11/16 08:33 Analyzed: 11/11/16 10:51							
EPA 8260B												
1,1-Dichloropropene	ND	0.500	1.00	ug/L	"	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Hexanone	ND	5.00	10.0	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Isopropyltoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Methylene chloride	ND	1.50	3.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Styrene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Toluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Trichlorofluoromethane	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Vinyl chloride	ND	0.250	0.500	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
o-Xylene	ND	0.250	0.500	"	"	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 97 %* *Limits: 80-120 %* *Dilution: 1x*
Toluene-d8 (Surr) *105 %* *80-120 %* *"*
4-Bromofluorobenzene (Surr) *112 %* *80-120 %* *"*

LCS (6110479-BS1) Prepared: 11/11/16 08:33 Analyzed: 11/11/16 09:56

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Darwin Thomas, Business Development Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110479 - EPA 5030B							**Water**					
LCS (6110479-BS1)					Prepared: 11/11/16 08:33 Analyzed: 11/11/16 09:56							
EPA 8260B												
Acetone	27.4	10.0	20.0	ug/L	1	40.0	---	69	70-130%	---	---	Q-30
Benzene	18.1	0.100	0.200	"	"	20.0	---	90	"	---	---	
Bromobenzene	22.1	0.250	0.500	"	"	"	---	111	"	---	---	
Bromochloromethane	17.2	0.500	1.00	"	"	"	---	86	"	---	---	
Bromodichloromethane	19.0	0.500	1.00	"	"	"	---	95	"	---	---	
Bromoform	21.4	0.500	1.00	"	"	"	---	107	"	---	---	
Bromomethane	28.3	5.00	5.00	"	"	"	---	142	"	---	---	Q-41
2-Butanone (MEK)	29.3	5.00	10.0	"	"	40.0	---	73	"	---	---	
n-Butylbenzene	20.7	0.500	1.00	"	"	20.0	---	103	"	---	---	
sec-Butylbenzene	21.7	0.500	1.00	"	"	"	---	108	"	---	---	
tert-Butylbenzene	20.8	0.500	1.00	"	"	"	---	104	"	---	---	
Carbon tetrachloride	20.3	0.500	1.00	"	"	"	---	102	"	---	---	
Chlorobenzene	21.6	0.250	0.500	"	"	"	---	108	"	---	---	
Chloroethane	21.8	5.00	5.00	"	"	"	---	109	"	---	---	
Chloroform	19.0	0.500	1.00	"	"	"	---	95	"	---	---	
Chloromethane	19.6	2.50	5.00	"	"	"	---	98	"	---	---	
2-Chlorotoluene	21.3	0.500	1.00	"	"	"	---	106	"	---	---	
4-Chlorotoluene	21.0	0.500	1.00	"	"	"	---	105	"	---	---	
1,2-Dibromo-3-chloropropane	17.3	2.50	5.00	"	"	"	---	87	"	---	---	
Dibromochloromethane	21.8	0.500	1.00	"	"	"	---	109	"	---	---	
1,2-Dibromoethane (EDB)	21.2	0.250	0.500	"	"	"	---	106	"	---	---	
Dibromomethane	18.3	0.500	1.00	"	"	"	---	92	"	---	---	
1,2-Dichlorobenzene	21.8	0.250	0.500	"	"	"	---	109	"	---	---	
1,3-Dichlorobenzene	21.8	0.250	0.500	"	"	"	---	109	"	---	---	
1,4-Dichlorobenzene	21.2	0.250	0.500	"	"	"	---	106	"	---	---	
Dichlorodifluoromethane	23.4	0.500	1.00	"	"	"	---	117	"	---	---	
1,1-Dichloroethane	17.7	0.250	0.500	"	"	"	---	89	"	---	---	
1,2-Dichloroethane (EDC)	18.5	0.250	0.500	"	"	"	---	92	"	---	---	
1,1-Dichloroethene	17.6	0.250	0.500	"	"	"	---	88	"	---	---	
cis-1,2-Dichloroethene	17.6	0.250	0.500	"	"	"	---	88	"	---	---	
trans-1,2-Dichloroethene	17.4	0.250	0.500	"	"	"	---	87	"	---	---	
1,2-Dichloropropane	18.6	0.250	0.500	"	"	"	---	93	"	---	---	
1,3-Dichloropropane	19.4	0.500	1.00	"	"	"	---	97	"	---	---	
2,2-Dichloropropane	21.6	0.500	1.00	"	"	"	---	108	"	---	---	

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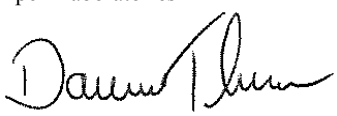

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Tigard, OR 97223
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Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110479 - EPA 5030B								**Water**				
LCS (6110479-BS1)					Prepared: 11/11/16 08:33 Analyzed: 11/11/16 09:56							
EPA 8260B												
1,1-Dichloropropene	19.7	0.500	1.00	ug/L	"	"	---	98	"	---	---	
cis-1,3-Dichloropropene	20.7	0.500	1.00	"	"	"	---	104	"	---	---	
trans-1,3-Dichloropropene	22.0	0.500	1.00	"	"	"	---	110	"	---	---	
Ethylbenzene	21.7	0.250	0.500	"	"	"	---	109	"	---	---	
Hexachlorobutadiene	19.8	2.50	5.00	"	"	"	---	99	"	---	---	
2-Hexanone	31.4	5.00	10.0	"	"	40.0	---	78	"	---	---	
Isopropylbenzene	22.3	0.500	1.00	"	"	20.0	---	112	"	---	---	
4-Isopropyltoluene	22.1	0.500	1.00	"	"	"	---	110	"	---	---	
4-Methyl-2-pentanone (MiBK)	33.0	5.00	10.0	"	"	40.0	---	83	"	---	---	
Methyl tert-butyl ether (MTBE)	18.5	0.500	1.00	"	"	20.0	---	93	"	---	---	
Methylene chloride	18.0	1.50	3.00	"	"	"	---	90	"	---	---	
Naphthalene	18.5	1.00	2.00	"	"	"	---	93	"	---	---	
n-Propylbenzene	21.2	0.250	0.500	"	"	"	---	106	"	---	---	
Styrene	20.4	0.500	1.00	"	"	"	---	102	"	---	---	
1,1,1,2-Tetrachloroethane	21.8	0.250	0.500	"	"	"	---	109	"	---	---	
1,1,2,2-Tetrachloroethane	19.1	0.250	0.500	"	"	"	---	95	"	---	---	
Tetrachloroethene (PCE)	22.6	0.250	0.500	"	"	"	---	113	"	---	---	
Toluene	20.5	0.500	1.00	"	"	"	---	103	"	---	---	
1,2,3-Trichlorobenzene	18.5	1.00	2.00	"	"	"	---	92	"	---	---	
1,2,4-Trichlorobenzene	19.1	1.00	2.00	"	"	"	---	95	"	---	---	
1,1,1-Trichloroethane	19.9	0.250	0.500	"	"	"	---	100	"	---	---	
1,1,2-Trichloroethane	21.3	0.250	0.500	"	"	"	---	106	"	---	---	
Trichloroethene (TCE)	19.8	0.250	0.500	"	"	"	---	99	"	---	---	
Trichlorofluoromethane	20.8	1.00	2.00	"	"	"	---	104	"	---	---	
1,2,3-Trichloropropane	19.3	0.500	1.00	"	"	"	---	96	"	---	---	
1,2,4-Trimethylbenzene	22.3	0.500	1.00	"	"	"	---	112	"	---	---	
1,3,5-Trimethylbenzene	22.6	0.500	1.00	"	"	"	---	113	"	---	---	
Vinyl chloride	22.1	0.250	0.500	"	"	"	---	111	"	---	---	
m,p-Xylene	45.6	0.500	1.00	"	"	40.0	---	114	"	---	---	
o-Xylene	21.2	0.250	0.500	"	"	20.0	---	106	"	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 93 %* *Limits: 80-120 %* *Dilution: 1x*
Toluene-d8 (Surr) *106 %* *80-120 %* *"*
4-Bromofluorobenzene (Surr) *111 %* *80-120 %* *"*

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Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110522 - EPA 5030B							**Water**					
Blank (6110522-BLK1)					Prepared: 11/14/16 10:07 Analyzed: 11/14/16 12:26							
EPA 8260B												
Acetone	ND	10.0	20.0	ug/L	1	---	---	---	---	---	---	
Benzene	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Bromobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Bromochloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromodichloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromoform	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Bromomethane	ND	5.00	5.00	"	"	---	---	---	---	---	---	
2-Butanone (MEK)	ND	5.00	10.0	"	"	---	---	---	---	---	---	
n-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
sec-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
tert-Butylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Carbon tetrachloride	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Chlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Chloroethane	ND	5.00	5.00	"	"	---	---	---	---	---	---	
Chloroform	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Chloromethane	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Chlorotoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Chlorotoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	---	---	---	---	---	---	
Dibromochloromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Dibromomethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,1-Dichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1-Dichloroethene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,2-Dichloropropane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,3-Dichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
2,2-Dichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	

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Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110522 - EPA 5030B												**Water**
Blank (6110522-BLK1)						Prepared: 11/14/16 10:07 Analyzed: 11/14/16 12:26						
EPA 8260B												
1,1-Dichloropropene	ND	0.500	1.00	ug/L	"	---	---	---	---	---	---	
cis-1,3-Dichloropropene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Ethylbenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	2.50	5.00	"	"	---	---	---	---	---	---	
2-Hexanone	ND	5.00	10.0	"	"	---	---	---	---	---	---	
Isopropylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Isopropyltoluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	---	---	---	---	---	---	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Methylene chloride	ND	1.50	3.00	"	"	---	---	---	---	---	---	
Naphthalene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
n-Propylbenzene	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Styrene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Toluene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	---	---	---	---	---	---	
Trichlorofluoromethane	ND	1.00	2.00	"	"	---	---	---	---	---	---	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Vinyl chloride	ND	0.250	0.500	"	"	---	---	---	---	---	---	
m,p-Xylene	ND	0.500	1.00	"	"	---	---	---	---	---	---	
o-Xylene	ND	0.500	0.500	"	"	---	---	---	---	---	---	

Surr: 1,4-Difluorobenzene (Surr) *Recovery: 99 %* *Limits: 80-120 %* *Dilution: 1x*
Toluene-d8 (Surr) *107 %* *80-120 %* *"*
4-Bromofluorobenzene (Surr) *115 %* *80-120 %* *"*

LCS (6110522-BS1) Prepared: 11/14/16 10:07 Analyzed: 11/14/16 11:30

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110522 - EPA 5030B							**Water**					
LCS (6110522-BS1)					Prepared: 11/14/16 10:07 Analyzed: 11/14/16 11:30							
EPA 8260B												
Acetone	29.8	10.0	20.0	ug/L	1	40.0	---	74	70-130%	---	---	
Benzene	19.2	0.100	0.200	"	"	20.0	---	96	"	---	---	
Bromobenzene	22.9	0.250	0.500	"	"	"	---	114	"	---	---	
Bromochloromethane	18.0	0.500	1.00	"	"	"	---	90	"	---	---	
Bromodichloromethane	20.4	0.500	1.00	"	"	"	---	102	"	---	---	
Bromoform	22.7	0.500	1.00	"	"	"	---	114	"	---	---	
Bromomethane	24.1	5.00	5.00	"	"	"	---	121	"	---	---	
2-Butanone (MEK)	30.7	5.00	10.0	"	"	40.0	---	77	"	---	---	
n-Butylbenzene	21.9	0.500	1.00	"	"	20.0	---	109	"	---	---	
sec-Butylbenzene	22.8	0.500	1.00	"	"	"	---	114	"	---	---	
tert-Butylbenzene	22.7	0.500	1.00	"	"	"	---	113	"	---	---	
Carbon tetrachloride	21.9	0.500	1.00	"	"	"	---	110	"	---	---	
Chlorobenzene	22.5	0.250	0.500	"	"	"	---	113	"	---	---	
Chloroethane	24.5	5.00	5.00	"	"	"	---	123	"	---	---	
Chloroform	20.5	0.500	1.00	"	"	"	---	102	"	---	---	
Chloromethane	19.5	2.50	5.00	"	"	"	---	98	"	---	---	
2-Chlorotoluene	22.7	0.500	1.00	"	"	"	---	113	"	---	---	
4-Chlorotoluene	22.0	0.500	1.00	"	"	"	---	110	"	---	---	
1,2-Dibromo-3-chloropropane	20.0	2.50	5.00	"	"	"	---	100	"	---	---	
Dibromochloromethane	23.2	0.500	1.00	"	"	"	---	116	"	---	---	
1,2-Dibromoethane (EDB)	22.8	0.250	0.500	"	"	"	---	114	"	---	---	
Dibromomethane	19.3	0.500	1.00	"	"	"	---	96	"	---	---	
1,2-Dichlorobenzene	23.2	0.250	0.500	"	"	"	---	116	"	---	---	
1,3-Dichlorobenzene	23.1	0.250	0.500	"	"	"	---	116	"	---	---	
1,4-Dichlorobenzene	22.4	0.250	0.500	"	"	"	---	112	"	---	---	
Dichlorodifluoromethane	27.0	0.500	1.00	"	"	"	---	135	"	---	---	Q-29
1,1-Dichloroethane	19.1	0.250	0.500	"	"	"	---	96	"	---	---	
1,2-Dichloroethane (EDC)	20.2	0.250	0.500	"	"	"	---	101	"	---	---	
1,1-Dichloroethene	19.3	0.250	0.500	"	"	"	---	96	"	---	---	
cis-1,2-Dichloroethene	18.6	0.250	0.500	"	"	"	---	93	"	---	---	
trans-1,2-Dichloroethene	18.3	0.250	0.500	"	"	"	---	92	"	---	---	
1,2-Dichloropropane	19.1	0.250	0.500	"	"	"	---	95	"	---	---	
1,3-Dichloropropane	20.4	0.500	1.00	"	"	"	---	102	"	---	---	
2,2-Dichloropropane	22.0	0.500	1.00	"	"	"	---	110	"	---	---	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110522 - EPA 5030B							**Water**					
LCS (6110522-BS1)					Prepared: 11/14/16 10:07 Analyzed: 11/14/16 11:30							
EPA 8260B												
1,1-Dichloropropene	20.7	0.500	1.00	ug/L	"	"	---	103	"	---	---	
cis-1,3-Dichloropropene	20.2	0.500	1.00	"	"	"	---	101	"	---	---	
trans-1,3-Dichloropropene	22.5	0.500	1.00	"	"	"	---	113	"	---	---	
Ethylbenzene	22.9	0.250	0.500	"	"	"	---	115	"	---	---	
Hexachlorobutadiene	22.4	2.50	5.00	"	"	"	---	112	"	---	---	
2-Hexanone	33.1	5.00	10.0	"	"	40.0	---	83	"	---	---	
Isopropylbenzene	23.9	0.500	1.00	"	"	20.0	---	119	"	---	---	
4-Isopropyltoluene	23.6	0.500	1.00	"	"	"	---	118	"	---	---	
4-Methyl-2-pentanone (MiBK)	34.5	5.00	10.0	"	"	40.0	---	86	"	---	---	
Methyl tert-butyl ether (MTBE)	19.3	0.500	1.00	"	"	20.0	---	96	"	---	---	
Methylene chloride	19.8	1.50	3.00	"	"	"	---	99	"	---	---	
Naphthalene	19.7	1.00	2.00	"	"	"	---	98	"	---	---	
n-Propylbenzene	22.2	0.250	0.500	"	"	"	---	111	"	---	---	
Styrene	21.6	0.500	1.00	"	"	"	---	108	"	---	---	
1,1,1,2-Tetrachloroethane	23.2	0.250	0.500	"	"	"	---	116	"	---	---	
1,1,2,2-Tetrachloroethane	19.2	0.250	0.500	"	"	"	---	96	"	---	---	
Tetrachloroethene (PCE)	23.8	0.250	0.500	"	"	"	---	119	"	---	---	
Toluene	21.6	0.500	1.00	"	"	"	---	108	"	---	---	
1,2,3-Trichlorobenzene	20.6	1.00	2.00	"	"	"	---	103	"	---	---	
1,2,4-Trichlorobenzene	20.6	1.00	2.00	"	"	"	---	103	"	---	---	
1,1,1-Trichloroethane	21.8	0.250	0.500	"	"	"	---	109	"	---	---	
1,1,2-Trichloroethane	22.1	0.250	0.500	"	"	"	---	110	"	---	---	
Trichloroethene (TCE)	20.7	0.250	0.500	"	"	"	---	104	"	---	---	
Trichlorofluoromethane	23.0	1.00	2.00	"	"	"	---	115	"	---	---	
1,2,3-Trichloropropane	19.9	0.500	1.00	"	"	"	---	100	"	---	---	
1,2,4-Trimethylbenzene	23.5	0.500	1.00	"	"	"	---	117	"	---	---	
1,3,5-Trimethylbenzene	24.1	0.500	1.00	"	"	"	---	121	"	---	---	
Vinyl chloride	24.1	0.250	0.500	"	"	"	---	120	"	---	---	
m,p-Xylene	49.0	0.500	1.00	"	"	40.0	---	122	"	---	---	
o-Xylene	22.8	0.500	0.500	"	"	20.0	---	114	"	---	---	

Surr: 1,4-Difluorobenzene (Surr)	*Recovery: 93 %*	*Limits: 80-120 %*	*Dilution: 1x*
Toluene-d8 (Surr)	*103 %*	*80-120 %*	*"*
4-Bromofluorobenzene (Surr)	*110 %*	*80-120 %*	*"*

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Anions by EPA 300.0/9056A (Ion Chromatography)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110515 - Method Prep: Aq								**Water**				
Blank (6110515-BLK1)					Prepared: 11/12/16 07:34		Analyzed: 11/12/16 09:08					
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	---	---	---	---	---	
Nitrite-Nitrogen	ND	---	0.250	"	"	---	---	---	---	---	---	
Sulfate	ND	---	1.00	"	"	---	---	---	---	---	---	
LCS (6110515-BS1)					Prepared: 11/12/16 07:34		Analyzed: 11/12/16 09:29					
EPA 300.0												
Nitrate-Nitrogen	2.05	---	0.250	mg/L	1	2.00	---	103	90-110%	---	---	
Nitrite-Nitrogen	2.07	---	0.250	"	"	"	---	103	"	---	---	
Sulfate	8.47	---	1.00	"	"	8.00	---	106	"	---	---	
Duplicate (6110515-DUP1)					Prepared: 11/12/16 07:34		Analyzed: 11/12/16 10:12					
QC Source Sample: LW009D (A6K0316-01)												
EPA 300.0												
Nitrate-Nitrogen	ND	---	0.250	mg/L	1	---	ND	---	---	---	15%	
Nitrite-Nitrogen	ND	---	0.250	"	"	---	ND	---	---	---	15%	
Sulfate	ND	---	1.00	"	"	---	ND	---	---	---	15%	
Matrix Spike (6110515-MS1)					Prepared: 11/12/16 07:34		Analyzed: 11/12/16 10:34					
QC Source Sample: LW009D (A6K0316-01)												
EPA 300.0												
Nitrate-Nitrogen	2.59	---	0.312	mg/L	1	2.50	ND	104	80-120%	---	---	
Nitrite-Nitrogen	2.58	---	0.312	"	"	"	ND	103	"	---	---	
Sulfate	10.7	---	1.25	"	"	10.0	ND	107	"	---	---	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Nitrate + Nitrite by EPA 353.2

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110506 - Method Prep: Aq								**Water**				
Blank (6110506-BLK1)					Prepared: 11/11/16 14:27		Analyzed: 11/11/16 15:14					
EPA 353.2												
Nitrite-Nitrogen	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (6110506-BS1)					Prepared: 11/11/16 14:27		Analyzed: 11/11/16 15:16					
EPA 353.2												
Nitrite-Nitrogen	0.410	---	0.0200	mg/L	1	0.375	---	109	90-110%	---	---	
Duplicate (6110506-DUP1)					Prepared: 11/11/16 14:27		Analyzed: 11/11/16 15:18					
QC Source Sample: LW009D (A6K0316-01)												
EPA 353.2												
Nitrite-Nitrogen	ND	---	0.0200	mg/L	1	---	0.0100	---	---		10%	
Matrix Spike (6110506-MS1)					Prepared: 11/11/16 14:27		Analyzed: 11/11/16 15:19					
QC Source Sample: LW009D (A6K0316-01)												
EPA 353.2												
Nitrite-Nitrogen	0.395	---	0.0208	mg/L	1	0.390	ND	101	90-110%	---	---	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Nitrate + Nitrite by EPA 353.2

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110568 - Method Prep: Aq									**Water**			
Blank (6110568-BLK1)					Prepared: 11/15/16 09:03		Analyzed: 11/15/16 14:18					
EPA 353.2												
Nitrate+Nitrite Nitrogen	ND	---	0.0200	mg/L	1	---	---	---	---	---	---	
LCS (6110568-BS1)					Prepared: 11/15/16 09:03		Analyzed: 11/15/16 14:19					
EPA 353.2												
Nitrate+Nitrite Nitrogen	0.380	---	0.0200	mg/L	1	0.375	---	101	90-110%	---	---	
Duplicate (6110568-DUP1)					Prepared: 11/15/16 09:03		Analyzed: 11/15/16 14:22					
QC Source Sample: LW009D (A6K0316-01)												
EPA 353.2												
Nitrate+Nitrite Nitrogen	**0.0200**	---	0.0200	mg/L	1	---	0.0200	---	---	0	10%	
Matrix Spike (6110568-MS1)					Prepared: 11/15/16 09:03		Analyzed: 11/15/16 14:40					
QC Source Sample: LW009D (A6K0316-01)												
EPA 353.2												
Nitrate+Nitrite Nitrogen	0.426	---	0.0208	mg/L	1	0.390	0.0200	104	90-110%	---	---	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110545 - EPA 3510C (Acid/Base Neutral)							**Water**					
Blank (6110545-BLK1)					Prepared: 11/14/16 14:30 Analyzed: 11/14/16 19:16							
EPA 8270D												
Acenaphthene	ND	0.00909	0.0182	ug/L	1	---	---	---	---	---	---	
Acenaphthylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benz(a)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Benzo(a)pyrene	ND	0.0118	0.0273	"	"	---	---	---	---	---	---	
Benzo(b)fluoranthene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(k)fluoranthene	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Benzo(g,h,i)perylene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Chrysene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Dibenz(a,h)anthracene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluoranthene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Fluorene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Indeno(1,2,3-cd)pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
1-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
2-Methylnaphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Naphthalene	ND	0.0182	0.0364	"	"	---	---	---	---	---	---	
Phenanthrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Pyrene	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
Carbazole	ND	0.0136	0.0273	"	"	---	---	---	---	---	---	
Dibenzofuran	ND	0.00909	0.0182	"	"	---	---	---	---	---	---	
4-Chloro-3-methylphenol	ND	0.227	0.455	"	"	---	---	---	---	---	---	
2-Chlorophenol	ND	0.227	0.455	"	"	---	---	---	---	---	---	
2,4-Dichlorophenol	ND	0.227	0.455	"	"	---	---	---	---	---	---	
2,4-Dimethylphenol	ND	0.227	0.455	"	"	---	---	---	---	---	---	
2,4-Dinitrophenol	ND	0.227	0.455	"	"	---	---	---	---	---	---	
4,6-Dinitro-2-methylphenol	ND	0.455	0.909	"	"	---	---	---	---	---	---	
2-Methylphenol	ND	0.227	0.455	"	"	---	---	---	---	---	---	
3+4-Methylphenol(s)	ND	0.227	0.455	"	"	---	---	---	---	---	---	
2-Nitrophenol	ND	0.227	0.455	"	"	---	---	---	---	---	---	
4-Nitrophenol	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Pentachlorophenol (PCP)	ND	0.0909	0.182	"	"	---	---	---	---	---	---	
Phenol	ND	0.227	0.455	"	"	---	---	---	---	---	---	
2,3,4,6-Tetrachlorophenol	ND	0.227	0.455	"	"	---	---	---	---	---	---	
2,3,5,6-Tetrachlorophenol	ND	0.227	0.455	"	"	---	---	---	---	---	---	

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Darwin Thomas, Business Development Director

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110545 - EPA 3510C (Acid/Base Neutral)							**Water**					
Blank (6110545-BLK1)					Prepared: 11/14/16 14:30 Analyzed: 11/14/16 19:16							
EPA 8270D												
2,4,5-Trichlorophenol	ND	0.227	0.455	ug/L	"	---	---	---	---	---	---	
2,4,6-Trichlorophenol	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Bis(2-ethylhexyl)phthalate	ND	0.455	0.909	"	"	---	---	---	---	---	---	
Butyl benzyl phthalate	ND	0.455	0.909	"	"	---	---	---	---	---	---	
Diethylphthalate	ND	0.455	0.909	"	"	---	---	---	---	---	---	
Dimethylphthalate	ND	0.455	0.909	"	"	---	---	---	---	---	---	
Di-n-butylphthalate	ND	0.455	0.909	"	"	---	---	---	---	---	---	
Di-n-octyl phthalate	ND	0.455	0.909	"	"	---	---	---	---	---	---	
N-Nitrosodimethylamine	ND	0.227	0.455	"	"	---	---	---	---	---	---	
N-Nitroso-di-n-propylamine	ND	0.227	0.455	"	"	---	---	---	---	---	---	
N-Nitrosodiphenylamine	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Bis(2-Chloroethoxy) methane	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Bis(2-Chloroethyl) ether	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Bis(2-Chloroisopropyl) ether	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Hexachlorobenzene	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Hexachlorobutadiene	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Hexachlorocyclopentadiene	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Hexachloroethane	ND	0.227	0.455	"	"	---	---	---	---	---	---	
2-Chloronaphthalene	ND	0.227	0.455	"	"	---	---	---	---	---	---	
1,2-Dichlorobenzene	ND	0.227	0.455	"	"	---	---	---	---	---	---	
1,3-Dichlorobenzene	ND	0.227	0.455	"	"	---	---	---	---	---	---	
1,4-Dichlorobenzene	ND	0.227	0.455	"	"	---	---	---	---	---	---	
1,2,4-Trichlorobenzene	ND	0.227	0.455	"	"	---	---	---	---	---	---	
4-Bromophenyl phenyl ether	ND	0.227	0.455	"	"	---	---	---	---	---	---	
4-Chlorophenyl phenyl ether	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Aniline	ND	0.227	0.455	"	"	---	---	---	---	---	---	
4-Chloroaniline	ND	0.455	0.909	"	"	---	---	---	---	---	---	
2-Nitroaniline	ND	0.455	0.909	"	"	---	---	---	---	---	---	
3-Nitroaniline	ND	0.455	0.909	"	"	---	---	---	---	---	---	
4-Nitroaniline	ND	0.455	0.909	"	"	---	---	---	---	---	---	
Nitrobenzene	ND	0.227	0.455	"	"	---	---	---	---	---	---	
2,4-Dinitrotoluene	ND	0.227	0.455	"	"	---	---	---	---	---	---	
2,6-Dinitrotoluene	ND	0.227	0.455	"	"	---	---	---	---	---	---	
1,2-Dinitrobenzene	ND	0.227	0.455	"	"	---	---	---	---	---	---	

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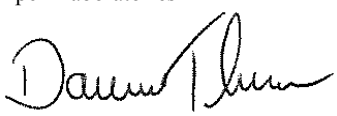

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Tigard, OR 97223
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503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110545 - EPA 3510C (Acid/Base Neutral)									**Water**			
Blank (6110545-BLK1)					Prepared: 11/14/16 14:30 Analyzed: 11/14/16 19:16							
EPA 8270D												
1,3-Dinitrobenzene	ND	0.227	0.455	ug/L	"	---	---	---	---	---	---	
1,4-Dinitrobenzene	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Benzoic acid	ND	0.909	1.82	"	"	---	---	---	---	---	---	
Benzyl alcohol	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Azobenzene (1,2-DPH)	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Bis(2-Ethylhexyl) adipate	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Isophorone	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Pyridine	ND	0.227	0.455	"	"	---	---	---	---	---	---	
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 62 %*		*Limits: 44-120 %*				*Dilution: 1x*			
2-Fluorobiphenyl (Surr)			*77 %*		*44-120 %*				*"*			
Phenol-d6 (Surr)			*24 %*		*10-120 %*				*"*			
p-Terphenyl-d14 (Surr)			*112 %*		*50-133 %*				*"*			
2-Fluorophenol (Surr)			*36 %*		*19-120 %*				*"*			
2,4,6-Tribromophenol (Surr)			*96 %*		*43-140 %*				*"*			*Q-41*
LCS (6110545-BS1)					Prepared: 11/14/16 14:30 Analyzed: 11/14/16 19:52							
EPA 8270D												
Acenaphthene	3.35	0.0100	0.0200	ug/L	1	4.00	---	84	47-122%	---	---	
Acenaphthylene	3.48	0.0100	0.0200	"	"	"	---	87	41-130%	---	---	
Anthracene	3.65	0.0100	0.0200	"	"	"	---	91	57-123%	---	---	
Benz(a)anthracene	3.80	0.0100	0.0200	"	"	"	---	95	58-125%	---	---	
Benzo(a)pyrene	3.87	0.0130	0.0300	"	"	"	---	97	54-128%	---	---	
Benzo(b)fluoranthene	4.31	0.0150	0.0300	"	"	"	---	108	53-131%	---	---	
Benzo(k)fluoranthene	4.12	0.0150	0.0300	"	"	"	---	103	57-129%	---	---	
Benzo(g,h,i)perylene	4.07	0.0100	0.0200	"	"	"	---	102	50-134%	---	---	
Chrysene	3.79	0.0100	0.0200	"	"	"	---	95	59-123%	---	---	
Dibenz(a,h)anthracene	3.97	0.0100	0.0200	"	"	"	---	99	51-134%	---	---	
Fluoranthene	3.80	0.0100	0.0200	"	"	"	---	95	57-128%	---	---	
Fluorene	3.60	0.0100	0.0200	"	"	"	---	90	52-124%	---	---	
Indeno(1,2,3-cd)pyrene	3.83	0.0100	0.0200	"	"	"	---	96	52-133%	---	---	
1-Methylnaphthalene	3.24	0.0200	0.0400	"	"	"	---	81	41-120%	---	---	
2-Methylnaphthalene	3.25	0.0200	0.0400	"	"	"	---	81	40-121%	---	---	
Naphthalene	2.96	0.0200	0.0400	"	"	"	---	74	"	---	---	
Phenanthrene	3.46	0.0100	0.0200	"	"	"	---	86	59-120%	---	---	
Pyrene	3.79	0.0100	0.0200	"	"	"	---	95	57-126%	---	---	

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Tigard, OR 97223
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503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110545 - EPA 3510C (Acid/Base Neutral)									**Water**			
LCS (6110545-BS1)					Prepared: 11/14/16 14:30 Analyzed: 11/14/16 19:52							
EPA 8270D												
Carbazole	3.33	0.0150	0.0300	ug/L	"	"	---	83	60-122%	---	---	
Dibenzofuran	3.57	0.0100	0.0200	"	"	"	---	89	53-120%	---	---	
4-Chloro-3-methylphenol	3.41	0.250	0.500	"	"	"	---	85	52-120%	---	---	
2-Chlorophenol	3.16	0.250	0.500	"	"	"	---	79	38-120%	---	---	
2,4-Dichlorophenol	3.65	0.250	0.500	"	"	"	---	91	47-121%	---	---	
2,4-Dimethylphenol	3.16	0.250	0.500	"	"	"	---	79	31-124%	---	---	
2,4-Dinitrophenol	4.04	0.250	0.500	"	"	"	---	101	23-143%	---	---	
4,6-Dinitro-2-methylphenol	4.20	0.500	1.00	"	"	"	---	105	44-137%	---	---	
2-Methylphenol	2.75	0.250	0.500	"	"	"	---	69	30-120%	---	---	
3+4-Methylphenol(s)	2.70	0.250	0.500	"	"	"	---	68	29-120%	---	---	
2-Nitrophenol	3.74	0.250	0.500	"	"	"	---	94	47-123%	---	---	
4-Nitrophenol	1.58	0.250	0.500	"	"	"	---	39	5-120%	---	---	
Pentachlorophenol (PCP)	3.81	0.100	0.200	"	"	"	---	95	35-138%	---	---	
Phenol	1.46	0.250	0.500	"	"	"	---	36	5-120%	---	---	
2,3,4,6-Tetrachlorophenol	4.04	0.250	0.500	"	"	"	---	101	50-128%	---	---	
2,3,5,6-Tetrachlorophenol	3.78	0.250	0.500	"	"	"	---	95	50-121%	---	---	
2,4,5-Trichlorophenol	3.94	0.250	0.500	"	"	"	---	99	53-123%	---	---	
2,4,6-Trichlorophenol	3.93	0.250	0.500	"	"	"	---	98	50-125%	---	---	
Bis(2-ethylhexyl)phthalate	3.82	0.500	1.00	"	"	"	---	96	55-135%	---	---	
Butyl benzyl phthalate	3.89	0.500	1.00	"	"	"	---	97	53-134%	---	---	
Diethylphthalate	3.48	0.500	1.00	"	"	"	---	87	55-125%	---	---	
Dimethylphthalate	3.71	0.500	1.00	"	"	"	---	93	45-127%	---	---	
Di-n-butylphthalate	3.89	0.500	1.00	"	"	"	---	97	59-127%	---	---	
Di-n-octyl phthalate	3.55	0.500	1.00	"	"	"	---	89	51-140%	---	---	
N-Nitrosodimethylamine	1.70	0.250	0.500	"	"	"	---	43	6-120%	---	---	
N-Nitroso-di-n-propylamine	3.03	0.250	0.500	"	"	"	---	76	49-120%	---	---	
N-Nitrosodiphenylamine	3.78	0.250	0.500	"	"	"	---	95	51-123%	---	---	
Bis(2-Chloroethoxy) methane	3.15	0.250	0.500	"	"	"	---	79	48-120%	---	---	
Bis(2-Chloroethyl) ether	2.94	0.250	0.500	"	"	"	---	73	43-120%	---	---	
Bis(2-Chloroisopropyl) ether	2.67	0.250	0.500	"	"	"	---	67	37-130%	---	---	
Hexachlorobenzene	3.76	0.250	0.500	"	"	"	---	94	52-125%	---	---	
Hexachlorobutadiene	2.93	0.250	0.500	"	"	"	---	73	22-124%	---	---	
Hexachlorocyclopentadiene	3.22	0.250	0.500	"	"	"	---	81	5-127%	---	---	
Hexachloroethane	2.55	0.250	0.500	"	"	"	---	64	21-120%	---	---	

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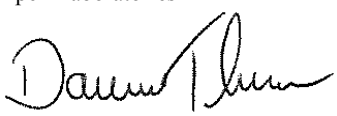

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Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110545 - EPA 3510C (Acid/Base Neutral)							**Water**					
LCS (6110545-BS1)					Prepared: 11/14/16 14:30		Analyzed: 11/14/16 19:52					
EPA 8270D												
2-Chloronaphthalene	3.37	0.250	0.500	ug/L	"	"	---	84	40-120%	---	---	
1,2-Dichlorobenzene	2.72	0.250	0.500	"	"	"	---	68	32-120%	---	---	
1,3-Dichlorobenzene	2.66	0.250	0.500	"	"	"	---	67	28-120%	---	---	
1,4-Dichlorobenzene	2.66	0.250	0.500	"	"	"	---	66	29-120%	---	---	
1,2,4-Trichlorobenzene	3.12	0.250	0.500	"	"	"	---	78	"	---	---	
4-Bromophenyl phenyl ether	3.83	0.250	0.500	"	"	"	---	96	54-124%	---	---	
4-Chlorophenyl phenyl ether	3.76	0.250	0.500	"	"	"	---	94	53-121%	---	---	
Aniline	2.64	0.250	0.500	"	"	"	---	66	6-120%	---	---	Q-31
4-Chloroaniline	2.69	0.500	1.00	"	"	"	---	67	33-120%	---	---	Q-31
2-Nitroaniline	3.67	0.500	1.00	"	"	"	---	92	54-127%	---	---	
3-Nitroaniline	3.28	0.500	1.00	"	"	"	---	82	41-128%	---	---	Q-31
4-Nitroaniline	3.10	0.500	1.00	"	"	"	---	77	35-120%	---	---	Q-31
Nitrobenzene	2.84	0.250	0.500	"	"	"	---	71	45-121%	---	---	
2,4-Dinitrotoluene	3.70	0.250	0.500	"	"	"	---	92	57-128%	---	---	
2,6-Dinitrotoluene	3.83	0.250	0.500	"	"	"	---	96	57-124%	---	---	
1,2-Dinitrobenzene	3.99	0.250	0.500	"	"	"	---	100	59-120%	---	---	
1,3-Dinitrobenzene	3.86	0.250	0.500	"	"	"	---	96	49-128%	---	---	
1,4-Dinitrobenzene	3.82	0.250	0.500	"	"	"	---	96	40-120%	---	---	
Benzoic acid	2.03	1.00	2.00	"	"	8.00	---	25	5-120%	---	---	
Benzyl alcohol	3.28	0.250	0.500	"	"	4.00	---	82	31-120%	---	---	
Azobenzene (1,2-DPH)	3.17	0.250	0.500	"	"	"	---	79	61-120%	---	---	
Bis(2-Ethylhexyl) adipate	3.79	0.250	0.500	"	"	"	---	95	40-125%	---	---	
Isophorone	3.19	0.250	0.500	"	"	"	---	80	42-124%	---	---	
Pyridine	1.81	0.250	0.500	"	"	"	---	45	5-120%	---	---	Q-31
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 72 %*		*Limits: 44-120 %*			*Dilution: 1x*				
2-Fluorobiphenyl (Surr)			*81 %*		*44-120 %*			*"*				
Phenol-d6 (Surr)			*30 %*		*10-120 %*			*"*				
p-Terphenyl-d14 (Surr)			*102 %*		*50-133 %*			*"*				
2-Fluorophenol (Surr)			*44 %*		*19-120 %*			*"*				
2,4,6-Tribromophenol (Surr)			*103 %*		*43-140 %*			*"*				*Q-41*
LCS Dup (6110545-BSD1)					Prepared: 11/14/16 14:30		Analyzed: 11/14/16 20:28					Q-19
EPA 8270D												
Acenaphthene	2.75	0.0100	0.0200	ug/L	1	4.00	---	69	47-122%	20	30%	
Acenaphthylene	2.93	0.0100	0.0200	"	"	"	---	73	41-130%	17	30%	

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19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110545 - EPA 3510C (Acid/Base Neutral)							**Water**					
LCS Dup (6110545-BSD1)					Prepared: 11/14/16 14:30		Analyzed: 11/14/16 20:28					Q-19
EPA 8270D												
Anthracene	3.56	0.0100	0.0200	ug/L	"	"	---	89	57-123%	3	30%	
Benz(a)anthracene	3.94	0.0100	0.0200	"	"	"	---	99	58-125%	4	30%	
Benzo(a)pyrene	3.99	0.0130	0.0300	"	"	"	---	100	54-128%	3	30%	
Benzo(b)fluoranthene	4.37	0.0150	0.0300	"	"	"	---	109	53-131%	1	30%	
Benzo(k)fluoranthene	4.30	0.0150	0.0300	"	"	"	---	108	57-129%	4	30%	
Benzo(g,h,i)perylene	4.19	0.0100	0.0200	"	"	"	---	105	50-134%	3	30%	
Chrysene	3.93	0.0100	0.0200	"	"	"	---	98	59-123%	4	30%	
Dibenz(a,h)anthracene	4.14	0.0100	0.0200	"	"	"	---	103	51-134%	4	30%	
Fluoranthene	3.84	0.0100	0.0200	"	"	"	---	96	57-128%	1	30%	
Fluorene	3.23	0.0100	0.0200	"	"	"	---	81	52-124%	11	30%	
Indeno(1,2,3-cd)pyrene	3.98	0.0100	0.0200	"	"	"	---	100	52-133%	4	30%	
1-Methylnaphthalene	2.21	0.0200	0.0400	"	"	"	---	55	41-120%	38	30%	Q-24
2-Methylnaphthalene	2.16	0.0200	0.0400	"	"	"	---	54	40-121%	40	30%	Q-24
Naphthalene	2.04	0.0200	0.0400	"	"	"	---	51	"	37	30%	Q-24
Phenanthrene	3.38	0.0100	0.0200	"	"	"	---	84	59-120%	2	30%	
Pyrene	3.91	0.0100	0.0200	"	"	"	---	98	57-126%	3	30%	
Carbazole	3.60	0.0150	0.0300	"	"	"	---	90	60-122%	8	30%	
Dibenzofuran	3.05	0.0100	0.0200	"	"	"	---	76	53-120%	16	30%	
4-Chloro-3-methylphenol	3.11	0.250	0.500	"	"	"	---	78	52-120%	9	30%	
2-Chlorophenol	2.81	0.250	0.500	"	"	"	---	70	38-120%	12	30%	
2,4-Dichlorophenol	3.31	0.250	0.500	"	"	"	---	83	47-121%	10	30%	
2,4-Dimethylphenol	2.88	0.250	0.500	"	"	"	---	72	31-124%	9	30%	
2,4-Dinitrophenol	3.94	0.250	0.500	"	"	"	---	99	23-143%	2	30%	
4,6-Dinitro-2-methylphenol	4.18	0.500	1.00	"	"	"	---	105	44-137%	0.4	30%	
2-Methylphenol	2.42	0.250	0.500	"	"	"	---	60	30-120%	13	30%	
3+4-Methylphenol(s)	2.32	0.250	0.500	"	"	"	---	58	29-120%	15	30%	
2-Nitrophenol	3.30	0.250	0.500	"	"	"	---	82	47-123%	13	30%	
4-Nitrophenol	1.51	0.250	0.500	"	"	"	---	38	5-120%	4	30%	
Pentachlorophenol (PCP)	3.80	0.100	0.200	"	"	"	---	95	35-138%	0.4	30%	
Phenol	1.24	0.250	0.500	"	"	"	---	31	5-120%	16	30%	
2,3,4,6-Tetrachlorophenol	3.87	0.250	0.500	"	"	"	---	97	50-128%	4	30%	
2,3,5,6-Tetrachlorophenol	3.68	0.250	0.500	"	"	"	---	92	50-121%	3	30%	
2,4,5-Trichlorophenol	3.75	0.250	0.500	"	"	"	---	94	53-123%	5	30%	
2,4,6-Trichlorophenol	3.65	0.250	0.500	"	"	"	---	91	50-125%	7	30%	

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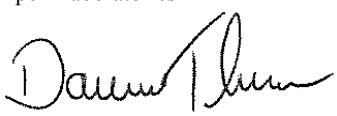

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110545 - EPA 3510C (Acid/Base Neutral)							**Water**					
LCS Dup (6110545-BSD1)					Prepared: 11/14/16 14:30		Analyzed: 11/14/16 20:28					Q-19
EPA 8270D												
Bis(2-ethylhexyl)phthalate	3.97	0.500	1.00	ug/L	"	"	---	99	55-135%	4	30%	
Butyl benzyl phthalate	4.04	0.500	1.00	"	"	"	---	101	53-134%	4	30%	
Diethylphthalate	3.34	0.500	1.00	"	"	"	---	83	55-125%	4	30%	
Dimethylphthalate	3.54	0.500	1.00	"	"	"	---	88	45-127%	5	30%	
Di-n-butylphthalate	3.95	0.500	1.00	"	"	"	---	99	59-127%	1	30%	
Di-n-octyl phthalate	3.71	0.500	1.00	"	"	"	---	93	51-140%	4	30%	
N-Nitrosodimethylamine	1.46	0.250	0.500	"	"	"	---	37	6-120%	15	30%	
N-Nitroso-di-n-propylamine	2.73	0.250	0.500	"	"	"	---	68	49-120%	10	30%	
N-Nitrosodiphenylamine	3.71	0.250	0.500	"	"	"	---	93	51-123%	2	30%	
Bis(2-Chloroethoxy) methane	2.79	0.250	0.500	"	"	"	---	70	48-120%	12	30%	
Bis(2-Chloroethyl) ether	2.63	0.250	0.500	"	"	"	---	66	43-120%	11	30%	
Bis(2-Chloroisopropyl) ether	2.28	0.250	0.500	"	"	"	---	57	37-130%	16	30%	
Hexachlorobenzene	3.69	0.250	0.500	"	"	"	---	92	52-125%	2	30%	
Hexachlorobutadiene	1.33	0.250	0.500	"	"	"	---	33	22-124%	75	30%	Q-24
Hexachlorocyclopentadiene	1.48	0.250	0.500	"	"	"	---	37	5-127%	74	30%	Q-24
Hexachloroethane	1.22	0.250	0.500	"	"	"	---	30	21-120%	71	30%	Q-24
2-Chloronaphthalene	2.42	0.250	0.500	"	"	"	---	60	40-120%	33	30%	Q-24
1,2-Dichlorobenzene	1.53	0.250	0.500	"	"	"	---	38	32-120%	56	30%	Q-24
1,3-Dichlorobenzene	1.40	0.250	0.500	"	"	"	---	35	28-120%	62	30%	Q-24
1,4-Dichlorobenzene	1.45	0.250	0.500	"	"	"	---	36	29-120%	59	30%	Q-24
1,2,4-Trichlorobenzene	1.70	0.250	0.500	"	"	"	---	42	"	59	30%	Q-24
4-Bromophenyl phenyl ether	3.65	0.250	0.500	"	"	"	---	91	54-124%	5	30%	
4-Chlorophenyl phenyl ether	3.31	0.250	0.500	"	"	"	---	83	53-121%	13	30%	
Aniline	2.32	0.250	0.500	"	"	"	---	58	6-120%	13	30%	Q-31
4-Chloroaniline	2.56	0.500	1.00	"	"	"	---	64	33-120%	5	30%	Q-31
2-Nitroaniline	3.59	0.500	1.00	"	"	"	---	90	54-127%	2	30%	
3-Nitroaniline	3.27	0.500	1.00	"	"	"	---	82	41-128%	0.3	30%	Q-31
4-Nitroaniline	3.25	0.500	1.00	"	"	"	---	81	35-120%	5	30%	Q-31
Nitrobenzene	2.52	0.250	0.500	"	"	"	---	63	45-121%	12	30%	
2,4-Dinitrotoluene	3.62	0.250	0.500	"	"	"	---	90	57-128%	2	30%	
2,6-Dinitrotoluene	3.61	0.250	0.500	"	"	"	---	90	57-124%	6	30%	
1,2-Dinitrobenzene	3.77	0.250	0.500	"	"	"	---	94	59-120%	6	30%	
1,3-Dinitrobenzene	3.70	0.250	0.500	"	"	"	---	93	49-128%	4	30%	
1,4-Dinitrobenzene	3.68	0.250	0.500	"	"	"	---	92	40-120%	4	30%	

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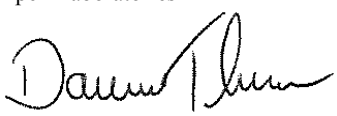

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110545 - EPA 3510C (Acid/Base Neutral)							**Water**					
LCS Dup (6110545-BSD1)					Prepared: 11/14/16 14:30		Analyzed: 11/14/16 20:28					Q-19
EPA 8270D												
Benzoic acid	1.78	1.00	2.00	ug/L	"	8.00	---	22	5-120%	13	30%	J
Benzyl alcohol	2.95	0.250	0.500	"	"	4.00	---	74	31-120%	11	30%	
Azobenzene (1,2-DPH)	2.96	0.250	0.500	"	"	"	---	74	61-120%	7	30%	
Bis(2-Ethylhexyl) adipate	3.93	0.250	0.500	"	"	"	---	98	40-125%	4	30%	
Isophorone	2.83	0.250	0.500	"	"	"	---	71	42-124%	12	30%	
Pyridine	1.62	0.250	0.500	"	"	"	---	40	5-120%	11	30%	Q-31
Surr: Nitrobenzene-d5 (Surr)			*Recovery: 64 %*		*Limits: 44-120 %*		*Dilution: 1x*					
2-Fluorobiphenyl (Surr)			*67 %*		*44-120 %*		*"*					
Phenol-d6 (Surr)			*26 %*		*10-120 %*		*"*					
p-Terphenyl-d14 (Surr)			*103 %*		*50-133 %*		*"*					
2-Fluorophenol (Surr)			*37 %*		*19-120 %*		*"*					
2,4,6-Tribromophenol (Surr)			*102 %*		*43-140 %*		*"*					*Q-41*

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19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110749 - EPA 3015A							**Water**					
Blank (6110749-BLK1)					Prepared: 11/21/16 09:01		Analyzed: 11/21/16 17:11					
EPA 6020A												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chromium	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Copper	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Lead	ND	0.100	0.200	"	"	---	---	---	---	---	---	
Nickel	ND	0.500	1.00	"	"	---	---	---	---	---	---	
Zinc	ND	2.00	4.00	"	"	---	---	---	---	---	---	
Blank (6110749-BLK2)					Prepared: 11/21/16 09:01		Analyzed: 11/22/16 16:25					
EPA 6020A												
Selenium	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	Q-16
LCS (6110749-BS1)					Prepared: 11/21/16 09:01		Analyzed: 11/21/16 17:18					
EPA 6020A												
Arsenic	53.7	0.500	1.00	ug/L	1	55.6	---	97	80-120%	---	---	
Chromium	54.9	0.500	1.00	"	"	"	---	99	"	---	---	
Copper	55.1	0.500	1.00	"	"	"	---	99	"	---	---	
Lead	58.1	0.100	0.200	"	"	"	---	105	"	---	---	
Nickel	55.0	0.500	1.00	"	"	"	---	99	"	---	---	
Selenium	28.1	1.00	2.00	"	"	27.8	---	101	"	---	---	
Zinc	54.6	2.00	4.00	"	"	55.6	---	98	"	---	---	
Duplicate (6110749-DUP1)					Prepared: 11/21/16 09:01		Analyzed: 11/21/16 17:24					
QC Source Sample: LW009D (A6K0316-01)												
EPA 6020A												
Arsenic	**30.4**	0.500	1.00	ug/L	1	---	30.3	---	---	0.5	20%	
Chromium	ND	0.500	1.00	"	"	---	ND	---	---	---	20%	
Copper	ND	0.500	1.00	"	"	---	ND	---	---	---	20%	
Lead	ND	0.100	0.200	"	"	---	ND	---	---	---	20%	
Nickel	**1.54**	0.500	1.00	"	"	---	1.16	---	---	29	20%	Q-05
Selenium	ND	1.00	2.00	"	"	---	ND	---	---	---	20%	
Zinc	ND	2.00	4.00	"	"	---	ND	---	---	---	20%	
Matrix Spike (6110749-MS1)					Prepared: 11/21/16 09:01		Analyzed: 11/21/16 18:04					
QC Source Sample: LW006D (A6K0316-02)												
EPA 6020A												

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Total Metals by EPA 6020 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110749 - EPA 3015A							**Water**					
Matrix Spike (6110749-MS1)					Prepared: 11/21/16 09:01		Analyzed: 11/21/16 18:04					
QC Source Sample: LW006D (A6K0316-02)												
EPA 6020A												
Arsenic	73.6	0.500	1.00	ug/L	1	55.6	16.9	102	75-125%	---	---	
Chromium	56.8	0.500	1.00	"	"	"	ND	102	"	---	---	
Copper	55.8	0.500	1.00	"	"	"	ND	100	"	---	---	
Lead	59.9	0.100	0.200	"	"	"	ND	108	"	---	---	
Nickel	58.9	0.500	1.00	"	"	"	2.80	101	"	---	---	
Selenium	29.0	1.00	2.00	"	"	27.8	ND	104	"	---	---	
Zinc	56.1	2.00	4.00	"	"	55.6	ND	101	"	---	---	

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Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110764 - Matrix Matched Direct Inject									Water			
Blank (6110764-BLK1)					Prepared: 11/21/16 12:03		Analyzed: 11/21/16 15:29					
EPA 200.8 (Diss)												
Arsenic	ND	0.500	1.00	ug/L	1	---	---	---	---	---	---	
Chromium	ND	---	1.00	"	"	---	---	---	---	---	---	
Copper	ND	---	1.00	"	"	---	---	---	---	---	---	
Lead	ND	---	0.200	"	"	---	---	---	---	---	---	
Nickel	ND	---	1.00	"	"	---	---	---	---	---	---	
Selenium	ND	---	2.00	"	"	---	---	---	---	---	---	
Zinc	ND	---	4.00	"	"	---	---	---	---	---	---	
LCS (6110764-BS1)					Prepared: 11/21/16 12:03		Analyzed: 11/21/16 16:30					
EPA 200.8 (Diss)												
Arsenic	50.9	0.500	1.00	ug/L	1	55.6	---	92	85-115%	---	---	
Chromium	53.6	---	1.00	"	"	"	---	96	"	---	---	
Copper	54.1	---	1.00	"	"	"	---	97	"	---	---	
Lead	57.2	---	0.200	"	"	"	---	103	"	---	---	
Nickel	54.4	---	1.00	"	"	"	---	98	"	---	---	
Selenium	28.0	---	2.00	"	"	27.8	---	101	"	---	---	
Zinc	54.3	---	4.00	"	"	55.6	---	98	"	---	---	
Duplicate (6110764-DUP1)					Prepared: 11/21/16 12:03		Analyzed: 11/21/16 16:51					
QC Source Sample: LW038D (A6K0316-05)												
EPA 200.8 (Diss)												
Arsenic	ND	0.500	1.00	ug/L	1	---	ND	---	---	---	20%	
Chromium	ND	---	1.00	"	"	---	ND	---	---	---	20%	
Copper	ND	---	1.00	"	"	---	0.911	---	---	4	20%	
Lead	ND	---	0.200	"	"	---	ND	---	---	---	20%	
Nickel	ND	---	1.00	"	"	---	0.811	---	---	6	20%	
Selenium	ND	---	2.00	"	"	---	ND	---	---	---	20%	
Zinc	ND	---	4.00	"	"	---	ND	---	---	---	20%	
Matrix Spike (6110764-MS1)					Prepared: 11/21/16 12:03		Analyzed: 11/21/16 16:58					
QC Source Sample: LW039D (A6K0316-06)												
EPA 200.8 (Diss)												
Arsenic	60.1	0.500	1.00	ug/L	1	55.6	7.32	95	70-130%	---	---	
Chromium	54.2	---	1.00	"	"	"	ND	98	"	---	---	
Copper	54.2	---	1.00	"	"	"	ND	98	"	---	---	

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Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Dissolved Metals by EPA 200.8 (ICPMS)

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110764 - Matrix Matched Direct Inject									**Water**			
Matrix Spike (6110764-MS1)					Prepared: 11/21/16 12:03 Analyzed: 11/21/16 16:58							
QC Source Sample: LW039D (A6K0316-06)												
EPA 200.8 (Diss)												
Lead	56.6	---	0.200	ug/L	"	"	ND	102	"	---	---	
Nickel	53.5	---	1.00	"	"	"	0.511	95	"	---	---	
Selenium	28.5	---	2.00	"	"	27.8	ND	103	"	---	---	
Zinc	53.2	---	4.00	"	"	55.6	6.53	84	"	---	---	

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19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110443 - Method Prep: Aq									**Water**			
Blank (6110443-BLK1)					Prepared: 11/10/16 11:00		Analyzed: 11/15/16 14:01					
SM 5210 B												
Biochemical Oxygen Demand (5 Day)	ND	---	4.00	mg/L	1	---	---	---	---	---	---	
Duplicate (6110443-DUP1)					Prepared: 11/10/16 11:00		Analyzed: 11/15/16 14:01					
QC Source Sample: LW009D (A6K0316-01)												
SM 5210 B												
Biochemical Oxygen Demand (5 Day)	**20.9**	---	3.14	mg/L	1	---	21.8	---	---	4	20%	
Reference (6110443-SRM1)					Prepared: 11/10/16 11:00		Analyzed: 11/15/16 14:01					
SM 5210 B												
Biochemical Oxygen Demand (5 Day)	210	---		mg/L	1	198		106	84.6-115.4%	---	---	

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19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

QUALITY CONTROL (QC) SAMPLE RESULTS

Conventional Chemistry Parameters

Analyte	Result	MDL	Reporting Limit	Units	Dil.	Spike Amount	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Batch 6110451 - Method Prep: Aq									**Water**			
Blank (6110451-BLK1)					Prepared: 11/10/16 11:24		Analyzed: 11/10/16 23:42					
SM 5310 B												
Total Organic Carbon	ND	---	1.00	mg/L	1	---	---	---	---	---	---	
LCS (6110451-BS1)					Prepared: 11/10/16 11:24		Analyzed: 11/10/16 23:42					
SM 5310 B												
Total Organic Carbon	10.1	---	1.00	mg/L	1	10.0	---	101	85-115%	---	---	
Duplicate (6110451-DUP1)					Prepared: 11/10/16 11:24		Analyzed: 11/10/16 23:42					
QC Source Sample: LW009D (A6K0316-01)												
SM 5310 B												
Total Organic Carbon	**3.11**	---	1.00	mg/L	1	---	2.90	---	---	7	20%	
Matrix Spike (6110451-MS1)					Prepared: 11/10/16 11:24		Analyzed: 11/10/16 23:42					
QC Source Sample: LW009D (A6K0316-01)												
SM 5310 B												
Total Organic Carbon	12.9	---	1.01	mg/L	1	10.0	2.90	100	75-125%	---	---	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

SAMPLE PREPARATION INFORMATION

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Prep: EPA 3510C (Fuels/Acid Ext.)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110513							
A6K0316-01	Water	NWTPH-Dx	11/08/16 13:00	11/11/16 16:19	1050mL/2mL	1000mL/2mL	0.95
A6K0316-02	Water	NWTPH-Dx	11/08/16 14:55	11/11/16 16:19	1040mL/2mL	1000mL/2mL	0.96
A6K0316-03	Water	NWTPH-Dx	11/09/16 09:30	11/11/16 16:19	1050mL/2mL	1000mL/2mL	0.95
A6K0316-04	Water	NWTPH-Dx	11/09/16 09:40	11/11/16 16:19	1050mL/2mL	1000mL/2mL	0.95
A6K0316-05	Water	NWTPH-Dx	11/09/16 10:30	11/11/16 16:19	1060mL/2mL	1000mL/2mL	0.94
A6K0316-06	Water	NWTPH-Dx	11/09/16 11:00	11/11/16 16:19	1060mL/2mL	1000mL/2mL	0.94
A6K0316-07	Water	NWTPH-Dx	11/09/16 11:30	11/11/16 16:19	1060mL/2mL	1000mL/2mL	0.94

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110436							
A6K0316-01	Water	NWTPH-Gx (MS)	11/08/16 13:00	11/10/16 11:39	5mL/5mL	5mL/5mL	1.00
A6K0316-03	Water	NWTPH-Gx (MS)	11/09/16 09:30	11/10/16 11:39	5mL/5mL	5mL/5mL	1.00
A6K0316-04	Water	NWTPH-Gx (MS)	11/09/16 09:40	11/10/16 11:39	5mL/5mL	5mL/5mL	1.00
A6K0316-05	Water	NWTPH-Gx (MS)	11/09/16 10:30	11/10/16 11:39	5mL/5mL	5mL/5mL	1.00
A6K0316-06	Water	NWTPH-Gx (MS)	11/09/16 11:00	11/10/16 11:39	5mL/5mL	5mL/5mL	1.00
A6K0316-08	Water	NWTPH-Gx (MS)	11/09/16 00:00	11/10/16 11:39	5mL/5mL	5mL/5mL	1.00
Batch: 6110479							
A6K0316-02RE1	Water	NWTPH-Gx (MS)	11/08/16 14:55	11/11/16 07:58	5mL/5mL	5mL/5mL	1.00
Batch: 6110522							
A6K0316-07RE2	Water	NWTPH-Gx (MS)	11/09/16 11:30	11/14/16 11:57	5mL/5mL	5mL/5mL	1.00

Volatile Organic Compounds by EPA 8260B

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110436							
A6K0316-01	Water	EPA 8260B	11/08/16 13:00	11/10/16 11:39	5mL/5mL	5mL/5mL	1.00
A6K0316-03	Water	EPA 8260B	11/09/16 09:30	11/10/16 11:39	5mL/5mL	5mL/5mL	1.00
A6K0316-04	Water	EPA 8260B	11/09/16 09:40	11/10/16 11:39	5mL/5mL	5mL/5mL	1.00
A6K0316-05	Water	EPA 8260B	11/09/16 10:30	11/10/16 11:39	5mL/5mL	5mL/5mL	1.00
A6K0316-06	Water	EPA 8260B	11/09/16 11:00	11/10/16 11:39	5mL/5mL	5mL/5mL	1.00

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

SAMPLE PREPARATION INFORMATION

Volatile Organic Compounds by EPA 8260B

Prep: EPA 5030B

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A6K0316-08	Water	EPA 8260B	11/09/16 00:00	11/10/16 11:39	5mL/5mL	5mL/5mL	1.00
Batch: 6110479							
A6K0316-02RE1	Water	EPA 8260B	11/08/16 14:55	11/11/16 07:58	5mL/5mL	5mL/5mL	1.00
Batch: 6110522							
A6K0316-07RE2	Water	EPA 8260B	11/09/16 11:30	11/14/16 11:57	5mL/5mL	5mL/5mL	1.00

Anions by EPA 300.0/9056A (Ion Chromatography)

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110515							
A6K0316-01	Water	EPA 300.0	11/08/16 13:00	11/12/16 07:34	10mL/10mL	10mL/10mL	1.00
A6K0316-02	Water	EPA 300.0	11/08/16 14:55	11/12/16 07:34	10mL/10mL	10mL/10mL	1.00
A6K0316-03	Water	EPA 300.0	11/09/16 09:30	11/12/16 07:34	10mL/10mL	10mL/10mL	1.00
A6K0316-04	Water	EPA 300.0	11/09/16 09:40	11/12/16 07:34	10mL/10mL	10mL/10mL	1.00
A6K0316-05	Water	EPA 300.0	11/09/16 10:30	11/12/16 07:34	10mL/10mL	10mL/10mL	1.00
A6K0316-06	Water	EPA 300.0	11/09/16 11:00	11/12/16 07:34	10mL/10mL	10mL/10mL	1.00
A6K0316-07	Water	EPA 300.0	11/09/16 11:30	11/12/16 07:34	10mL/10mL	10mL/10mL	1.00

Nitrate + Nitrite by EPA 353.2

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110506							
A6K0316-01	Water	EPA 353.2	11/08/16 13:00	11/11/16 14:27	4mL/4mL	4mL/4mL	1.00
A6K0316-02	Water	EPA 353.2	11/08/16 14:55	11/11/16 14:27	4mL/4mL	4mL/4mL	1.00
A6K0316-03	Water	EPA 353.2	11/09/16 09:30	11/11/16 14:27	4mL/4mL	4mL/4mL	1.00
A6K0316-04	Water	EPA 353.2	11/09/16 09:40	11/11/16 14:27	4mL/4mL	4mL/4mL	1.00
A6K0316-05	Water	EPA 353.2	11/09/16 10:30	11/11/16 14:27	4mL/4mL	4mL/4mL	1.00
A6K0316-06	Water	EPA 353.2	11/09/16 11:00	11/11/16 14:27	4mL/4mL	4mL/4mL	1.00
A6K0316-07	Water	EPA 353.2	11/09/16 11:30	11/11/16 14:27	4mL/4mL	4mL/4mL	1.00
Batch: 6110568							
A6K0316-01	Water	EPA 353.2	11/08/16 13:00	11/15/16 09:03	4mL/4mL	4mL/4mL	1.00
A6K0316-02	Water	EPA 353.2	11/08/16 14:55	11/15/16 09:03	4mL/4mL	4mL/4mL	1.00
A6K0316-03	Water	EPA 353.2	11/09/16 09:30	11/15/16 09:03	4mL/4mL	4mL/4mL	1.00

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503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

SAMPLE PREPARATION INFORMATION

Nitrate + Nitrite by EPA 353.2

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A6K0316-04	Water	EPA 353.2	11/09/16 09:40	11/15/16 09:03	4mL/4mL	4mL/4mL	1.00
A6K0316-05	Water	EPA 353.2	11/09/16 10:30	11/15/16 09:03	4mL/4mL	4mL/4mL	1.00
A6K0316-06	Water	EPA 353.2	11/09/16 11:00	11/15/16 09:03	4mL/4mL	4mL/4mL	1.00
A6K0316-07	Water	EPA 353.2	11/09/16 11:30	11/15/16 09:03	4mL/4mL	4mL/4mL	1.00

Semivolatile Organic Compounds by EPA 8270D

Prep: EPA 3510C (Acid/Base Neutral)

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110545							
A6K0316-01	Water	EPA 8270D	11/08/16 13:00	11/14/16 14:30	1040mL/1mL	1000mL/1mL	0.96
A6K0316-02	Water	EPA 8270D	11/08/16 14:55	11/14/16 14:30	1030mL/1mL	1000mL/1mL	0.97
A6K0316-03RE1	Water	EPA 8270D	11/09/16 09:30	11/14/16 14:30	1050mL/1mL	1000mL/1mL	0.95
A6K0316-04RE1	Water	EPA 8270D	11/09/16 09:40	11/14/16 14:30	1050mL/1mL	1000mL/1mL	0.95
A6K0316-05RE1	Water	EPA 8270D	11/09/16 10:30	11/14/16 14:30	1050mL/1mL	1000mL/1mL	0.95
A6K0316-06RE1	Water	EPA 8270D	11/09/16 11:00	11/14/16 14:30	1050mL/1mL	1000mL/1mL	0.95
A6K0316-07RE1	Water	EPA 8270D	11/09/16 11:30	11/14/16 14:30	1030mL/1mL	1000mL/1mL	0.97

Total Metals by EPA 6020 (ICPMS)

Prep: EPA 3015A

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110749							
A6K0316-01	Water	EPA 6020A	11/08/16 13:00	11/21/16 09:01	45mL/50mL	45mL/50mL	1.00
A6K0316-02	Water	EPA 6020A	11/08/16 14:55	11/21/16 09:01	45mL/50mL	45mL/50mL	1.00
A6K0316-03	Water	EPA 6020A	11/09/16 09:30	11/21/16 09:01	45mL/50mL	45mL/50mL	1.00
A6K0316-03RE1	Water	EPA 6020A	11/09/16 09:30	11/21/16 09:01	45mL/50mL	45mL/50mL	1.00
A6K0316-04	Water	EPA 6020A	11/09/16 09:40	11/21/16 09:01	45mL/50mL	45mL/50mL	1.00
A6K0316-05	Water	EPA 6020A	11/09/16 10:30	11/21/16 09:01	45mL/50mL	45mL/50mL	1.00
A6K0316-06	Water	EPA 6020A	11/09/16 11:00	11/21/16 09:01	45mL/50mL	45mL/50mL	1.00
A6K0316-07	Water	EPA 6020A	11/09/16 11:30	11/21/16 09:01	45mL/50mL	45mL/50mL	1.00

Dissolved Metals by EPA 200.8 (ICPMS)

Prep: Matrix Matched Direct Inject

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110764							

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503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

SAMPLE PREPARATION INFORMATION

Dissolved Metals by EPA 200.8 (ICPMS)

Prep: Matrix Matched Direct Inject

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
A6K0316-03	Water	EPA 200.8 (Diss)	11/09/16 09:30	11/21/16 12:03	45mL/50mL	45mL/50mL	1.00
A6K0316-04	Water	EPA 200.8 (Diss)	11/09/16 09:40	11/21/16 12:03	45mL/50mL	45mL/50mL	1.00
A6K0316-05	Water	EPA 200.8 (Diss)	11/09/16 10:30	11/21/16 12:03	45mL/50mL	45mL/50mL	1.00
A6K0316-06	Water	EPA 200.8 (Diss)	11/09/16 11:00	11/21/16 12:03	45mL/50mL	45mL/50mL	1.00
A6K0316-07	Water	EPA 200.8 (Diss)	11/09/16 11:30	11/21/16 12:03	45mL/50mL	45mL/50mL	1.00

Conventional Chemistry Parameters

Prep: Method Prep: Aq

Lab Number	Matrix	Method	Sampled	Prepared	Sample Initial/Final	Default Initial/Final	RL Prep Factor
Batch: 6110443							
A6K0316-01	Water	SM 5210 B	11/08/16 13:00	11/10/16 11:00	150mL/300mL	150mL/300mL	NA
A6K0316-02	Water	SM 5210 B	11/08/16 14:55	11/10/16 11:00	150mL/300mL	150mL/300mL	NA
A6K0316-03	Water	SM 5210 B	11/09/16 09:30	11/10/16 11:00	150mL/300mL	150mL/300mL	NA
A6K0316-04	Water	SM 5210 B	11/09/16 09:40	11/10/16 11:00	150mL/300mL	150mL/300mL	NA
A6K0316-05	Water	SM 5210 B	11/09/16 10:30	11/10/16 11:00	150mL/300mL	150mL/300mL	NA
A6K0316-06	Water	SM 5210 B	11/09/16 11:00	11/10/16 11:00	150mL/300mL	150mL/300mL	NA
A6K0316-07	Water	SM 5210 B	11/09/16 11:30	11/10/16 11:00	150mL/300mL	150mL/300mL	NA
Batch: 6110451							
A6K0316-01	Water	SM 5310 B	11/08/16 13:00	11/10/16 11:24	40mL/40mL	40mL/40mL	1.00
A6K0316-02	Water	SM 5310 B	11/08/16 14:55	11/10/16 11:24	40mL/40mL	40mL/40mL	1.00
A6K0316-03	Water	SM 5310 B	11/09/16 09:30	11/10/16 11:24	40mL/40mL	40mL/40mL	1.00
A6K0316-04	Water	SM 5310 B	11/09/16 09:40	11/10/16 11:24	40mL/40mL	40mL/40mL	1.00
A6K0316-05	Water	SM 5310 B	11/09/16 10:30	11/10/16 11:24	40mL/40mL	40mL/40mL	1.00
A6K0316-06	Water	SM 5310 B	11/09/16 11:00	11/10/16 11:24	40mL/40mL	40mL/40mL	1.00
A6K0316-07	Water	SM 5310 B	11/09/16 11:30	11/10/16 11:24	40mL/40mL	40mL/40mL	1.00

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19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

Notes and Definitions

Qualifiers:

F-11	The hydrocarbon pattern indicates possible weathered diesel, or a contribution from a related component.
F-13	The chromatographic pattern does not resemble the fuel standard used for quantitation
H-06	This sample was received, or the analysis requested, outside the recommended holding time.
J	Estimated Result. Result detected below the lowest point of the calibration curve, but above the specified MDL.
Q-05	Analyses are not controlled on RPD values from sample and duplicate concentrations that are below 5 times the reporting level.
Q-16	Reanalysis of an original Batch QC sample.
Q-19	Blank Spike Duplicate (BSD) sample analyzed in place of Matrix Spike/Duplicate samples due to limited sample amount available for analysis.
Q-24	RPD for spike and spike duplicate is above established control limit. Recoveries for both spike and spike duplicate are within control limits.
Q-29	Recovery for Lab Control Spike (LCS) is above the upper control limit. Data may be biased high.
Q-30	Recovery for Lab Control Spike (LCS) is below the lower control limit. Data may be biased low.
Q-31	Estimated Results. Recovery of Continuing Calibration Verification sample below lower control limit for this analyte. Results are likely biased low.
Q-41	Estimated Results. Recovery of Continuing Calibration Verification sample above upper control limit for this analyte. Results are likely biased high.
Q-42	Matrix Spike and/or Duplicate analysis was performed on this sample. % Recovery or RPD for this analyte is outside laboratory control limits. (Refer to the QC Section of Analytical Report.)
R-01	The Reporting Limit for this analyte has been raised to account for matrix interference.
R-02	The Reporting Limit for this analyte has been raised to account for interference from coeluting organic compounds present in the sample.
S-06	Surrogate recovery is outside of established control limits.

Notes and Conventions:

DET	Analyte DETECTED
ND	Analyte NOT DETECTED at or above the reporting limit

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Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

NR	Not Reported
dry	Sample results reported on a dry weight basis. Results listed as 'wet' or without 'dry'designation are not dry weight corrected.
RPD	Relative Percent Difference
MDL	If MDL is not listed, data has been evaluated to the Method Reporting Limit only.
WMSC	Water Miscible Solvent Correction has been applied to Results and MRLs for volatiles soil samples per EPA 8000C.
Batch QC	Unless specifically requested, this report contains only results for Batch QC derived from client samples included in this report. All analyses were performed with the appropriate Batch QC (including Sample Duplicates, Matrix Spikes and/or Matrix Spike Duplicates) in order to meet or exceed method and regulatory requirements. Any exceptions to this will be qualified in this report. Complete Batch QC results are available upon request. In cases where there is insufficient sample provided for Sample Duplicates and/or Matrix Spikes, a Lab Control Sample Duplicate (LCS Dup) is analyzed to demonstrate accuracy and precision of the extraction and analysis.
Blank Policy	Apex assesses blank data for potential high bias down to a level equal to ½ the method reporting limit (MRL), except for conventional chemistry and HCID analyses which are assessed only to the MRL. Sample results flagged with a B or B-02 qualifier are potentially biased high if they are less than ten times the level found in the blank for inorganic analyses or less than five times the level found in the blank for organic analyses. For accurate comparison of volatile results to the level found in the blank; water sample results should be divided by the dilution factor, and soil sample results should be divided by 1/50 of the sample dilution to account for the sample prep factor. Results qualified as reported below the MRL may include a potential high bias if associated with a B or B-02 qualified blank. B and B-02 qualifications are not applied to J qualified results reported below the MRL.
---	QC results are not applicable. For example, % Recoveries for Blanks and Duplicates, % RPD for Blanks, Blank Spikes and Matrix Spikes, etc.
***	Used to indicate a possible discrepancy with the Sample and Sample Duplicate results when the %RPD is not available. In this case, either the Sample or the Sample Duplicate has a reportable result for this analyte, while the other is Non Detect (ND).

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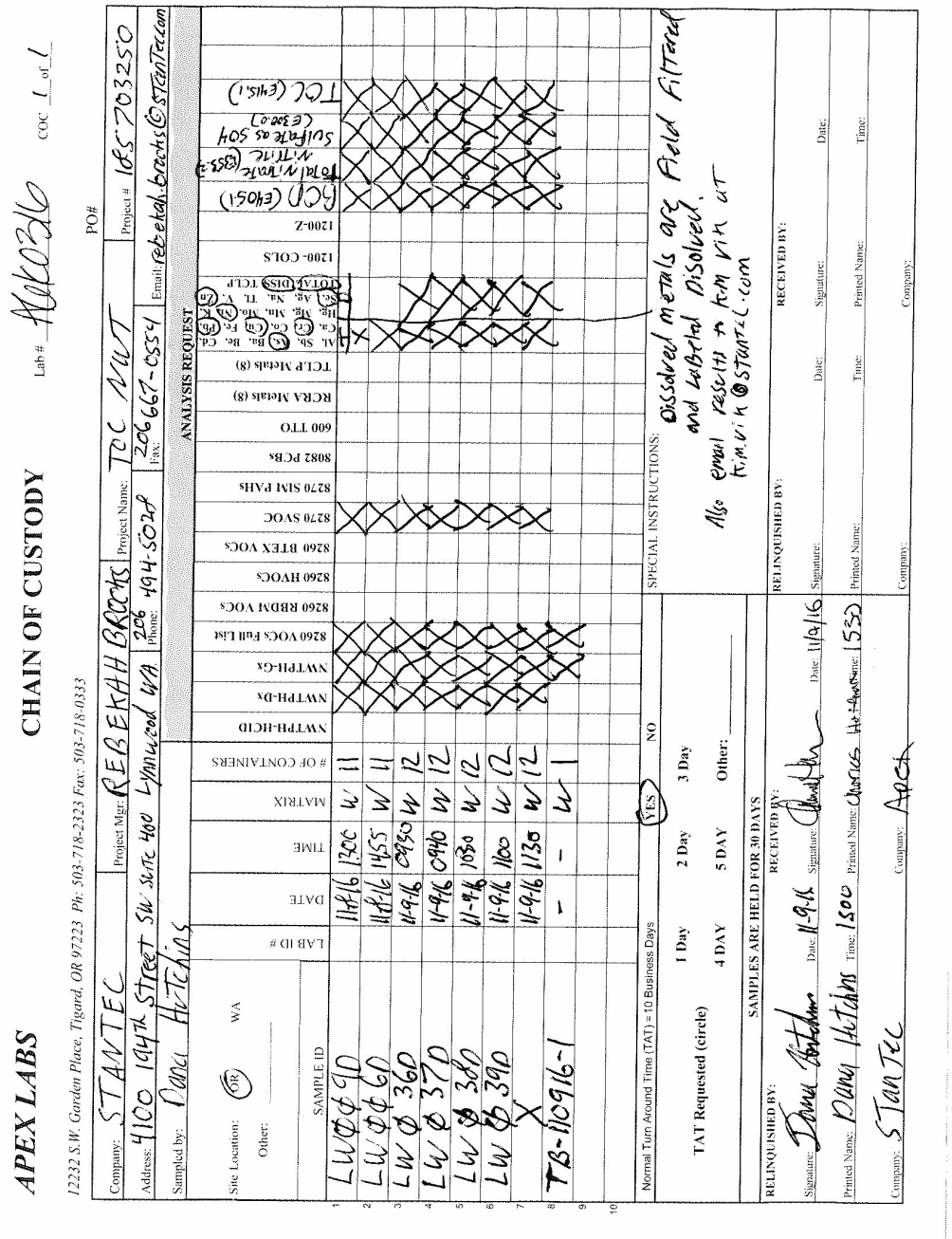

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Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:34

APEX LABS COOLER RECEIPT FORM

Client: Stantec Element WO#: A6 K0316

Project/Project #: TOC NWT / 185703250

Delivery info:

Date/Time Received: 11/9/16 @ 1530 By: CFH

Delivered by: Apex X Client ___ ESS ___ FedEx ___ UPS ___ Swift ___ Senvoy ___ SDS ___ Other ___

Cooler Inspection Inspected by: KAR : 11/9/16 @ 1715

Chain of Custody Included? Yes X No ___ Custody Seals? Yes ___ No X

Signed/Dated by Client? Yes X No ___

Signed/Dated by Apex? Yes X No ___

	Cooler #1	Cooler #2	Cooler #3	Cooler #4	Cooler #5	Cooler #6	Cooler #7
Temperature (deg. C)	2.5	2.8	2.6	3.7	3.2		
Received on Ice? (Y/N)							
Temp. Blanks? (Y/N)							
Ice Type: (Gel/Real/Other)							
Condition:	good →						

Cooler out of temp? (Y/N) Possible reason why:

If some coolers are in temp and some out, were green dot applied to out of temperature samples? Yes/No/NA

Samples Inspection: Inspected by: KAR : 11/9/16 @ 1825

All Samples Intact? Yes X No ___ Comments:

Bottle Labels/COCs agree? Yes X No ___ Comments:

Containers/Volumes Received Appropriate for Analysis? Yes X No ___ Comments:

Do VOA Vials have Visible Headspace? Yes ___ No X NA ___

Comments

Water Samples: pH Checked and Appropriate (except VOAs): Yes X No ___ NA ___

Comments:

Additional Information: TB # 13357

Labeled by: KR Witness: AM Cooler Inspected by: KAR See Project Contact Form: Y

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503-718-0333 Fax

Monday, January 2, 2017

Rebekah Brooks
Stantec Lynnwood
19101 36th Avenue West Suite 203
Lynwood, WA 98036-5759

RE: TOC Groundwater Quarterly / 185703250

Enclosed are the results of analyses for work order A6K0418, which was received by the laboratory on 11/14/2016 at 7:30:00AM.

Thank you for using Apex Labs. We appreciate your business and strive to provide the highest quality services to the environmental industry.

If you have any questions concerning this report or the services we offer, please feel free to contact me by email at: dthomas@apex-labs.com, or by phone at 503-718-2323.

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Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL REPORT FOR SAMPLES

SAMPLE INFORMATION

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
LW020S	A6K0418-01	Water	11/09/16 14:45	11/14/16 07:30
LW020D	A6K0418-02	Water	11/09/16 15:10	11/14/16 07:30
LW025D	A6K0418-03	Water	11/10/16 14:25	11/14/16 07:30
LW024D	A6K0418-04	Water	11/10/16 15:15	11/14/16 07:30
LW013S	A6K0418-05	Water	11/11/16 09:30	11/14/16 07:30
LW011S	A6K0418-06	Water	11/11/16 10:25	11/14/16 07:30
OX002S	A6K0418-07	Water	11/11/16 11:15	11/14/16 07:30
LW045D	A6K0418-08	Water	11/11/16 13:30	11/14/16 07:30
LW035D	A6K0418-09	Water	11/11/16 14:30	11/14/16 07:30
LW022D	A6K0418-10	Water	11/11/16 15:45	11/14/16 07:30
LW010D	A6K0418-11	Water	11/12/16 09:30	11/14/16 07:30
RW2	A6K0418-12	Water	11/12/16 10:30	11/14/16 07:30
W	A6K0418-13	Water	11/12/16 11:00	11/14/16 07:30
OX008S	A6K0418-14	Water	11/12/16 11:40	11/14/16 07:30
LW004S	A6K0418-15	Water	11/12/16 13:30	11/14/16 07:30
LW018D	A6K0418-16	Water	11/12/16 14:15	11/14/16 07:30
LW017D	A6K0418-17	Water	11/12/16 15:15	11/14/16 07:30
LW023D	A6K0418-18	Water	11/13/16 09:45	11/14/16 07:30
Q	A6K0418-19	Water	11/13/16 10:45	11/14/16 07:30
TB-111316-1	A6K0418-20	Water	11/13/16 00:00	11/14/16 07:30
TB-111316-2	A6K0418-21	Water	11/13/16 00:00	11/14/16 07:30

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW020S (A6K0418-01)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**4250**	38.1	76.2	ug/L	1	11/15/16 19:10	NWTPH-Dx	F-11
Oil	ND	76.2	152	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 76 %*	*Limits: 50-150 %*	"	"	"	
LW020D (A6K0418-02)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**416**	38.1	76.2	ug/L	1	11/15/16 19:32	NWTPH-Dx	F-11
Oil	ND	76.2	152	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 86 %*	*Limits: 50-150 %*	"	"	"	
LW025D (A6K0418-03)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**1370**	190	381	ug/L	5	11/15/16 19:54	NWTPH-Dx	F-11
Oil	ND	381	762	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 80 %*	*Limits: 50-150 %*	"	"	"	*S-05*
LW024D (A6K0418-04)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**5050**	38.1	76.2	ug/L	1	11/15/16 20:38	NWTPH-Dx	F-13
Oil	ND	76.2	152	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 77 %*	*Limits: 50-150 %*	"	"	"	
LW013S (A6K0418-05)			**Matrix: Water**		**Batch: 6110558**			
Diesel	ND	38.1	76.2	ug/L	1	11/15/16 21:00	NWTPH-Dx	
Oil	**115**	76.2	152	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 85 %*	*Limits: 50-150 %*	"	"	"	
LW011S (A6K0418-06)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**515**	37.7	75.5	ug/L	1	11/15/16 21:22	NWTPH-Dx	F-13, F-20
Oil	**134**	75.5	151	"	"	"	"	F-12
Surrogate: o-Terphenyl (Surr)			*Recovery: 79 %*	*Limits: 50-150 %*	"	"	"	
OX002S (A6K0418-07)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**1090**	38.1	76.2	ug/L	1	11/15/16 21:44	NWTPH-Dx	F-13, F-20
Oil	**480**	76.2	152	"	"	"	"	F-12
Surrogate: o-Terphenyl (Surr)			*Recovery: 68 %*	*Limits: 50-150 %*	"	"	"	
LW045D (A6K0418-08)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**2070**	189	377	ug/L	5	11/15/16 22:06	NWTPH-Dx	F-11
Oil	ND	377	755	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 84 %*	*Limits: 50-150 %*	"	"	"	*S-05*

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503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW035D (A6K0418-09)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**2560**	39.6	79.2	ug/L	1	11/15/16 22:50	NWTPH-Dx	F-11
Oil	ND	79.2	158	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 118 %*	*Limits: 50-150 %*	"	"	"	
LW022D (A6K0418-10)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**537**	215	430	ug/L	5	11/15/16 23:12	NWTPH-Dx	F-11
Oil	ND	430	860	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 86 %*	*Limits: 50-150 %*	"	"	"	*S-05*
LW010D (A6K0418-11)			**Matrix: Water**		**Batch: 6110586**			
Diesel	**55.9**	38.1	76.2	ug/L	1	11/15/16 18:37	NWTPH-Dx	F-11
Oil	ND	76.2	152	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 73 %*	*Limits: 50-150 %*	"	"	"	
RW2 (A6K0418-12)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**1690**	38.5	76.9	ug/L	1	11/15/16 23:34	NWTPH-Dx	F-13, F-20
Oil	ND	76.9	154	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 95 %*	*Limits: 50-150 %*	"	"	"	
W (A6K0418-13)			**Matrix: Water**		**Batch: 6110586**			
Diesel	**2060**	38.1	76.2	ug/L	1	11/15/16 19:39	NWTPH-Dx	F-13, F-20
Oil	ND	76.2	152	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 82 %*	*Limits: 50-150 %*	"	"	"	
OX008S (A6K0418-14)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**867**	38.5	76.9	ug/L	1	11/15/16 19:59	NWTPH-Dx	F-13, F-20
Oil	ND	76.9	154	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 70 %*	*Limits: 50-150 %*	"	"	"	
LW004S (A6K0418-15)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**111**	39.2	78.4	ug/L	1	11/15/16 20:19	NWTPH-Dx	F-11
Oil	ND	78.4	157	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 73 %*	*Limits: 50-150 %*	"	"	"	
LW018D (A6K0418-16)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**1230**	37.7	75.5	ug/L	1	11/15/16 20:40	NWTPH-Dx	F-13
Oil	ND	75.5	151	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 79 %*	*Limits: 50-150 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Diesel and/or Oil Hydrocarbons by NWTPH-Dx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW017D (A6K0418-17)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**1460**	40.0	80.0	ug/L	1	11/15/16 21:01	NWTPH-Dx	F-13
Oil	ND	80.0	160	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 79 %*	*Limits: 50-150 %*	"	"	"	
LW023D (A6K0418-18)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**6970**	38.5	76.9	ug/L	1	11/15/16 21:22	NWTPH-Dx	F-13
Oil	ND	76.9	154	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 51 %*	*Limits: 50-150 %*	"	"	"	
Q (A6K0418-19RE3)			**Matrix: Water**		**Batch: 6110558**			
Diesel	**7730**	38.5	76.9	ug/L	1	11/16/16 12:31	NWTPH-Dx	F-20, F-13
Oil	ND	76.9	154	"	"	"	"	
Surrogate: o-Terphenyl (Surr)			*Recovery: 54 %*	*Limits: 50-150 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW020S (A6K0418-01)			**Matrix: Water**		**Batch: 6110522**			
Gasoline Range Organics	**608**	50.0	100	ug/L	1	11/14/16 20:17	NWTPH-Gx (MS)	F-13
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 98 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*93 %*	*Limits: 50-150 %*	"	"	"	
LW020D (A6K0418-02)			**Matrix: Water**		**Batch: 6110522**			
Gasoline Range Organics	**117**	50.0	100	ug/L	1	11/14/16 19:49	NWTPH-Gx (MS)	F-13
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 96 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*95 %*	*Limits: 50-150 %*	"	"	"	
LW025D (A6K0418-03)			**Matrix: Water**		**Batch: 6110526**			
Gasoline Range Organics	**179**	50.0	100	ug/L	1	11/14/16 20:55	NWTPH-Gx (MS)	F-13
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 100 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*110 %*	*Limits: 50-150 %*	"	"	"	
LW024D (A6K0418-04)			**Matrix: Water**		**Batch: 6110522**			
Gasoline Range Organics	**1740**	50.0	100	ug/L	1	11/14/16 21:12	NWTPH-Gx (MS)	F-13
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 101 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*89 %*	*Limits: 50-150 %*	"	"	"	
LW013S (A6K0418-05)			**Matrix: Water**		**Batch: 6110526**			
Gasoline Range Organics	ND	50.0	100	ug/L	1	11/14/16 17:56	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 98 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*112 %*	*Limits: 50-150 %*	"	"	"	
LW011S (A6K0418-06)			**Matrix: Water**		**Batch: 6110567**			
Gasoline Range Organics	**2550**	50.0	100	ug/L	1	11/15/16 12:15	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 102 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*104 %*	*Limits: 50-150 %*	"	"	"	
OX002S (A6K0418-07)			**Matrix: Water**		**Batch: 6110526**			
Gasoline Range Organics	**4180**	100	200	ug/L	2	11/14/16 22:12	NWTPH-Gx (MS)	F-13
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 101 %*	*Limits: 50-150 %*	1	"	"	
1,4-Difluorobenzene (Sur)			*104 %*	*Limits: 50-150 %*	"	"	"	
LW045D (A6K0418-08)			**Matrix: Water**		**Batch: 6110526**			
Gasoline Range Organics	ND	50.0	100	ug/L	1	11/14/16 18:22	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 101 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*112 %*	*Limits: 50-150 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

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19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW035D (A6K0418-09)			**Matrix: Water**		**Batch: 6110526**			
Gasoline Range Organics	ND	50.0	100	ug/L	1	11/14/16 17:31	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 100 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*109 %*	*Limits: 50-150 %*	"	"	"	
LW022D (A6K0418-10)			**Matrix: Water**		**Batch: 6110526**			
Gasoline Range Organics	ND	50.0	100	ug/L	1	11/14/16 17:05	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 99 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*112 %*	*Limits: 50-150 %*	"	"	"	
LW010D (A6K0418-11)			**Matrix: Water**		**Batch: 6110526**			
Gasoline Range Organics	ND	50.0	100	ug/L	1	11/14/16 18:48	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 99 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*111 %*	*Limits: 50-150 %*	"	"	"	
RW2 (A6K0418-12)			**Matrix: Water**		**Batch: 6110522**			
Gasoline Range Organics	**2100**	50.0	100	ug/L	1	11/14/16 21:40	NWTPH-Gx (MS)	F-13
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 110 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*141 %*	*Limits: 50-150 %*	"	"	"	
W (A6K0418-13)			**Matrix: Water**		**Batch: 6110526**			
Gasoline Range Organics	**2060**	50.0	100	ug/L	1	11/14/16 21:46	NWTPH-Gx (MS)	F-13
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 106 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*109 %*	*Limits: 50-150 %*	"	"	"	
OX008S (A6K0418-14)			**Matrix: Water**		**Batch: 6110522**			
Gasoline Range Organics	**1890**	50.0	100	ug/L	1	11/14/16 20:44	NWTPH-Gx (MS)	F-13
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 119 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*90 %*	*Limits: 50-150 %*	"	"	"	
LW004S (A6K0418-15)			**Matrix: Water**		**Batch: 6110522**			
Gasoline Range Organics	ND	50.0	100	ug/L	1	11/14/16 18:54	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 101 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*93 %*	*Limits: 50-150 %*	"	"	"	
LW018D (A6K0418-16)			**Matrix: Water**		**Batch: 6110567**			
Gasoline Range Organics	**2050**	50.0	100	ug/L	1	11/15/16 12:40	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 107 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*113 %*	*Limits: 50-150 %*	"	"	"	

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19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Gasoline Range Hydrocarbons (Benzene through Naphthalene) by NWTPH-Gx

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW017D (A6K0418-17)			**Matrix: Water**		**Batch: 6110567**			
Gasoline Range Organics	**2200**	50.0	100	ug/L	1	11/15/16 13:58	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 110 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*112 %*	*Limits: 50-150 %*	"	"	"	
LW023D (A6K0418-18)			**Matrix: Water**		**Batch: 6110526**			
Gasoline Range Organics	**845**	50.0	100	ug/L	1	11/14/16 20:30	NWTPH-Gx (MS)	F-13
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 100 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*107 %*	*Limits: 50-150 %*	"	"	"	
Q (A6K0418-19)			**Matrix: Water**		**Batch: 6110567**			
Gasoline Range Organics	**3600**	50.0	100	ug/L	1	11/15/16 14:24	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 102 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*103 %*	*Limits: 50-150 %*	"	"	"	
TB-111316-1 (A6K0418-20)			**Matrix: Water**		**Batch: 6110526**			
Gasoline Range Organics	ND	50.0	100	ug/L	1	11/14/16 16:14	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 101 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*113 %*	*Limits: 50-150 %*	"	"	"	
TB-111316-2 (A6K0418-21)			**Matrix: Water**		**Batch: 6110526**			
Gasoline Range Organics	ND	50.0	100	ug/L	1	11/14/16 16:40	NWTPH-Gx (MS)	
Surrogate: 4-Bromofluorobenzene (Sur)			*Recovery: 97 %*	*Limits: 50-150 %*	"	"	"	
1,4-Difluorobenzene (Sur)			*112 %*	*Limits: 50-150 %*	"	"	"	

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19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW013S (A6K0418-05)			**Matrix: Water**		**Batch: 6110526**			
Acetone	ND	10.0	20.0	ug/L	1	11/14/16 17:56	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Darwin Thomas, Business Development Director

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW013S (A6K0418-05)			**Matrix: Water**		**Batch: 6110526**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 113 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*104 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*99 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW011S (A6K0418-06)			**Matrix: Water**		**Batch: 6110567**			
Acetone	ND	10.0	20.0	ug/L	1	11/15/16 12:15	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	**3.27**	0.500	1.00	"	"	"	"	
sec-Butylbenzene	**4.68**	0.500	1.00	"	"	"	"	
tert-Butylbenzene	**0.574**	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW011S (A6K0418-06)			**Matrix: Water**		**Batch: 6110567**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	**13.1**	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	**6.45**	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	**3.39**	0.500	1.00	"	"	"	"	M-02
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	**4.37**	1.00	2.00	"	"	"	"	
n-Propylbenzene	**12.7**	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.500	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	**79.4**	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	**22.4**	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	**12.1**	0.500	1.00	"	"	"	"	
o-Xylene	**22.5**	0.250	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 104 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*100 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*97 %*	*Limits: 80-120 %*	"	"	"	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
OX002S (A6K0418-07)			**Matrix: Water**		**Batch: 6110526**			
Acetone	ND	20.0	40.0	ug/L	2	11/14/16 22:12	EPA 8260B	
Benzene	ND	0.200	0.400	"	"	"	"	
Bromobenzene	ND	0.500	1.00	"	"	"	"	
Bromochloromethane	ND	1.00	2.00	"	"	"	"	
Bromodichloromethane	ND	1.00	2.00	"	"	"	"	
Bromoform	ND	1.00	2.00	"	"	"	"	
Bromomethane	ND	10.0	10.0	"	"	"	"	
2-Butanone (MEK)	ND	10.0	20.0	"	"	"	"	
n-Butylbenzene	**6.23**	1.00	2.00	"	"	"	"	
sec-Butylbenzene	**9.92**	1.00	2.00	"	"	"	"	
tert-Butylbenzene	**1.10**	1.00	2.00	"	"	"	"	
Carbon tetrachloride	ND	1.00	2.00	"	"	"	"	
Chlorobenzene	ND	0.500	1.00	"	"	"	"	
Chloroethane	ND	10.0	10.0	"	"	"	"	
Chloroform	ND	1.00	2.00	"	"	"	"	
Chloromethane	ND	5.00	10.0	"	"	"	"	
2-Chlorotoluene	ND	1.00	2.00	"	"	"	"	
4-Chlorotoluene	ND	1.00	2.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	5.00	10.0	"	"	"	"	
Dibromochloromethane	ND	1.00	2.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.500	1.00	"	"	"	"	
Dibromomethane	ND	1.00	2.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.500	1.00	"	"	"	"	
1,3-Dichlorobenzene	ND	0.500	1.00	"	"	"	"	
1,4-Dichlorobenzene	ND	0.500	1.00	"	"	"	"	
Dichlorodifluoromethane	ND	1.00	2.00	"	"	"	"	
1,1-Dichloroethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethene	ND	0.500	1.00	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.500	1.00	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.500	1.00	"	"	"	"	
1,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,3-Dichloropropane	ND	1.00	2.00	"	"	"	"	
2,2-Dichloropropane	ND	1.00	2.00	"	"	"	"	
1,1-Dichloropropene	ND	1.00	2.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
OX002S (A6K0418-07)			**Matrix: Water**		**Batch: 6110526**			
cis-1,3-Dichloropropene	ND	1.00	2.00	ug/L	2	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	1.00	2.00	"	"	"	"	
Ethylbenzene	**16.6**	0.500	1.00	"	"	"	"	
Hexachlorobutadiene	ND	5.00	10.0	"	"	"	"	
2-Hexanone	ND	10.0	20.0	"	"	"	"	
Isopropylbenzene	**14.9**	1.00	2.00	"	"	"	"	
4-Isopropyltoluene	**4.39**	1.00	2.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	10.0	20.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	1.00	2.00	"	"	"	"	
Methylene chloride	ND	3.00	6.00	"	"	"	"	
Naphthalene	**12.7**	2.00	4.00	"	"	"	"	
n-Propylbenzene	**27.8**	0.500	1.00	"	"	"	"	
Styrene	ND	1.00	2.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.500	1.00	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	1.00	1.00	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.500	1.00	"	"	"	"	
Toluene	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	2.00	4.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	2.00	4.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.500	1.00	"	"	"	"	
1,1,2-Trichloroethane	ND	0.500	1.00	"	"	"	"	
Trichloroethene (TCE)	ND	0.500	1.00	"	"	"	"	
Trichlorofluoromethane	ND	2.00	4.00	"	"	"	"	
1,2,3-Trichloropropane	ND	1.00	2.00	"	"	"	"	
1,2,4-Trimethylbenzene	**225**	1.00	2.00	"	"	"	"	
1,3,5-Trimethylbenzene	**54.1**	1.00	2.00	"	"	"	"	
Vinyl chloride	ND	0.500	1.00	"	"	"	"	
m,p-Xylene	**16.4**	1.00	2.00	"	"	"	"	
o-Xylene	**29.3**	0.500	1.00	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 104 %*	*Limits: 80-120 %*	1	"	"	
Toluene-d8 (Surr)			*101 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*98 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW010D (A6K0418-11)			**Matrix: Water**		**Batch: 6110526**			
Acetone	ND	10.0	20.0	ug/L	1	11/14/16 18:48	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW010D (A6K0418-11)			**Matrix: Water**		**Batch: 6110526**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 112 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*104 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*104 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
RW2 (A6K0418-12)			**Matrix: Water**		**Batch: 6110522**			
Acetone	ND	10.0	20.0	ug/L	1	11/14/16 21:40	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	**9.27**	0.500	1.00	"	"	"	"	
sec-Butylbenzene	**20.6**	0.500	1.00	"	"	"	"	
tert-Butylbenzene	**3.77**	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
RW2 (A6K0418-12)			**Matrix: Water**		**Batch: 6110522**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	**13.5**	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	**8.16**	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.500	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 98 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*104 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*112 %*	*Limits: 80-120 %*	"	"	"	

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503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
W (A6K0418-13)			**Matrix: Water**		**Batch: 6110526**			
Acetone	ND	10.0	20.0	ug/L	1	11/14/16 21:46	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	**7.93**	0.500	1.00	"	"	"	"	
sec-Butylbenzene	**19.7**	0.500	1.00	"	"	"	"	
tert-Butylbenzene	**2.88**	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
W (A6K0418-13)			**Matrix: Water**		**Batch: 6110526**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	**11.2**	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	**7.45**	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 109 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*98 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*102 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
OX008S (A6K0418-14)			**Matrix: Water**		**Batch: 6110522**			
Acetone	ND	10.0	20.0	ug/L	1	11/14/16 20:44	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	**3.57**	0.500	1.00	"	"	"	"	M-02
sec-Butylbenzene	**6.00**	0.500	1.00	"	"	"	"	
tert-Butylbenzene	**1.16**	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
OX008S (A6K0418-14)			**Matrix: Water**		**Batch: 6110522**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	**1.28**	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	**5.71**	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	**1.05**	0.500	1.00	"	"	"	"	M-02
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	**4.31**	1.00	2.00	"	"	"	"	
n-Propylbenzene	**11.3**	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	1.00	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	**102**	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	**32.0**	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	**0.830**	0.500	1.00	"	"	"	"	
o-Xylene	**6.84**	0.500	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 94 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*102 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*110 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW004S (A6K0418-15)			**Matrix: Water**		**Batch: 6110522**			
Acetone	ND	10.0	20.0	ug/L	1	11/14/16 18:54	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW004S (A6K0418-15)			**Matrix: Water**		**Batch: 6110522**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.500	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 99 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*105 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*109 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW018D (A6K0418-16)			**Matrix: Water**		**Batch: 6110567**			
Acetone	ND	10.0	20.0	ug/L	1	11/15/16 12:40	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	**1.56**	0.500	1.00	"	"	"	"	
sec-Butylbenzene	**10.1**	0.500	1.00	"	"	"	"	
tert-Butylbenzene	**3.64**	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW018D (A6K0418-16)			**Matrix: Water**		**Batch: 6110567**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	**8.92**	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	**0.706**	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 113 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*98 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*102 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW017D (A6K0418-17)			**Matrix: Water**		**Batch: 6110567**			
Acetone	ND	10.0	20.0	ug/L	1	11/15/16 13:58	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	**8.85**	0.500	1.00	"	"	"	"	
tert-Butylbenzene	**3.05**	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW017D (A6K0418-17)			**Matrix: Water**		**Batch: 6110567**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	**5.04**	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	**1.92**	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 112 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*98 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*104 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
TB-111316-1 (A6K0418-20)			**Matrix: Water**		**Batch: 6110526**			
Acetone	ND	10.0	20.0	ug/L	1	11/14/16 16:14	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
TB-111316-1 (A6K0418-20)			**Matrix: Water**		**Batch: 6110526**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 113 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*103 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*101 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
TB-111316-2 (A6K0418-21)			**Matrix: Water**		**Batch: 6110526**			
Acetone	ND	10.0	20.0	ug/L	1	11/14/16 16:40	EPA 8260B	
Benzene	ND	0.100	0.200	"	"	"	"	
Bromobenzene	ND	0.250	0.500	"	"	"	"	
Bromochloromethane	ND	0.500	1.00	"	"	"	"	
Bromodichloromethane	ND	0.500	1.00	"	"	"	"	
Bromoform	ND	0.500	1.00	"	"	"	"	
Bromomethane	ND	5.00	5.00	"	"	"	"	
2-Butanone (MEK)	ND	5.00	10.0	"	"	"	"	
n-Butylbenzene	ND	0.500	1.00	"	"	"	"	
sec-Butylbenzene	ND	0.500	1.00	"	"	"	"	
tert-Butylbenzene	ND	0.500	1.00	"	"	"	"	
Carbon tetrachloride	ND	0.500	1.00	"	"	"	"	
Chlorobenzene	ND	0.250	0.500	"	"	"	"	
Chloroethane	ND	5.00	5.00	"	"	"	"	
Chloroform	ND	0.500	1.00	"	"	"	"	
Chloromethane	ND	2.50	5.00	"	"	"	"	
2-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
4-Chlorotoluene	ND	0.500	1.00	"	"	"	"	
1,2-Dibromo-3-chloropropane	ND	2.50	5.00	"	"	"	"	
Dibromochloromethane	ND	0.500	1.00	"	"	"	"	
1,2-Dibromoethane (EDB)	ND	0.250	0.500	"	"	"	"	
Dibromomethane	ND	0.500	1.00	"	"	"	"	
1,2-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,3-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
1,4-Dichlorobenzene	ND	0.250	0.500	"	"	"	"	
Dichlorodifluoromethane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloroethane	ND	0.250	0.500	"	"	"	"	
1,2-Dichloroethane (EDC)	ND	0.250	0.500	"	"	"	"	
1,1-Dichloroethene	ND	0.250	0.500	"	"	"	"	
cis-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
trans-1,2-Dichloroethene	ND	0.250	0.500	"	"	"	"	
1,2-Dichloropropane	ND	0.250	0.500	"	"	"	"	
1,3-Dichloropropane	ND	0.500	1.00	"	"	"	"	
2,2-Dichloropropane	ND	0.500	1.00	"	"	"	"	
1,1-Dichloropropene	ND	0.500	1.00	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Volatile Organic Compounds by EPA 8260B

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
TB-111316-2 (A6K0418-21)			**Matrix: Water**		**Batch: 6110526**			
cis-1,3-Dichloropropene	ND	0.500	1.00	ug/L	1	"	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.500	1.00	"	"	"	"	
Ethylbenzene	ND	0.250	0.500	"	"	"	"	
Hexachlorobutadiene	ND	2.50	5.00	"	"	"	"	
2-Hexanone	ND	5.00	10.0	"	"	"	"	
Isopropylbenzene	ND	0.500	1.00	"	"	"	"	
4-Isopropyltoluene	ND	0.500	1.00	"	"	"	"	
4-Methyl-2-pentanone (MiBK)	ND	5.00	10.0	"	"	"	"	
Methyl tert-butyl ether (MTBE)	ND	0.500	1.00	"	"	"	"	
Methylene chloride	ND	1.50	3.00	"	"	"	"	
Naphthalene	ND	1.00	2.00	"	"	"	"	
n-Propylbenzene	ND	0.250	0.500	"	"	"	"	
Styrene	ND	0.500	1.00	"	"	"	"	
1,1,1,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2,2-Tetrachloroethane	ND	0.250	0.500	"	"	"	"	
Tetrachloroethene (PCE)	ND	0.250	0.500	"	"	"	"	
Toluene	ND	0.500	1.00	"	"	"	"	
1,2,3-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.00	2.00	"	"	"	"	
1,1,1-Trichloroethane	ND	0.250	0.500	"	"	"	"	
1,1,2-Trichloroethane	ND	0.250	0.500	"	"	"	"	
Trichloroethene (TCE)	ND	0.250	0.500	"	"	"	"	
Trichlorofluoromethane	ND	1.00	2.00	"	"	"	"	
1,2,3-Trichloropropane	ND	0.500	1.00	"	"	"	"	
1,2,4-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
1,3,5-Trimethylbenzene	ND	0.500	1.00	"	"	"	"	
Vinyl chloride	ND	0.250	0.500	"	"	"	"	
m,p-Xylene	ND	0.500	1.00	"	"	"	"	
o-Xylene	ND	0.250	0.500	"	"	"	"	
Surrogate: 1,4-Difluorobenzene (Surr)			*Recovery: 112 %*	*Limits: 80-120 %*	"	"	"	
Toluene-d8 (Surr)			*105 %*	*Limits: 80-120 %*	"	"	"	
4-Bromofluorobenzene (Surr)			*100 %*	*Limits: 80-120 %*	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW013S (A6K0418-05)			**Matrix: Water**		**Batch: 6110577**			
Acenaphthene	ND	0.00971	0.0194	ug/L	1	11/15/16 17:16	EPA 8270D	
Acenaphthylene	ND	0.00971	0.0194	"	"	"	"	
Anthracene	**0.0279**	0.00971	0.0194	"	"	"	"	
Benz(a)anthracene	ND	0.00971	0.0194	"	"	"	"	
Benzo(a)pyrene	ND	0.0126	0.0291	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0146	0.0291	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0146	0.0291	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.00971	0.0194	"	"	"	"	
Chrysene	ND	0.00971	0.0194	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00971	0.0194	"	"	"	"	
Fluoranthene	ND	0.00971	0.0194	"	"	"	"	
Fluorene	ND	0.00971	0.0194	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00971	0.0194	"	"	"	"	
1-Methylnaphthalene	ND	0.0194	0.0388	"	"	"	"	
2-Methylnaphthalene	ND	0.0194	0.0388	"	"	"	"	
Naphthalene	ND	0.0194	0.0388	"	"	"	"	
Phenanthrene	ND	0.00971	0.0194	"	"	"	"	
Pyrene	ND	0.00971	0.0194	"	"	"	"	
Carbazole	ND	0.0146	0.0291	"	"	"	"	
Dibenzofuran	ND	0.00971	0.0194	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.243	0.485	"	"	"	"	
2-Chlorophenol	ND	0.243	0.485	"	"	"	"	
2,4-Dichlorophenol	ND	0.243	0.485	"	"	"	"	
2,4-Dimethylphenol	ND	0.243	0.485	"	"	"	"	
2,4-Dinitrophenol	ND	0.243	0.485	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	0.485	0.971	"	"	"	"	
2-Methylphenol	ND	0.243	0.485	"	"	"	"	
3+4-Methylphenol(s)	ND	0.243	0.485	"	"	"	"	
2-Nitrophenol	ND	0.243	0.485	"	"	"	"	
4-Nitrophenol	ND	0.243	0.485	"	"	"	"	
Pentachlorophenol (PCP)	ND	0.0971	0.194	"	"	"	"	
Phenol	ND	0.243	0.485	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	0.243	0.485	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	0.243	0.485	"	"	"	"	
2,4,5-Trichlorophenol	ND	0.243	0.485	"	"	"	"	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW013S (A6K0418-05)			**Matrix: Water**		**Batch: 6110577**			
2,4,6-Trichlorophenol	ND	0.243	0.485	ug/L	1	"	EPA 8270D	
Bis(2-ethylhexyl)phthalate	ND	0.485	0.971	"	"	"	"	
Butyl benzyl phthalate	ND	0.485	0.971	"	"	"	"	
Diethylphthalate	ND	0.485	0.971	"	"	"	"	
Dimethylphthalate	ND	0.485	0.971	"	"	"	"	
Di-n-butylphthalate	ND	0.485	0.971	"	"	"	"	
Di-n-octyl phthalate	ND	0.485	0.971	"	"	"	"	
N-Nitrosodimethylamine	ND	0.243	0.485	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	0.243	0.485	"	"	"	"	
N-Nitrosodiphenylamine	ND	0.243	0.485	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	0.243	0.485	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	0.243	0.485	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	0.243	0.485	"	"	"	"	
Hexachlorobenzene	ND	0.243	0.485	"	"	"	"	
Hexachlorobutadiene	ND	0.243	0.485	"	"	"	"	
Hexachlorocyclopentadiene	ND	0.243	0.485	"	"	"	"	
Hexachloroethane	ND	0.243	0.485	"	"	"	"	
2-Chloronaphthalene	ND	0.243	0.485	"	"	"	"	
1,2-Dichlorobenzene	ND	0.243	0.485	"	"	"	"	
1,3-Dichlorobenzene	ND	0.243	0.485	"	"	"	"	
1,4-Dichlorobenzene	ND	0.243	0.485	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.243	0.485	"	"	"	"	
4-Bromophenyl phenyl ether	ND	0.243	0.485	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.243	0.485	"	"	"	"	
Aniline	ND	0.243	0.485	"	"	"	"	
4-Chloroaniline	ND	0.485	0.971	"	"	"	"	
2-Nitroaniline	ND	0.485	0.971	"	"	"	"	
3-Nitroaniline	ND	0.485	0.971	"	"	"	"	
4-Nitroaniline	ND	0.485	0.971	"	"	"	"	
Nitrobenzene	ND	0.243	0.485	"	"	"	"	
2,4-Dinitrotoluene	ND	0.243	0.485	"	"	"	"	
2,6-Dinitrotoluene	ND	0.243	0.485	"	"	"	"	
1,2-Dinitrobenzene	ND	0.243	0.485	"	"	"	"	
1,3-Dinitrobenzene	ND	0.243	0.485	"	"	"	"	
1,4-Dinitrobenzene	ND	0.243	0.485	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW013S (A6K0418-05)			**Matrix: Water**		**Batch: 6110577**			
Benzoic acid	ND	1.94	1.94	ug/L	1	"	EPA 8270D	
Benzyl alcohol	ND	0.243	0.485	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 27 %*	*Limits: 44-120 %*	"	"	"	*S-06*
2-Fluorobiphenyl (Surr)			*31 %*	*Limits: 44-120 %*	"	"	"	*S-06*
Phenol-d6 (Surr)			*10 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*82 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*16 %*	*Limits: 19-120 %*	"	"	"	*S-06*
2,4,6-Tribromophenol (Surr)			*70 %*	*Limits: 43-140 %*	"	"	"	*Q-41*
LW011S (A6K0418-06)			**Matrix: Water**		**Batch: 6110577**			
Acenaphthene	ND	2.40	4.81	ug/L	250	11/15/16 19:39	EPA 8270D	
Acenaphthylene	ND	2.40	4.81	"	"	"	"	
Anthracene	ND	2.40	4.81	"	"	"	"	
Benz(a)anthracene	ND	2.40	4.81	"	"	"	"	
Benzo(a)pyrene	ND	3.12	7.21	"	"	"	"	
Benzo(b)fluoranthene	ND	3.61	7.21	"	"	"	"	
Benzo(k)fluoranthene	ND	3.61	7.21	"	"	"	"	
Benzo(g,h,i)perylene	ND	2.40	4.81	"	"	"	"	
Chrysene	ND	2.40	4.81	"	"	"	"	
Dibenz(a,h)anthracene	ND	2.40	4.81	"	"	"	"	
Fluoranthene	ND	2.40	4.81	"	"	"	"	
Fluorene	ND	2.40	4.81	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	2.40	4.81	"	"	"	"	
1-Methylnaphthalene	ND	4.81	9.62	"	"	"	"	
2-Methylnaphthalene	ND	4.81	9.62	"	"	"	"	
Naphthalene	ND	4.81	9.62	"	"	"	"	
Phenanthrene	ND	2.40	4.81	"	"	"	"	
Pyrene	ND	2.40	4.81	"	"	"	"	
Carbazole	ND	3.61	7.21	"	"	"	"	
Dibenzofuran	ND	2.40	4.81	"	"	"	"	
4-Chloro-3-methylphenol	ND	60.1	120	"	"	"	"	
2-Chlorophenol	ND	60.1	120	"	"	"	"	
2,4-Dichlorophenol	ND	60.1	120	"	"	"	"	
2,4-Dimethylphenol	ND	60.1	120	"	"	"	"	
2,4-Dinitrophenol	ND	60.1	120	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	120	240	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW011S (A6K0418-06)			**Matrix: Water**		**Batch: 6110577**			
2-Methylphenol	ND	60.1	120	ug/L	250	"	EPA 8270D	
3+4-Methylphenol(s)	ND	60.1	120	"	"	"	"	
2-Nitrophenol	ND	60.1	120	"	"	"	"	
4-Nitrophenol	ND	60.1	120	"	"	"	"	
Pentachlorophenol (PCP)	**96.9**	24.0	48.1	"	"	"	"	
Phenol	ND	60.1	120	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	60.1	120	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	60.1	120	"	"	"	"	
2,4,5-Trichlorophenol	ND	60.1	120	"	"	"	"	
2,4,6-Trichlorophenol	ND	60.1	120	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	120	240	"	"	"	"	
Butyl benzyl phthalate	ND	120	240	"	"	"	"	
Diethylphthalate	ND	120	240	"	"	"	"	
Dimethylphthalate	ND	120	240	"	"	"	"	
Di-n-butylphthalate	ND	120	240	"	"	"	"	
Di-n-octyl phthalate	ND	120	240	"	"	"	"	
N-Nitrosodimethylamine	ND	60.1	120	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	60.1	120	"	"	"	"	
N-Nitrosodiphenylamine	ND	60.1	120	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	60.1	120	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	60.1	120	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	60.1	120	"	"	"	"	
Hexachlorobenzene	ND	60.1	120	"	"	"	"	
Hexachlorobutadiene	ND	60.1	120	"	"	"	"	
Hexachlorocyclopentadiene	ND	60.1	120	"	"	"	"	
Hexachloroethane	ND	60.1	120	"	"	"	"	
2-Chloronaphthalene	ND	60.1	120	"	"	"	"	
1,2-Dichlorobenzene	ND	60.1	120	"	"	"	"	
1,3-Dichlorobenzene	ND	60.1	120	"	"	"	"	
1,4-Dichlorobenzene	ND	60.1	120	"	"	"	"	
1,2,4-Trichlorobenzene	ND	60.1	120	"	"	"	"	
4-Bromophenyl phenyl ether	ND	60.1	120	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	60.1	120	"	"	"	"	
Aniline	ND	60.1	120	"	"	"	"	
4-Chloroaniline	ND	120	240	"	"	"	"	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW011S (A6K0418-06)			**Matrix: Water**		**Batch: 6110577**			
2-Nitroaniline	ND	120	240	ug/L	250	"	EPA 8270D	
3-Nitroaniline	ND	120	240	"	"	"	"	
4-Nitroaniline	ND	120	240	"	"	"	"	
Nitrobenzene	ND	60.1	120	"	"	"	"	
2,4-Dinitrotoluene	ND	60.1	120	"	"	"	"	
2,6-Dinitrotoluene	ND	60.1	120	"	"	"	"	
1,2-Dinitrobenzene	ND	60.1	120	"	"	"	"	
1,3-Dinitrobenzene	ND	60.1	120	"	"	"	"	
1,4-Dinitrobenzene	ND	60.1	120	"	"	"	"	
Benzoic acid	ND	240	481	"	"	"	"	
Benzyl alcohol	ND	60.1	120	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 49 %*	*Limits: 44-120 %*	"	"	"	*S-01*
2-Fluorobiphenyl (Surr)			*53 %*	*Limits: 44-120 %*	"	"	"	*S-01*
Phenol-d6 (Surr)			*10 %*	*Limits: 10-120 %*	"	"	"	*S-01*
p-Terphenyl-d14 (Surr)			*100 %*	*Limits: 50-133 %*	"	"	"	*S-01*
2-Fluorophenol (Surr)			*29 %*	*Limits: 19-120 %*	"	"	"	*S-01*
2,4,6-Tribromophenol (Surr)			*132 %*	*Limits: 43-140 %*	"	"	"	*S-01*
OX002S (A6K0418-07RE1)			**Matrix: Water**		**Batch: 6110577**			
Acenaphthene	ND	0.481	0.962	ug/L	50	11/16/16 15:19	EPA 8270D	
Acenaphthylene	ND	0.481	0.962	"	"	"	"	
Anthracene	ND	0.481	0.962	"	"	"	"	
Benz(a)anthracene	ND	0.481	0.962	"	"	"	"	
Benzo(a)pyrene	ND	0.625	1.44	"	"	"	"	
Benzo(b)fluoranthene	ND	0.721	1.44	"	"	"	"	
Benzo(k)fluoranthene	ND	0.721	1.44	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.481	0.962	"	"	"	"	
Chrysene	ND	0.481	0.962	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.481	0.962	"	"	"	"	
Fluoranthene	ND	0.481	0.962	"	"	"	"	
Fluorene	ND	0.481	0.962	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.481	0.962	"	"	"	"	
1-Methylnaphthalene	**2.04**	0.962	1.92	"	"	"	"	
2-Methylnaphthalene	**2.81**	0.962	1.92	"	"	"	"	
Naphthalene	**6.51**	0.962	1.92	"	"	"	"	
Phenanthrene	ND	0.481	0.962	"	"	"	"	

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
OX002S (A6K0418-07RE1)			**Matrix: Water**		**Batch: 6110577**			
Pyrene	ND	0.481	0.962	ug/L	50	"	EPA 8270D	
Carbazole	ND	0.721	1.44	"	"	"	"	
Dibenzofuran	ND	0.481	0.962	"	"	"	"	
4-Chloro-3-methylphenol	ND	12.0	24.0	"	"	"	"	
2-Chlorophenol	ND	12.0	24.0	"	"	"	"	
2,4-Dichlorophenol	ND	12.0	24.0	"	"	"	"	
2,4-Dimethylphenol	ND	12.0	24.0	"	"	"	"	
2,4-Dinitrophenol	ND	12.0	24.0	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	24.0	48.1	"	"	"	"	
2-Methylphenol	ND	12.0	24.0	"	"	"	"	
3+4-Methylphenol(s)	ND	12.0	24.0	"	"	"	"	
2-Nitrophenol	ND	12.0	24.0	"	"	"	"	
4-Nitrophenol	ND	12.0	24.0	"	"	"	"	
Pentachlorophenol (PCP)	**99.4**	4.81	9.62	"	"	"	"	
Phenol	ND	12.0	24.0	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	12.0	24.0	"	"	"	"	
2,3,5,6-Tetrachlorophenol	**33.4**	12.0	24.0	"	"	"	"	
2,4,5-Trichlorophenol	ND	12.0	24.0	"	"	"	"	
2,4,6-Trichlorophenol	ND	12.0	24.0	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	24.0	48.1	"	"	"	"	
Butyl benzyl phthalate	ND	24.0	48.1	"	"	"	"	
Diethylphthalate	ND	24.0	48.1	"	"	"	"	
Dimethylphthalate	ND	24.0	48.1	"	"	"	"	
Di-n-butylphthalate	ND	24.0	48.1	"	"	"	"	
Di-n-octyl phthalate	ND	24.0	48.1	"	"	"	"	
N-Nitrosodimethylamine	ND	12.0	24.0	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	12.0	24.0	"	"	"	"	
N-Nitrosodiphenylamine	ND	12.0	24.0	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	12.0	24.0	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	12.0	24.0	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	12.0	24.0	"	"	"	"	
Hexachlorobenzene	ND	12.0	24.0	"	"	"	"	
Hexachlorobutadiene	ND	12.0	24.0	"	"	"	"	
Hexachlorocyclopentadiene	ND	12.0	24.0	"	"	"	"	
Hexachloroethane	ND	12.0	24.0	"	"	"	"	Q-30

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
OX002S (A6K0418-07RE1)			**Matrix: Water**		**Batch: 6110577**			
2-Chloronaphthalene	ND	12.0	24.0	ug/L	50	"	EPA 8270D	
1,2-Dichlorobenzene	ND	12.0	24.0	"	"	"	"	
1,3-Dichlorobenzene	ND	12.0	24.0	"	"	"	"	
1,4-Dichlorobenzene	ND	12.0	24.0	"	"	"	"	
1,2,4-Trichlorobenzene	ND	12.0	24.0	"	"	"	"	
4-Bromophenyl phenyl ether	ND	12.0	24.0	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	12.0	24.0	"	"	"	"	
Aniline	ND	12.0	24.0	"	"	"	"	
4-Chloroaniline	ND	24.0	48.1	"	"	"	"	
2-Nitroaniline	ND	48.1	48.1	"	"	"	"	
3-Nitroaniline	ND	24.0	48.1	"	"	"	"	
4-Nitroaniline	ND	24.0	48.1	"	"	"	"	
Nitrobenzene	ND	12.0	24.0	"	"	"	"	
2,4-Dinitrotoluene	ND	12.0	24.0	"	"	"	"	
2,6-Dinitrotoluene	ND	12.0	24.0	"	"	"	"	
1,2-Dinitrobenzene	ND	12.0	24.0	"	"	"	"	
1,3-Dinitrobenzene	ND	12.0	24.0	"	"	"	"	
1,4-Dinitrobenzene	ND	12.0	24.0	"	"	"	"	
Benzoic acid	ND	48.1	96.2	"	"	"	"	
Benzyl alcohol	ND	12.0	24.0	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 44 %*	*Limits: 44-120 %*	"	"	"	*S-05*
2-Fluorobiphenyl (Surr)			*55 %*	*Limits: 44-120 %*	"	"	"	*S-05*
Phenol-d6 (Surr)			*15 %*	*Limits: 10-120 %*	"	"	"	*S-05*
p-Terphenyl-d14 (Surr)			*80 %*	*Limits: 50-133 %*	"	"	"	*S-05*
2-Fluorophenol (Surr)			*21 %*	*Limits: 19-120 %*	"	"	"	*S-05*
2,4,6-Tribromophenol (Surr)			*136 %*	*Limits: 43-140 %*	"	"	"	*S-05*

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW010D (A6K0418-11)			**Matrix: Water**		**Batch: 6110577**			
Acenaphthene	ND	0.00962	0.0192	ug/L	1	11/15/16 17:52	EPA 8270D	
Acenaphthylene	ND	0.00962	0.0192	"	"	"	"	
Anthracene	**0.0324**	0.00962	0.0192	"	"	"	"	
Benz(a)anthracene	ND	0.00962	0.0192	"	"	"	"	
Benzo(a)pyrene	ND	0.0125	0.0288	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0144	0.0288	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0144	0.0288	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.00962	0.0192	"	"	"	"	
Chrysene	ND	0.00962	0.0192	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.00962	0.0192	"	"	"	"	
Fluoranthene	ND	0.00962	0.0192	"	"	"	"	
Fluorene	ND	0.00962	0.0192	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.00962	0.0192	"	"	"	"	
1-Methylnaphthalene	ND	0.0192	0.0385	"	"	"	"	
2-Methylnaphthalene	ND	0.0192	0.0385	"	"	"	"	
Naphthalene	ND	0.0192	0.0385	"	"	"	"	
Phenanthrene	ND	0.0192	0.0192	"	"	"	"	
Pyrene	ND	0.00962	0.0192	"	"	"	"	
Carbazole	ND	0.0144	0.0288	"	"	"	"	
Dibenzofuran	ND	0.00962	0.0192	"	"	"	"	
4-Chloro-3-methylphenol	ND	0.240	0.481	"	"	"	"	
2-Chlorophenol	ND	0.240	0.481	"	"	"	"	
2,4-Dichlorophenol	ND	0.240	0.481	"	"	"	"	
2,4-Dimethylphenol	ND	0.240	0.481	"	"	"	"	
2,4-Dinitrophenol	ND	0.240	0.481	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	0.481	0.962	"	"	"	"	
2-Methylphenol	ND	0.240	0.481	"	"	"	"	
3+4-Methylphenol(s)	ND	0.240	0.481	"	"	"	"	
2-Nitrophenol	ND	0.240	0.481	"	"	"	"	
4-Nitrophenol	ND	0.240	0.481	"	"	"	"	
Pentachlorophenol (PCP)	ND	0.0962	0.192	"	"	"	"	
Phenol	ND	0.240	0.481	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	0.240	0.481	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	0.240	0.481	"	"	"	"	
2,4,5-Trichlorophenol	ND	0.240	0.481	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW010D (A6K0418-11)			**Matrix: Water**		**Batch: 6110577**			
2,4,6-Trichlorophenol	ND	0.240	0.481	ug/L	1	"	EPA 8270D	
Bis(2-ethylhexyl)phthalate	ND	0.481	0.962	"	"	"	"	
Butyl benzyl phthalate	ND	0.481	0.962	"	"	"	"	
Diethylphthalate	ND	0.481	0.962	"	"	"	"	
Dimethylphthalate	ND	0.481	0.962	"	"	"	"	
Di-n-butylphthalate	ND	0.481	0.962	"	"	"	"	
Di-n-octyl phthalate	ND	0.481	0.962	"	"	"	"	
N-Nitrosodimethylamine	ND	0.240	0.481	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	0.240	0.481	"	"	"	"	Q-42
N-Nitrosodiphenylamine	ND	0.240	0.481	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	0.240	0.481	"	"	"	"	Q-42
Bis(2-Chloroethyl) ether	ND	0.240	0.481	"	"	"	"	Q-42
Bis(2-Chloroisopropyl) ether	ND	0.240	0.481	"	"	"	"	Q-42
Hexachlorobenzene	ND	0.240	0.481	"	"	"	"	
Hexachlorobutadiene	ND	0.240	0.481	"	"	"	"	
Hexachlorocyclopentadiene	ND	0.240	0.481	"	"	"	"	
Hexachloroethane	ND	0.240	0.481	"	"	"	"	
2-Chloronaphthalene	ND	0.240	0.481	"	"	"	"	
1,2-Dichlorobenzene	ND	0.240	0.481	"	"	"	"	
1,3-Dichlorobenzene	ND	0.240	0.481	"	"	"	"	
1,4-Dichlorobenzene	ND	0.240	0.481	"	"	"	"	
1,2,4-Trichlorobenzene	ND	0.240	0.481	"	"	"	"	
4-Bromophenyl phenyl ether	ND	0.240	0.481	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	0.240	0.481	"	"	"	"	
Aniline	ND	0.240	0.481	"	"	"	"	
4-Chloroaniline	ND	0.481	0.962	"	"	"	"	Q-42
2-Nitroaniline	ND	0.481	0.962	"	"	"	"	
3-Nitroaniline	ND	0.481	0.962	"	"	"	"	
4-Nitroaniline	ND	0.481	0.962	"	"	"	"	
Nitrobenzene	ND	0.240	0.481	"	"	"	"	Q-42
2,4-Dinitrotoluene	ND	0.240	0.481	"	"	"	"	
2,6-Dinitrotoluene	ND	0.240	0.481	"	"	"	"	
1,2-Dinitrobenzene	ND	0.240	0.481	"	"	"	"	
1,3-Dinitrobenzene	ND	0.240	0.481	"	"	"	"	
1,4-Dinitrobenzene	ND	0.240	0.481	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
LW010D (A6K0418-11)			**Matrix: Water**		**Batch: 6110577**			
Benzoic acid	ND	1.92	1.92	ug/L	1	"	EPA 8270D	Q-42
Benzyl alcohol	ND	0.240	0.481	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 39 %*	*Limits: 44-120 %*	"	"	"	*S-06*
2-Fluorobiphenyl (Surr)			*44 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*16 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*96 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*23 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*83 %*	*Limits: 43-140 %*	"	"	"	*Q-41*
RW2 (A6K0418-12)			**Matrix: Water**		**Batch: 6110577**			
Acenaphthene	ND	0.392	0.392	ug/L	5	11/15/16 20:51	EPA 8270D	R-02
Acenaphthylene	ND	0.196	0.196	"	"	"	"	R-02
Anthracene	ND	0.0490	0.0980	"	"	"	"	
Benz(a)anthracene	ND	0.0490	0.0980	"	"	"	"	
Benzo(a)pyrene	ND	0.0637	0.147	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0735	0.147	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0735	0.147	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0490	0.0980	"	"	"	"	
Chrysene	ND	0.0490	0.0980	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0490	0.0980	"	"	"	"	
Fluoranthene	ND	0.0490	0.0980	"	"	"	"	
Fluorene	**0.518**	0.0490	0.0980	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0490	0.0980	"	"	"	"	
1-Methylnaphthalene	ND	0.686	0.686	"	"	"	"	R-02
2-Methylnaphthalene	ND	0.0980	0.196	"	"	"	"	
Naphthalene	ND	0.588	0.588	"	"	"	"	R-02
Phenanthrene	**0.192**	0.0490	0.0980	"	"	"	"	
Pyrene	ND	0.0490	0.0980	"	"	"	"	
Carbazole	ND	0.0735	0.147	"	"	"	"	
Dibenzofuran	**0.363**	0.0490	0.0980	"	"	"	"	
4-Chloro-3-methylphenol	ND	2.45	2.45	"	"	"	"	
2-Chlorophenol	ND	1.23	2.45	"	"	"	"	
2,4-Dichlorophenol	ND	1.23	2.45	"	"	"	"	
2,4-Dimethylphenol	ND	1.23	2.45	"	"	"	"	
2,4-Dinitrophenol	ND	1.23	2.45	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	2.45	4.90	"	"	"	"	

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Darwin Thomas, Business Development Director

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12232 S.W. Garden Place
Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
RW2 (A6K0418-12)			**Matrix: Water**		**Batch: 6110577**			
2-Methylphenol	ND	1.23	2.45	ug/L	5	"	EPA 8270D	
3+4-Methylphenol(s)	ND	1.23	2.45	"	"	"	"	
2-Nitrophenol	ND	1.23	2.45	"	"	"	"	
4-Nitrophenol	ND	2.45	2.45	"	"	"	"	
Pentachlorophenol (PCP)	ND	0.490	0.980	"	"	"	"	
Phenol	ND	1.23	2.45	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	1.23	2.45	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	1.23	2.45	"	"	"	"	
2,4,5-Trichlorophenol	ND	1.23	2.45	"	"	"	"	
2,4,6-Trichlorophenol	ND	1.23	2.45	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	2.45	4.90	"	"	"	"	
Butyl benzyl phthalate	ND	2.45	4.90	"	"	"	"	
Diethylphthalate	ND	2.45	4.90	"	"	"	"	
Dimethylphthalate	ND	2.45	4.90	"	"	"	"	
Di-n-butylphthalate	ND	2.45	4.90	"	"	"	"	
Di-n-octyl phthalate	ND	2.45	4.90	"	"	"	"	
N-Nitrosodimethylamine	ND	1.23	2.45	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	1.23	2.45	"	"	"	"	
N-Nitrosodiphenylamine	ND	1.23	2.45	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	1.23	2.45	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	1.23	2.45	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	1.23	2.45	"	"	"	"	
Hexachlorobenzene	ND	1.23	2.45	"	"	"	"	
Hexachlorobutadiene	ND	1.23	2.45	"	"	"	"	
Hexachlorocyclopentadiene	ND	1.23	2.45	"	"	"	"	
Hexachloroethane	ND	1.23	2.45	"	"	"	"	
2-Chloronaphthalene	ND	1.23	2.45	"	"	"	"	
1,2-Dichlorobenzene	ND	1.23	2.45	"	"	"	"	
1,3-Dichlorobenzene	ND	1.23	2.45	"	"	"	"	
1,4-Dichlorobenzene	ND	1.23	2.45	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.23	2.45	"	"	"	"	
4-Bromophenyl phenyl ether	ND	1.23	2.45	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	1.23	2.45	"	"	"	"	
Aniline	ND	1.23	2.45	"	"	"	"	
4-Chloroaniline	ND	2.45	4.90	"	"	"	"	

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Tigard, OR 97223
503-718-2323 Phone
503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
RW2 (A6K0418-12)			**Matrix: Water**		**Batch: 6110577**			
2-Nitroaniline	ND	13.7	13.7	ug/L	5	"	EPA 8270D	R-02
3-Nitroaniline	ND	2.45	4.90	"	"	"	"	
4-Nitroaniline	ND	2.45	4.90	"	"	"	"	
Nitrobenzene	ND	2.45	2.45	"	"	"	"	
2,4-Dinitrotoluene	ND	1.23	2.45	"	"	"	"	
2,6-Dinitrotoluene	ND	2.45	2.45	"	"	"	"	
1,2-Dinitrobenzene	ND	2.45	2.45	"	"	"	"	
1,3-Dinitrobenzene	ND	1.23	2.45	"	"	"	"	
1,4-Dinitrobenzene	ND	4.41	4.41	"	"	"	"	R-02
Benzoic acid	ND	11.3	11.3	"	"	"	"	R-02
Benzyl alcohol	ND	1.23	2.45	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 67 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*78 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*25 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*89 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*39 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*138 %*	*Limits: 43-140 %*	"	"	"	*Q-41*
W (A6K0418-13RE1)			**Matrix: Water**		**Batch: 6110577**			
Acenaphthene	**0.488**	0.0481	0.0962	ug/L	5	11/18/16 11:03	EPA 8270D	
Acenaphthylene	ND	0.192	0.192	"	"	"	"	R-02
Anthracene	**0.0505**	0.0481	0.0962	"	"	"	"	J
Benz(a)anthracene	ND	0.0481	0.0962	"	"	"	"	
Benzo(a)pyrene	ND	0.0625	0.144	"	"	"	"	
Benzo(b)fluoranthene	ND	0.0721	0.144	"	"	"	"	
Benzo(k)fluoranthene	ND	0.0721	0.144	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0481	0.0962	"	"	"	"	
Chrysene	ND	0.0481	0.0962	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0481	0.0962	"	"	"	"	
Fluoranthene	ND	0.0481	0.0962	"	"	"	"	
Fluorene	**0.572**	0.0481	0.0962	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0481	0.0962	"	"	"	"	
1-Methylnaphthalene	ND	0.673	0.673	"	"	"	"	R-02
2-Methylnaphthalene	ND	0.0962	0.192	"	"	"	"	
Naphthalene	ND	0.625	0.625	"	"	"	"	R-02
Phenanthrene	**0.223**	0.0481	0.0962	"	"	"	"	

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Tigard, OR 97223
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503-718-0333 Fax

Stantec Lynnwood	Project: **TOC Groundwater Quarterly**	
19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
W (A6K0418-13RE1)			**Matrix: Water**		**Batch: 6110577**			
Pyrene	ND	0.0481	0.0962	ug/L	5	"	EPA 8270D	
Carbazole	ND	0.0721	0.144	"	"	"	"	
Dibenzofuran	**0.417**	0.0481	0.0962	"	"	"	"	
4-Chloro-3-methylphenol	ND	1.20	2.40	"	"	"	"	
2-Chlorophenol	ND	1.20	2.40	"	"	"	"	
2,4-Dichlorophenol	ND	1.20	2.40	"	"	"	"	
2,4-Dimethylphenol	ND	1.20	2.40	"	"	"	"	
2,4-Dinitrophenol	ND	3.37	3.37	"	"	"	"	R-02
4,6-Dinitro-2-methylphenol	ND	2.40	4.81	"	"	"	"	
2-Methylphenol	ND	1.20	2.40	"	"	"	"	
3+4-Methylphenol(s)	ND	1.20	2.40	"	"	"	"	
2-Nitrophenol	ND	1.20	2.40	"	"	"	"	
4-Nitrophenol	ND	1.20	2.40	"	"	"	"	
Pentachlorophenol (PCP)	**0.548**	0.481	0.962	"	"	"	"	J
Phenol	ND	1.20	2.40	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	1.20	2.40	"	"	"	"	
2,3,5,6-Tetrachlorophenol	ND	1.20	2.40	"	"	"	"	
2,4,5-Trichlorophenol	ND	1.20	2.40	"	"	"	"	
2,4,6-Trichlorophenol	ND	1.20	2.40	"	"	"	"	
Bis(2-ethylhexyl)phthalate	ND	2.40	4.81	"	"	"	"	
Butyl benzyl phthalate	ND	2.40	4.81	"	"	"	"	
Diethylphthalate	ND	2.40	4.81	"	"	"	"	
Dimethylphthalate	ND	2.40	4.81	"	"	"	"	
Di-n-butylphthalate	ND	2.40	4.81	"	"	"	"	
Di-n-octyl phthalate	ND	2.40	4.81	"	"	"	"	
N-Nitrosodimethylamine	ND	1.20	2.40	"	"	"	"	
N-Nitroso-di-n-propylamine	ND	1.20	2.40	"	"	"	"	
N-Nitrosodiphenylamine	ND	1.20	2.40	"	"	"	"	
Bis(2-Chloroethoxy) methane	ND	1.20	2.40	"	"	"	"	
Bis(2-Chloroethyl) ether	ND	1.20	2.40	"	"	"	"	
Bis(2-Chloroisopropyl) ether	ND	1.20	2.40	"	"	"	"	
Hexachlorobenzene	ND	1.20	2.40	"	"	"	"	
Hexachlorobutadiene	ND	1.20	2.40	"	"	"	"	
Hexachlorocyclopentadiene	ND	1.20	2.40	"	"	"	"	
Hexachloroethane	ND	1.20	2.40	"	"	"	"	Q-30

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Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
W (A6K0418-13RE1)			**Matrix: Water**		**Batch: 6110577**			
2-Chloronaphthalene	ND	1.20	2.40	ug/L	5	"	EPA 8270D	
1,2-Dichlorobenzene	ND	1.20	2.40	"	"	"	"	
1,3-Dichlorobenzene	ND	1.20	2.40	"	"	"	"	
1,4-Dichlorobenzene	ND	1.20	2.40	"	"	"	"	
1,2,4-Trichlorobenzene	ND	1.20	2.40	"	"	"	"	
4-Bromophenyl phenyl ether	ND	1.20	2.40	"	"	"	"	
4-Chlorophenyl phenyl ether	ND	1.20	2.40	"	"	"	"	
Aniline	ND	1.20	2.40	"	"	"	"	
4-Chloroaniline	ND	2.40	4.81	"	"	"	"	
2-Nitroaniline	ND	12.0	12.0	"	"	"	"	R-02
3-Nitroaniline	ND	2.40	4.81	"	"	"	"	
4-Nitroaniline	ND	2.40	4.81	"	"	"	"	
Nitrobenzene	ND	2.40	2.40	"	"	"	"	
2,4-Dinitrotoluene	ND	1.20	2.40	"	"	"	"	
2,6-Dinitrotoluene	ND	2.40	2.40	"	"	"	"	
1,2-Dinitrobenzene	ND	2.40	2.40	"	"	"	"	
1,3-Dinitrobenzene	ND	1.20	2.40	"	"	"	"	
1,4-Dinitrobenzene	ND	4.09	4.09	"	"	"	"	R-02
Benzoic acid	ND	9.62	9.62	"	"	"	"	
Benzyl alcohol	ND	1.20	2.40	"	"	"	"	
Surrogate: Nitrobenzene-d5 (Surr)			*Recovery: 69 %*	*Limits: 44-120 %*	"	"	"	
2-Fluorobiphenyl (Surr)			*79 %*	*Limits: 44-120 %*	"	"	"	
Phenol-d6 (Surr)			*28 %*	*Limits: 10-120 %*	"	"	"	
p-Terphenyl-d14 (Surr)			*83 %*	*Limits: 50-133 %*	"	"	"	
2-Fluorophenol (Surr)			*41 %*	*Limits: 19-120 %*	"	"	"	
2,4,6-Tribromophenol (Surr)			*134 %*	*Limits: 43-140 %*	"	"	"	*Q-41*

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19101 36th Avenue West Suite 203	Project Number: 185703250	**Reported:**
Lynwood, WA 98036-5759	Project Manager: Rebekah Brooks	01/02/17 16:44

ANALYTICAL SAMPLE RESULTS

Semivolatile Organic Compounds by EPA 8270D

Analyte	Result	MDL	Reporting Limit	Units	Dilution	Date Analyzed	Method	Notes
OX008S (A6K0418-14)			**Matrix: Water**		**Batch: 6110577**			
Acenaphthene	ND	0.0962	0.192	ug/L	10	11/16/16 16:31	EPA 8270D	
Acenaphthylene	ND	0.0962	0.192	"	"	"	"	
Anthracene	ND	0.0962	0.192	"	"	"	"	
Benz(a)anthracene	ND	0.0962	0.192	"	"	"	"	
Benzo(a)pyrene	ND	0.125	0.288	"	"	"	"	
Benzo(b)fluoranthene	ND	0.144	0.288	"	"	"	"	
Benzo(k)fluoranthene	ND	0.144	0.288	"	"	"	"	
Benzo(g,h,i)perylene	ND	0.0962	0.192	"	"	"	"	
Chrysene	ND	0.0962	0.192	"	"	"	"	
Dibenz(a,h)anthracene	ND	0.0962	0.192	"	"	"	"	
Fluoranthene	ND	0.0962	0.192	"	"	"	"	
Fluorene	ND	0.192	0.192	"	"	"	"	
Indeno(1,2,3-cd)pyrene	ND	0.0962	0.192	"	"	"	"	
1-Methylnaphthalene	ND	0.192	0.385	"	"	"	"	
2-Methylnaphthalene	ND	0.192	0.385	"	"	"	"	
Naphthalene	**1.50**	0.192	0.385	"	"	"	"	M-04
Phenanthrene	ND	0.0962	0.192	"	"	"	"	
Pyrene	ND	0.0962	0.192	"	"	"	"	
Carbazole	ND	0.144	0.288	"	"	"	"	
Dibenzofuran	ND	0.0962	0.192	"	"	"	"	
4-Chloro-3-methylphenol	ND	2.40	4.81	"	"	"	"	
2-Chlorophenol	ND	2.40	4.81	"	"	"	"	
2,4-Dichlorophenol	ND	2.40	4.81	"	"	"	"	
2,4-Dimethylphenol	ND	2.40	4.81	"	"	"	"	
2,4-Dinitrophenol	ND	2.40	4.81	"	"	"	"	
4,6-Dinitro-2-methylphenol	ND	4.81	9.62	"	"	"	"	
2-Methylphenol	ND	2.40	4.81	"	"	"	"	
3+4-Methylphenol(s)	ND	2.40	4.81	"	"	"	"	
2-Nitrophenol	ND	2.40	4.81	"	"	"	"	
4-Nitrophenol	ND	2.40	4.81	"	"	"	"	
Pentachlorophenol (PCP)	**17.1**	0.962	1.92	"	"	"	"	
Phenol	ND	2.40	4.81	"	"	"	"	
2,3,4,6-Tetrachlorophenol	ND	2.40	4.81	"	"	"	"	
2,3,5,6-Tetrachlorophenol	**5.16**	2.40	4.81	"	"	"	"	
2,4,5-Trichlorophenol	ND	2.40	4.81	"	"	"	"	

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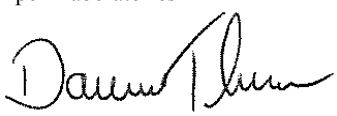

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