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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19 10:05
Sample Matrix:	Wipe	**Date Received:**	02/01/19 10:00
Sample Name:	DB1-5	**Units:**	UG/SAMPLE
Lab Code:	K1900914-012	**Basis:**	Wet

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3546

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	ND	U	200	200	2000	02/19/19 11:42	2/5/19	
Aroclor 1221	ND	U	200	200	2000	02/19/19 11:42	2/5/19	
Aroclor 1232	ND	U	200	200	2000	02/19/19 11:42	2/5/19	
Aroclor 1242	ND	U	200	200	2000	02/19/19 11:42	2/5/19	
Aroclor 1248	ND	U	200	200	2000	02/19/19 11:42	2/5/19	
Aroclor 1254	ND	U	200	200	2000	02/19/19 11:42	2/5/19	
Aroclor 1260	ND	U	200	200	2000	02/19/19 11:42	2/5/19	
Aroclor 1262	ND	U	200	200	2000	02/19/19 11:42	2/5/19	
Aroclor 1268	**1200**	**D**	200	200	2000	02/19/19 11:42	2/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	83120 D	70 - 130	02/19/19 11:42	#

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19 09:31
Sample Matrix:	Soil	**Date Received:**	02/01/19 10:00
Sample Name:	DB4	**Units:**	UG/KG
Lab Code:	K1900914-016	**Basis:**	Wet

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	ND U	10	2.9	1	02/06/19 16:16	2/5/19	
Aroclor 1221	ND U	17	2.9	1	02/06/19 16:16	2/5/19	
Aroclor 1232	ND U	10	2.9	1	02/06/19 16:16	2/5/19	
Aroclor 1242	ND U	10	2.9	1	02/06/19 16:16	2/5/19	
Aroclor 1248	ND U	10	2.9	1	02/06/19 16:16	2/5/19	
Aroclor 1254	**46**	10	2.9	1	02/06/19 16:16	2/5/19	
Aroclor 1260	ND U	10	2.9	1	02/06/19 16:16	2/5/19	
Aroclor 1262	ND U	10	2.9	1	02/06/19 16:16	2/5/19	
Aroclor 1268	**64**	10	2.9	1	02/06/19 16:16	2/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	98	70 - 130	02/06/19 16:16	

Metals

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19 08:34
Sample Matrix:	Wipe	**Date Received:**	02/01/19 10:00
Sample Name:	DB1-3	**Basis:**	NA
Lab Code:	K1900914-003		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.26**	**J**	ug	0.50	0.06	5	02/12/19 16:07	02/05/19	
Cadmium	6020A	**0.014**	**J**	ug	0.020	0.005	5	02/12/19 16:07	02/05/19	
Lead	6020A	**0.384**		ug	0.050	0.005	5	02/12/19 16:07	02/05/19	
Zinc	6020A	**81.5**		ug	0.50	0.10	5	02/12/19 16:07	02/05/19	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19 08:38
Sample Matrix:	Wipe	**Date Received:**	02/01/19 10:00
Sample Name:	DB1-4	**Basis:**	NA
Lab Code:	K1900914-004		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.07**	ug	0.50	0.06	5	02/12/19 16:17	02/05/19	J
Cadmium	6020A	**0.242**	ug	0.020	0.005	5	02/12/19 16:17	02/05/19	
Lead	6020A	**44.3**	ug	0.050	0.005	5	02/12/19 16:17	02/05/19	
Zinc	6020A	**134**	ug	0.50	0.10	5	02/12/19 16:17	02/05/19	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19 08:16
Sample Matrix:	Wipe	**Date Received:**	02/01/19 10:00
Sample Name:	DB3-1	**Basis:**	NA
Lab Code:	K1900914-005		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**1.34**	ug	0.50	0.06	5	02/12/19 16:20	02/05/19	
Cadmium	6020A	**0.259**	ug	0.020	0.005	5	02/12/19 16:20	02/05/19	
Lead	6020A	**23.1**	ug	0.050	0.005	5	02/12/19 16:20	02/05/19	
Zinc	6020A	**1760**	ug	2.5	0.5	25	02/12/19 16:50	02/05/19	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19 09:01
Sample Matrix:	Wipe	**Date Received:**	02/01/19 10:00
Sample Name:	DB3-2	**Basis:**	NA
Lab Code:	K1900914-006		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**1370**	ug	0.50	0.06	5	02/12/19 16:24	02/05/19	
Cadmium	6020A	**0.365**	ug	0.020	0.005	5	02/12/19 16:24	02/05/19	
Lead	6020A	**5.04**	ug	0.050	0.005	5	02/12/19 16:24	02/05/19	
Zinc	6020A	**262**	ug	0.50	0.10	5	02/12/19 16:24	02/05/19	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19 08:41
Sample Matrix:	Wipe	**Date Received:**	02/01/19 10:00
Sample Name:	DB3-3A	**Basis:**	NA
Lab Code:	K1900914-007		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**1.22**	ug	0.50	0.06	5	02/12/19 16:27	02/05/19	
Cadmium	6020A	**1.44**	ug	0.020	0.005	5	02/12/19 16:27	02/05/19	
Lead	6020A	**834**	ug	0.050	0.005	5	02/12/19 16:27	02/05/19	
Zinc	6020A	**1700**	ug	2.5	0.5	25	02/12/19 16:53	02/05/19	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19 08:58
Sample Matrix:	Wipe	**Date Received:**	02/01/19 10:00
Sample Name:	DB3-4	**Basis:**	NA
Lab Code:	K1900914-009		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.40**	ug	0.50	0.06	5	02/12/19 16:40	02/05/19	J
Cadmium	6020A	**0.029**	ug	0.020	0.005	5	02/12/19 16:40	02/05/19	
Lead	6020A	**1.57**	ug	0.050	0.005	5	02/12/19 16:40	02/05/19	
Zinc	6020A	**1690**	ug	2.5	0.5	25	02/12/19 17:26	02/05/19	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19 09:12
Sample Matrix:	Wipe	**Date Received:**	02/01/19 10:00
Sample Name:	DB4-1	**Basis:**	NA
Lab Code:	K1900914-013		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**1.05**	ug	0.50	0.06	5	02/12/19 16:43	02/05/19	
Cadmium	6020A	**0.108**	ug	0.020	0.005	5	02/12/19 16:43	02/05/19	
Lead	6020A	**91.5**	ug	0.050	0.005	5	02/12/19 16:43	02/05/19	
Zinc	6020A	**209**	ug	0.50	0.10	5	02/12/19 16:43	02/05/19	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19 09:16
Sample Matrix:	Wipe	**Date Received:**	02/01/19 10:00
Sample Name:	DB4-3	**Basis:**	NA
Lab Code:	K1900914-015		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.34**	**J**	ug	0.50	0.06	5	02/12/19 16:47	02/05/19	
Cadmium	6020A	**0.012**	**J**	ug	0.020	0.005	5	02/12/19 16:47	02/05/19	
Lead	6020A	**1.01**		ug	0.050	0.005	5	02/12/19 16:47	02/05/19	
Zinc	6020A	**1030**		ug	0.50	0.10	5	02/12/19 16:47	02/05/19	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19 09:31
Sample Matrix:	Soil	**Date Received:**	02/01/19 10:00
Sample Name:	DB4	**Basis:**	Dry
Lab Code:	K1900914-016		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**2.97**	mg/Kg	0.31	0.04	5	02/12/19 17:03	02/04/19	
Cadmium	6020A	**0.463**	mg/Kg	0.012	0.003	5	02/12/19 17:03	02/04/19	
Lead	6020A	**59.1**	mg/Kg	0.031	0.003	5	02/12/19 17:03	02/04/19	
Zinc	6020A	**283**	mg/Kg	0.31	0.06	5	02/12/19 17:03	02/04/19	

General Chemistry

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19 09:31
Sample Matrix:	Soil	**Date Received:**	02/01/19 10:00
Sample Name:	DB4	**Basis:**	As Received
Lab Code:	K1900914-016		

Inorganic Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total	160.3 Modified	**85.5**	Percent	-	-	1	02/04/19 12:51	

QC Summary Forms

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Semivolatile Organic Compounds by GC/MS

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Client: ERM West, Inc **Service Request:** K1900914
Project: Yeon SW Source/0487089.04
Sample Matrix: Wipe

SURROGATE RECOVERY SUMMARY
Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	Terphenyl-d14 30 - 102	p-Terphenyl-d14 30 - 102
DB1-1	K1900914-001	77	
DB1-2	K1900914-002	69	
DB4-2	K1900914-014	61	
Lab Control Sample	KWG1900944-1	76	
Duplicate Lab Control Sample	KWG1900944-2	80	
Method Blank	KWG1900944-3	81	

Client: ERM West, Inc **Service Request:** K1900914
Project: Yeon SW Source/0487089.04
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3541

Sample Name	Lab Code	Terphenyl-d14	p-Terphenyl-d14
			30 - 102
DB4	K1900914-016		84
DB4 MS	KQ1901464-01		87
DB4 DMS	KQ1901464-02		65
Lab Control Sample	KQ1901464-03		71
Method Blank	KQ1901464-04		79

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19
Sample Matrix:	Soil	**Date Received:**	02/01/19
		Date Analyzed:	02/27/19
		Date Extracted:	02/5/19

Duplicate Matrix Spike Summary
Low Level Semivolatile Organic Compounds by GC/MS

Sample Name:	DB4	**Units:**	ug/Kg
Lab Code:	K1900914-016	**Basis:**	Dry
Analysis Method:	8270D		
Prep Method:	EPA 3541		

		Matrix Spike KQ1901464-01				**Duplicate Matrix Spike** KQ1901464-02				
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bis(2-ethylhexyl) Phthalate	950 J	864 J	255	-35 *	914 J	183	-22 #	23-123	6	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/Kg
Lab Code:	KQ1901464-04	**Basis:**	Dry

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	ND U	63	8.9	1	02/27/19 00:44	2/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
p-Terphenyl-d14	79	30 - 102	02/27/19 00:44	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	UG/WIPE
Lab Code:	KWG1900944-3	**Basis:**	Wet

Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3541

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	ND U	2.0	0.18	1	02/26/19 21:54	2/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Terphenyl-d14	81	30 - 102	02/26/19 21:54	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Analyzed:**	02/27/19
Sample Matrix:	Soil	**Date Extracted:**	02/05/19

Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	**Units:**	ug/Kg
Prep Method:	EPA 3541	**Basis:**	Dry
		Analysis Lot:	626584

Lab Control Sample
KQ1901464-03

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Bis(2-ethylhexyl) Phthalate	233	250	93	39-113

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Analyzed:**	02/26/19
Sample Matrix:	Wipe	**Date Extracted:**	02/05/19

Duplicate Lab Control Sample Summary
Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	**Units:**	UG/WIPE
Prep Method:	EPA 3541	**Basis:**	Wet
		Analysis Lot:	KWG1900945

	Lab Control Sample KWG1900944-1			Duplicate Lab Control Sample KWG1900944-2					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bis(2-ethylhexyl) Phthalate	4.95	5.00	99	4.90	5.00	98	39-113	1	40

Semivolatile Organic Compounds by GC

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Client: ERM West, Inc **Service Request:** K1900914
Project: Yeon SW Source/0487089.04
Sample Matrix: Wipe

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Extraction Method: EPA 3546

Sample Name	Lab Code	Decachlorobiphenyl 70 - 130
DB3-3B	K1900914-008	47 D *
DB3-5	K1900914-010	78 D
DB1-4A	K1900914-011	76 D
DB1-5	K1900914-012	83120 D #
Lab Control Sample	KWG1900621-1	80 D
Duplicate Lab Control Sample	KWG1900621-2	83 D
Method Blank	KWG1900621-3	86 D

Client: ERM West, Inc **Service Request:** K1900914
Project: Yeon SW Source/0487089.04
Sample Matrix: Soil

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Extraction Method: EPA 3546

Sample Name	Lab Code	Decachlorobiphenyl 70 - 130
DB4	K1900914-016	98
DB4 MS	KWG1900617-1	90
DB4 DMS	KWG1900617-2	94
Lab Control Sample	KWG1900617-3	80
Method Blank	KWG1900617-4	82

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19
Sample Matrix:	Soil	**Date Received:**	02/01/19
		Date Analyzed:	02/6/19
		Date Extracted:	02/5/19

Duplicate Matrix Spike Summary
Polychlorinated Biphenyls (PCBs)

Sample Name:	DB4	**Units:**	UG/KG
Lab Code:	K1900914-016	**Basis:**	Wet
Analysis Method:	8082A		
Prep Method:	EPA 3546		

		Matrix Spike KWG1900617-1			**Duplicate Matrix Spike** KWG1900617-2					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	ND U	92.2	86.5	107	80.7	80.6	100	70-130	13	40
Aroclor 1260	ND U	135	86.5	156 *	133	80.6	166 *	70-130	1	40

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	UG/KG
Lab Code:	KWG1900617-4	**Basis:**	Wet

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	ND U	10	2.9	1	02/06/19 15:13	2/5/19	
Aroclor 1221	ND U	17	2.9	1	02/06/19 15:13	2/5/19	
Aroclor 1232	ND U	10	2.9	1	02/06/19 15:13	2/5/19	
Aroclor 1242	ND U	10	2.9	1	02/06/19 15:13	2/5/19	
Aroclor 1248	ND U	10	2.9	1	02/06/19 15:13	2/5/19	
Aroclor 1254	ND U	10	2.9	1	02/06/19 15:13	2/5/19	
Aroclor 1260	ND U	10	2.9	1	02/06/19 15:13	2/5/19	
Aroclor 1262	ND U	10	2.9	1	02/06/19 15:13	2/5/19	
Aroclor 1268	ND U	10	2.9	1	02/06/19 15:13	2/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	82	70 - 130	02/06/19 15:13	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	UG/SAMPLE
Lab Code:	KWG1900621-3	**Basis:**	Wet

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3546

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1016	ND U	0.050	0.050	1	02/07/19 17:05	2/5/19	
Aroclor 1221	ND U	0.10	0.10	1	02/07/19 17:05	2/5/19	
Aroclor 1232	ND U	0.10	0.10	1	02/07/19 17:05	2/5/19	
Aroclor 1242	ND U	0.10	0.10	1	02/07/19 17:05	2/5/19	
Aroclor 1248	ND U	0.10	0.10	1	02/07/19 17:05	2/5/19	
Aroclor 1254	ND U	0.10	0.10	1	02/07/19 17:05	2/5/19	
Aroclor 1260	ND U	0.050	0.050	1	02/07/19 17:05	2/5/19	
Aroclor 1262	ND U	0.10	0.10	1	02/07/19 17:05	2/5/19	
Aroclor 1268	ND U	0.10	0.10	1	02/07/19 17:05	2/5/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	86 D	70 - 130	02/06/19 18:52	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Analyzed:**	02/06/19
Sample Matrix:	Soil	**Date Extracted:**	02/05/19

Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs)

Analysis Method:	8082A	**Units:**	UG/KG
Prep Method:	EPA 3546	**Basis:**	Wet
		Analysis Lot:	KWG1900692

Lab Control Sample
KWG1900617-3

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Aroclor 1016	75.8	100	76	70-130
Aroclor 1260	84.9	100	85	70-130

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Analyzed:**	02/07/19
Sample Matrix:	Wipe	**Date Extracted:**	02/05/19

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs)

Analysis Method:	8082A	**Units:**	UG/SAMPLE
Prep Method:	EPA 3546	**Basis:**	Wet
		Analysis Lot:	KWG1900755

	Lab Control Sample KWG1900621-1			**Duplicate Lab Control Sample KWG1900621-2**					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	0.101	0.100	101	0.0910	0.100	91	70-130	10	40
Aroclor 1260	0.111	0.100	111	0.102	0.100	102	70-130	9	40

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	NA
Sample Matrix:	Soil	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	Dry
Lab Code:	KQ1901460-03		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	ND	U	mg/Kg	0.5	0.06	5	02/12/19 16:57	02/04/19	
Cadmium	6020A	ND	U	mg/Kg	0.020	0.005	5	02/12/19 16:57	02/04/19	
Lead	6020A	**0.016**	**J**	mg/Kg	0.05	0.005	5	02/12/19 16:57	02/04/19	
Zinc	6020A	**0.58**		mg/Kg	0.5	0.10	5	02/12/19 16:57	02/04/19	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	NA
Sample Matrix:	Wipe	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1901505-01		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	ND	U	ug	0.5	0.06	5	02/12/19 15:58	02/05/19	
Cadmium	6020A	ND	U	ug	0.020	0.005	5	02/12/19 15:58	02/05/19	
Lead	6020A	**0.010**	**J**	ug	0.05	0.005	5	02/12/19 15:58	02/05/19	
Zinc	6020A	**0.24**	**J**	ug	0.5	0.10	5	02/12/19 15:58	02/05/19	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19
Sample Matrix:	Soil	**Date Received:**	02/01/19
		Date Analyzed:	02/12/19
		Date Extracted:	02/4/19

Matrix Spike Summary
Total Metals

Sample Name:	DB4	**Units:**	mg/Kg
Lab Code:	K1900914-016	**Basis:**	Dry
Analysis Method:	6020A		
Prep Method:	EPA 3050B		

Matrix Spike
KQ1901460-02

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	2.97	66.2	66.4	95	75-125
Cadmium	0.463	7.32	6.64	103	75-125
Lead	59.1	151	66.4	139 N	75-125
Zinc	283	380	66.4	147 #	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project	Yeon SW Source/0487089.04	**Date Collected:**	01/31/19
Sample Matrix:	Soil	**Date Received:**	02/01/19
		Date Analyzed:	02/12/19

Replicate Sample Summary
Total Metals

Sample Name:	DB4	**Units:**	mg/Kg
Lab Code:	K1900914-016	**Basis:**	Dry

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ1901460-01 Result	Average	RPD	RPD Limit
Arsenic	6020A	0.31	0.04	2.97	3.55	3.26	18	20
Cadmium	6020A	0.012	0.003	0.463	0.656	0.560	34 *	20
Lead	6020A	0.031	0.003	59.1	89.2	74.2	41 *	20
Zinc	6020A	0.31	0.06	283	309	296	9	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1900914
Project:	Yeon SW Source/0487089.04	**Date Analyzed:**	02/12/19
Sample Matrix:	Soil		

Lab Control Sample Summary
Total Metals

Units:mg/Kg
Basis: Dry

Lab Control Sample
KQ1901460-04

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6020A	150	161	93	66-122
Cadmium	6020A	202	225	90	70-117
Lead	6020A	101	111	91	71-129
Zinc	6020A	173	207	83	67-125

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QA/QC Report

Client: ERM West, Inc
Project: Yeon SW Source/0487089.04
Sample Matrix: Wipe

Service Request: K1900914
Date Analyzed: 02/12/19

Duplicate Lab Control Sample Summary
Total Metals

Units:ug
Basis:NA

			Lab Control Sample		Duplicate Lab Control Sample					
			KQ1901505-02		KQ1901505-03					
Analyte Name	**Analytical Method**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Arsenic	6020A	98.4	100	98	96.3	100	96	80-120	2	20
Cadmium	6020A	10.5	10.0	105	10.1	10.0	101	80-120	4	20
Lead	6020A	101	100	101	99.5	100	99	80-120	1	20
Zinc	6020A	97.3	100	97	94.3	100	94	80-120	3	20

April 24, 2019 Service Request No:K1901412

Allie Miles
ERM
1001 SW 5th Avenue, Suite 1010
Portland, OR 97204

Laboratory Results for: Univar Yeon SW

Dear Allie,

Enclosed are the results of the sample(s) submitted to our laboratory February 15, 2019
For your reference, these analyses have been assigned our service request number **K1901412.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

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Narrative Documents

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1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

Client: ERM West, Inc
Project: Univar Yeon SW
Sample Matrix: Storm Water

Service Request: K1901412
Date Received: 02/15/2019

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples designated for Tier II data deliverables. When appropriate to the method, method blank results have been reported with each analytical test. Surrogate recoveries have been reported for all applicable organic analyses. Additional quality control analyses reported herein include: Laboratory Duplicate (DUP), Matrix Spike (MS), Matrix/Duplicate Matrix Spike (MS/DMS), Laboratory Control Sample (LCS), and Laboratory/Duplicate Laboratory Control Sample (LCS/DLCS).

Sample Receipt:

Seven storm water samples were received for analysis at ALS Environmental on 02/15/2019. The samples were received in good condition and consistent with the accompanying chain of custody form. The samples were stored in a refrigerator at 4ºC upon receipt at the laboratory.

Semivolatiles by GC/MS:

Method 8270D, Polycyclic Aromatic Hydrocarbons by GC/MS SIM 02/26/2019: The spike recoveries of Benzo(a)pyrene (74, 75-131) and Pyrene (69, 72-127) for Laboratory Control Sample (LCS) KQ1902177-01 were outside the lower control criterion. Recovery in the Duplicate Laboratory Control Sample (DLCS) was acceptable. The analytes in question were detected in the associated field samples. The error associated with reduced recovery indicated a potential low bias. The data was flagged to indicate the problem.

Semivoa GC:

Method 8081B, Organochlorine Pesticides 02/21/19: Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

ALS Kelso cannot report Method 8081B without Client approval as of 3/4/19 due to high failing PT samples. Since the failure was high, it implies a potential high bias. The results have been submitted as disscused.

Method 8082A, Polychlorinated Biphenyls (PCBs) 02/26/19: The recovery of Aroclor 1260 in Laboratory Control Sample KWG1900811-1 was outside the upper control limits listed in the results summary. The limits are default values temporarily in use until sufficient data points are generated to calculate statistical control limits. Based on the method and historic data, the recoveries observed were in the range expected for this procedure. The analytes in question were not detected in the associated field samples. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

Method SM 2540 D, 02/20/2019: The Relative Percent Difference (RPD) criterion for the replicate analysis of Total Suspended Solids in sample STM-1_SW20190214 was not applicable because the analyte concentration was not significantly greater than the Method Reporting Limit (MRL). Analytical values derived from measurements close to the detection limit are not subject to the same accuracy and precision criteria as results derived from measurements higher on the calibration range for the method.

Volatiles by GC/MS:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 04/24/2019

SAMPLE DETECTION SUMMARY

CLIENT ID: STM-1_SW20190214			Lab ID: K1901412-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	9.0			5.0	mg/L	SM 2540 D
Arsenic	0.26	J	0.09	0.50	ug/L	6020A
Cadmium	0.079		0.008	0.020	ug/L	6020A
Copper	4.11		0.05	0.10	ug/L	6020A
Lead	1.91		0.006	0.020	ug/L	6020A
Manganese	8.83		0.04	0.20	ug/L	6020A
Nickel	0.84		0.04	0.20	ug/L	6020A
Zinc	92.5		0.5	2.0	ug/L	6020A
Benz(a)anthracene	0.0043	J	0.0028	0.021	ug/L	8270D
Benzo(b)fluoranthene	0.0091	J	0.0044	0.021	ug/L	8270D
Chrysene	0.0048	J	0.0037	0.021	ug/L	8270D
Fluoranthene	0.021		0.011	0.021	ug/L	8270D
Indeno(1,2,3-cd)pyrene	0.0043	J	0.0028	0.021	ug/L	8270D
Pyrene	0.024		0.0057	0.021	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.99		0.13	0.95	ug/L	8270D
Butyl Benzyl Phthalate	0.067	J	0.021	0.19	ug/L	8270D
Diethyl Phthalate	0.33		0.015	0.19	ug/L	8270D
Dimethyl Phthalate	0.077	J	0.021	0.19	ug/L	8270D
Di-n-butyl Phthalate	0.63		0.023	0.19	ug/L	8270D
Trichloroethene (TCE)	3.2		0.10	0.50	ug/L	8260C
Tetrachloroethene (PCE)	4.7		0.099	0.50	ug/L	8260C

CLIENT ID: CB4A-SW_20190214			Lab ID: K1901412-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	18.0			5.0	mg/L	SM 2540 D
Arsenic	0.49	J	0.09	0.50	ug/L	6020A
Cadmium	0.146		0.008	0.020	ug/L	6020A
Copper	4.55		0.05	0.10	ug/L	6020A
Lead	6.92		0.006	0.020	ug/L	6020A
Manganese	16.2		0.04	0.20	ug/L	6020A
Nickel	1.18		0.04	0.20	ug/L	6020A
Zinc	312		0.5	2.0	ug/L	6020A
Benz(a)anthracene	0.019	J	0.0028	0.021	ug/L	8270D
Benzo(a)pyrene	0.017	J	0.0047	0.021	ug/L	8270D
Benzo(b)fluoranthene	0.029		0.0044	0.021	ug/L	8270D
Chrysene	0.029		0.0037	0.021	ug/L	8270D
Fluoranthene	0.076		0.011	0.021	ug/L	8270D
Indeno(1,2,3-cd)pyrene	0.013	J	0.0028	0.021	ug/L	8270D
Pyrene	0.052		0.0057	0.021	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	3.5		0.13	0.95	ug/L	8270D
Butyl Benzyl Phthalate	0.10	J	0.021	0.19	ug/L	8270D
Diethyl Phthalate	0.24		0.015	0.19	ug/L	8270D

SAMPLE DETECTION SUMMARY

CLIENT ID: CB4A-SW_20190214			Lab ID: K1901412-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Dimethyl Phthalate	0.098	J	0.021	0.19	ug/L	8270D
Di-n-butyl Phthalate	0.13	J	0.023	0.19	ug/L	8270D
Di-n-octyl Phthalate	0.17	J	0.033	0.19	ug/L	8270D

CLIENT ID: CB6A_SW_20190214			Lab ID: K1901412-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	14.0			5.0	mg/L	SM 2540 D
Arsenic	0.19	J	0.09	0.50	ug/L	6020A
Cadmium	0.052		0.008	0.020	ug/L	6020A
Copper	3.58		0.05	0.10	ug/L	6020A
Lead	1.87		0.006	0.020	ug/L	6020A
Manganese	16.8		0.04	0.20	ug/L	6020A
Nickel	0.71		0.04	0.20	ug/L	6020A
Zinc	215		0.5	2.0	ug/L	6020A
Benz(a)anthracene	0.018	J	0.0028	0.021	ug/L	8270D
Benzo(a)pyrene	0.029		0.0047	0.021	ug/L	8270D
Benzo(b)fluoranthene	0.039		0.0044	0.021	ug/L	8270D
Chrysene	0.031		0.0037	0.021	ug/L	8270D
Fluoranthene	0.041		0.011	0.021	ug/L	8270D
Indeno(1,2,3-cd)pyrene	0.023		0.0028	0.021	ug/L	8270D
Pyrene	0.042		0.0057	0.021	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.27	J	0.13	0.95	ug/L	8270D
Butyl Benzyl Phthalate	0.040	J	0.021	0.19	ug/L	8270D
Diethyl Phthalate	0.13	J	0.015	0.19	ug/L	8270D
Dimethyl Phthalate	0.033	J	0.021	0.19	ug/L	8270D
Di-n-butyl Phthalate	0.061	J	0.023	0.19	ug/L	8270D

CLIENT ID: E1_SW_20190214			Lab ID: K1901412-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	19.0			5.0	mg/L	SM 2540 D
Arsenic	0.53		0.09	0.50	ug/L	6020A
Cadmium	0.054		0.008	0.020	ug/L	6020A
Copper	4.69		0.05	0.10	ug/L	6020A
Lead	3.22		0.006	0.020	ug/L	6020A
Manganese	9.86		0.04	0.20	ug/L	6020A
Nickel	1.84		0.04	0.20	ug/L	6020A
Zinc	90.9		0.5	2.0	ug/L	6020A
Benz(a)anthracene	0.037		0.0028	0.021	ug/L	8270D
Benzo(a)pyrene	0.048		0.0047	0.021	ug/L	8270D
Benzo(b)fluoranthene	0.088		0.0044	0.021	ug/L	8270D
Chrysene	0.037		0.0037	0.021	ug/L	8270D
Fluoranthene	0.15		0.011	0.021	ug/L	8270D

SAMPLE DETECTION SUMMARY

CLIENT ID: E1_SW_20190214			Lab ID: K1901412-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Indeno(1,2,3-cd)pyrene	0.046		0.0028	0.021	ug/L	8270D
Pyrene	0.087		0.0057	0.021	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.65	J	0.13	0.95	ug/L	8270D
Butyl Benzyl Phthalate	0.056	J	0.021	0.19	ug/L	8270D
Diethyl Phthalate	0.18	J	0.015	0.19	ug/L	8270D
Dimethyl Phthalate	0.059	J	0.021	0.19	ug/L	8270D
Di-n-butyl Phthalate	0.61		0.023	0.19	ug/L	8270D
Di-n-octyl Phthalate	0.15	J	0.033	0.19	ug/L	8270D
Trichloroethene (TCE)	0.62		0.10	0.50	ug/L	8260C
Tetrachloroethene (PCE)	0.49	J	0.099	0.50	ug/L	8260C

CLIENT ID: CB2E_SW_20190214			Lab ID: K1901412-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	57.5			5.0	mg/L	SM 2540 D
Arsenic	1.10		0.09	0.50	ug/L	6020A
Cadmium	0.262		0.008	0.020	ug/L	6020A
Copper	10.3		0.05	0.10	ug/L	6020A
Lead	11.9		0.006	0.020	ug/L	6020A
Manganese	51.1		0.04	0.20	ug/L	6020A
Nickel	2.16		0.04	0.20	ug/L	6020A
Zinc	268		0.5	2.0	ug/L	6020A
Benz(a)anthracene	0.013	J	0.0028	0.021	ug/L	8270D
Benzo(a)pyrene	0.020	J	0.0047	0.021	ug/L	8270D
Benzo(b)fluoranthene	0.033		0.0044	0.021	ug/L	8270D
Chrysene	0.026		0.0037	0.021	ug/L	8270D
Fluoranthene	0.060		0.011	0.021	ug/L	8270D
Indeno(1,2,3-cd)pyrene	0.018	J	0.0028	0.021	ug/L	8270D
Pyrene	0.079		0.0057	0.021	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	3.7		0.13	0.95	ug/L	8270D
Butyl Benzyl Phthalate	0.15	J	0.021	0.19	ug/L	8270D
Diethyl Phthalate	0.20		0.015	0.19	ug/L	8270D
Dimethyl Phthalate	0.081	J	0.021	0.19	ug/L	8270D
Di-n-butyl Phthalate	0.13	J	0.023	0.19	ug/L	8270D
Di-n-octyl Phthalate	0.21		0.033	0.19	ug/L	8270D

CLIENT ID: CB5A__SW_20190214			Lab ID: K1901412-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	27.5			5.0	mg/L	SM 2540 D
Arsenic	0.18	J	0.09	0.50	ug/L	6020A
Cadmium	0.066		0.008	0.020	ug/L	6020A
Copper	3.99		0.05	0.10	ug/L	6020A
Lead	1.92		0.006	0.020	ug/L	6020A

SAMPLE DETECTION SUMMARY

CLIENT ID: CB5A__SW_20190214			Lab ID: K1901412-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Manganese	15.6		0.04	0.20	ug/L	6020A
Nickel	1.03		0.04	0.20	ug/L	6020A
Zinc	68.7		0.5	2.0	ug/L	6020A
Benz(a)anthracene	0.012	J	0.0028	0.021	ug/L	8270D
Benzo(a)pyrene	0.017	J	0.0047	0.021	ug/L	8270D
Benzo(b)fluoranthene	0.029		0.0044	0.021	ug/L	8270D
Chrysene	0.021	J	0.0037	0.021	ug/L	8270D
Fluoranthene	0.060		0.011	0.021	ug/L	8270D
Indeno(1,2,3-cd)pyrene	0.014	J	0.0028	0.021	ug/L	8270D
Pyrene	0.096		0.0057	0.021	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.53	J	0.13	0.95	ug/L	8270D
Butyl Benzyl Phthalate	0.045	J	0.021	0.19	ug/L	8270D
Diethyl Phthalate	0.13	J	0.015	0.19	ug/L	8270D
Dimethyl Phthalate	0.040	J	0.021	0.19	ug/L	8270D
Di-n-butyl Phthalate	0.12	J	0.023	0.19	ug/L	8270D
Di-n-octyl Phthalate	0.17	J	0.033	0.19	ug/L	8270D
4,4'-DDE	0.96	JP	0.92	2.0	ng/L	8081B

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: ERM West, Inc **Service Request:**K1901412
Project: Univar Yeon SW

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K1901412-001	STM-1_SW20190214	2/14/2019	1205
K1901412-002	CB4A-SW_20190214	2/14/2019	1255
K1901412-003	CB6A_SW_20190214	2/14/2019	1320
K1901412-004	E1_SW_20190214	2/14/2019	1225
K1901412-005	CB2E_SW_20190214	2/14/2019	1110
K1901412-006	CB5A__SW_20190214	2/14/2019	1145
K1901412-007	Trip Blank	2/14/2019	

ALS Environmental

CHAIN OF CUSTODY

96745

003

SR# K190412

COC Set 1 of 1

COC#

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Univar yeon SW
Project Number:
Project Manager:
Company: ERM
Address: 1050 SW 6th Ave Ste 1650
Phone #: 425 753 0765
Email: Allie.Miles@ERM
Sampler Signature:
Sampler Printed Name: melody kienekar, Scott terranova

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	8081B / Pest OC ULL (7D)	8082A / PCB LL (7D)	8270D / PAH SIM (7D)	8270D / SVO LL (7D)	SM 2540 D / TSS (7D)	8260C / VOC FP (14D)	6020A / Metals T (180D)	1	2	3	4	5	Remarks
1. STM-1_SW20190214		2/14/19	1205	H_2O	13	X	X	X	X	X	X	X						
2. CB4A-SW_20190214		2/14/19	1255			X	X	X	X	X	X	X						
3. CB6A-SW_20190214		2/14/19	1320			X	X	X	X	X	X	X						
4. E1_SW_20190214		2/14/19	1225			X	X	X	X	X	X	X						
5. CB2A-SW_20190214		2/14/19	1110			X	X	X	X	X	X	X						
6. CB5A_SW_20190214		2/14/19	1145			X	X	X	X	X	X	X						
7.																		
8.																		
9.																		
10.																		

Report Requirements

- ___ I. Routine Report: Method Blank, Surrogate, as required
- ___ II. Report Dup., MS, MSD as required
- ___ III. CLP Like Summary (no raw data)
- ___ IV. Data Validation Report
- X V. EDD EQuIS 4File

Invoice Information

P.O.#
Bill To: ERM
Univar yeon
SW source

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Signature K Morrow	Signature	Signature	Signature	Signature
Printed Name melody kien	Printed Name ALS	Printed Name	Printed Name ALS	Printed Name	Printed Name
Firm ERM	Firm 2/15/ 0817	Firm	Firm 2/15/19 1130	Firm	Firm
Date/Time 2/15/19 08:17	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

PC KV

Cooler Receipt and Preservation Form

Client ERM Service Request *K19* 1014 12

Received: 2/15/19 Opened: 2/15/19 By: [illegible] Unloaded: 2/15/19 By: [illegible]

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Raw Cooler Temp	Corrected Cooler Temp	Raw Temp Blank	Corrected Temp Blank	Corr. Factor	Thermometer ID	Cooler/COC ID NA	Tracking Number NA	Filed
5.2	5.4	4.5	4.7	+0.2	374			
3.1	1.9	4.1	3.9	-0.2	356			
3.2	3.1	5.2	5.1	-0.1	394			
0.2	0.2	1.7	1.7	Ø	349			

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N

   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, & Resolutions: _____

7/25/16 ***Page*** _____ ***of*** _____

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Sample Results

ALS Environmental—Kelso Laboratory
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Volatile Organic Compounds by GC/MS

ALS Environmental—Kelso Laboratory
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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 12:05
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	STM-1SW20190214	**Units:**	ug/L
Lab Code:	K1901412-001	**Basis:**	NA

Volatile Organic Compounds

Analysis Method: 8260C
Prep Method: EPA 5030B

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Vinyl Chloride	ND U	0.50	0.075	1	02/21/19 16:11	2/21/19	
Chloroform	ND U	0.50	0.072	1	02/21/19 16:11	2/21/19	
Trichloroethene (TCE)	**3.2**	0.50	0.10	1	02/21/19 16:11	2/21/19	
Tetrachloroethene (PCE)	**4.7**	0.50	0.099	1	02/21/19 16:11	2/21/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Dibromofluoromethane	112	73 - 122	02/21/19 16:11	
Toluene-d8	111	65 - 144	02/21/19 16:11	
4-Bromofluorobenzene	107	68 - 117	02/21/19 16:11	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 12:55
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB4A-SW20190214	**Units:**	ug/L
Lab Code:	K1901412-002	**Basis:**	NA

Volatile Organic Compounds

Analysis Method: 8260C
Prep Method: EPA 5030B

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Vinyl Chloride	ND	U	0.50	0.075	1	02/21/19 16:37	2/21/19	
Chloroform	ND	U	0.50	0.072	1	02/21/19 16:37	2/21/19	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	02/21/19 16:37	2/21/19	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	02/21/19 16:37	2/21/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Dibromofluoromethane	113	73 - 122	02/21/19 16:37	
Toluene-d8	111	65 - 144	02/21/19 16:37	
4-Bromofluorobenzene	103	68 - 117	02/21/19 16:37	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 13:20
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB6ASW20190214	**Units:**	ug/L
Lab Code:	K1901412-003	**Basis:**	NA

Volatile Organic Compounds

Analysis Method: 8260C
Prep Method: EPA 5030B

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Vinyl Chloride	ND U	0.50	0.075	1	02/21/19 17:04	2/21/19	
Chloroform	ND U	0.50	0.072	1	02/21/19 17:04	2/21/19	
Trichloroethene (TCE)	ND U	0.50	0.10	1	02/21/19 17:04	2/21/19	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	02/21/19 17:04	2/21/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Dibromofluoromethane	114	73 - 122	02/21/19 17:04	
Toluene-d8	112	65 - 144	02/21/19 17:04	
4-Bromofluorobenzene	107	68 - 117	02/21/19 17:04	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 12:25
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	E1SW20190214	**Units:**	ug/L
Lab Code:	K1901412-004	**Basis:**	NA

Volatile Organic Compounds

Analysis Method: 8260C
Prep Method: EPA 5030B

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Vinyl Chloride	ND	U	0.50	0.075	1	02/21/19 17:30	2/21/19	
Chloroform	ND	U	0.50	0.072	1	02/21/19 17:30	2/21/19	
Trichloroethene (TCE)	**0.62**		0.50	0.10	1	02/21/19 17:30	2/21/19	
Tetrachloroethene (PCE)	**0.49**	**J**	0.50	0.099	1	02/21/19 17:30	2/21/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Dibromofluoromethane	114	73 - 122	02/21/19 17:30	
Toluene-d8	113	65 - 144	02/21/19 17:30	
4-Bromofluorobenzene	106	68 - 117	02/21/19 17:30	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 11:10
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB2ESW20190214	**Units:**	ug/L
Lab Code:	K1901412-005	**Basis:**	NA

Volatile Organic Compounds

Analysis Method: 8260C
Prep Method: EPA 5030B

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Vinyl Chloride	ND	U	0.50	0.075	1	02/21/19 17:56	2/21/19	
Chloroform	ND	U	0.50	0.072	1	02/21/19 17:56	2/21/19	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	02/21/19 17:56	2/21/19	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	02/21/19 17:56	2/21/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Dibromofluoromethane	113	73 - 122	02/21/19 17:56	
Toluene-d8	112	65 - 144	02/21/19 17:56	
4-Bromofluorobenzene	107	68 - 117	02/21/19 17:56	

ALS Group USA, Corp.
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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 11:45
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB5ASW20190214	**Units:**	ug/L
Lab Code:	K1901412-006	**Basis:**	NA

Volatile Organic Compounds

Analysis Method: 8260C
Prep Method: EPA 5030B

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Vinyl Chloride	ND	U	0.50	0.075	1	02/21/19 18:23	2/21/19	
Chloroform	ND	U	0.50	0.072	1	02/21/19 18:23	2/21/19	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	02/21/19 18:23	2/21/19	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	02/21/19 18:23	2/21/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Dibromofluoromethane	117	73 - 122	02/21/19 18:23	
Toluene-d8	112	65 - 144	02/21/19 18:23	
4-Bromofluorobenzene	109	68 - 117	02/21/19 18:23	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	K1901412-007	**Basis:**	NA

Volatile Organic Compounds

Analysis Method: 8260C
Prep Method: EPA 5030B

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Vinyl Chloride	ND	U	0.50	0.075	1	02/21/19 15:19	2/21/19	
Chloroform	ND	U	0.50	0.072	1	02/21/19 15:19	2/21/19	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	02/21/19 15:19	2/21/19	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	02/21/19 15:19	2/21/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Dibromofluoromethane	113	73 - 122	02/21/19 15:19	
Toluene-d8	112	65 - 144	02/21/19 15:19	
4-Bromofluorobenzene	106	68 - 117	02/21/19 15:19	

Semivolatile Organic Compounds by GC/MS

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 12:05
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	STM-1_SW20190214	**Units:**	ug/L
Lab Code:	K1901412-001	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benz(a)anthracene	**0.0043**	**J**	0.021	0.0028	1	02/26/19 12:29	2/21/19	
Benzo(a)pyrene	ND	U	0.021	0.0047	1	02/26/19 12:29	2/21/19	*
Benzo(b)fluoranthene	**0.0091**	**J**	0.021	0.0044	1	02/26/19 12:29	2/21/19	
Chrysene	**0.0048**	**J**	0.021	0.0037	1	02/26/19 12:29	2/21/19	
Fluoranthene	**0.021**		0.021	0.011	1	02/26/19 12:29	2/21/19	
Indeno(1,2,3-cd)pyrene	**0.0043**	**J**	0.021	0.0028	1	02/26/19 12:29	2/21/19	
Pyrene	**0.024**		0.021	0.0057	1	02/26/19 12:29	2/21/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	103	42 - 133	02/26/19 12:29	
Fluorene-d10	74	42 - 131	02/26/19 12:29	
Terphenyl-d14	94	32 - 129	02/26/19 12:29	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 12:55
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB4A-SW_20190214	**Units:**	ug/L
Lab Code:	K1901412-002	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benz(a)anthracene	**0.019**	**J**	0.021	0.0028	1	02/26/19 12:58	2/21/19	
Benzo(a)pyrene	**0.017**	**J**	0.021	0.0047	1	02/26/19 12:58	2/21/19	*
Benzo(b)fluoranthene	**0.029**		0.021	0.0044	1	02/26/19 12:58	2/21/19	
Chrysene	**0.029**		0.021	0.0037	1	02/26/19 12:58	2/21/19	
Fluoranthene	**0.076**		0.021	0.011	1	02/26/19 12:58	2/21/19	
Indeno(1,2,3-cd)pyrene	**0.013**	**J**	0.021	0.0028	1	02/26/19 12:58	2/21/19	
Pyrene	**0.052**		0.021	0.0057	1	02/26/19 12:58	2/21/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	102	42 - 133	02/26/19 12:58	
Fluorene-d10	78	42 - 131	02/26/19 12:58	
Terphenyl-d14	96	32 - 129	02/26/19 12:58	

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 13:20
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB6A_SW_20190214	**Units:**	ug/L
Lab Code:	K1901412-003	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benz(a)anthracene	**0.018**	**J**	0.021	0.0028	1	02/26/19 13:55	2/21/19	
Benzo(a)pyrene	**0.029**		0.021	0.0047	1	02/26/19 13:55	2/21/19	*
Benzo(b)fluoranthene	**0.039**		0.021	0.0044	1	02/26/19 13:55	2/21/19	
Chrysene	**0.031**		0.021	0.0037	1	02/26/19 13:55	2/21/19	
Fluoranthene	**0.041**		0.021	0.011	1	02/26/19 13:55	2/21/19	
Indeno(1,2,3-cd)pyrene	**0.023**		0.021	0.0028	1	02/26/19 13:55	2/21/19	
Pyrene	**0.042**		0.021	0.0057	1	02/26/19 13:55	2/21/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	104	42 - 133	02/26/19 13:55	
Fluorene-d10	80	42 - 131	02/26/19 13:55	
Terphenyl-d14	99	32 - 129	02/26/19 13:55	

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 12:25
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	E1_SW_20190214	**Units:**	ug/L
Lab Code:	K1901412-004	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benz(a)anthracene	**0.037**	0.021	0.0028	1	02/26/19 13:27	2/21/19	
Benzo(a)pyrene	**0.048**	0.021	0.0047	1	02/26/19 13:27	2/21/19	*
Benzo(b)fluoranthene	**0.088**	0.021	0.0044	1	02/26/19 13:27	2/21/19	
Chrysene	**0.037**	0.021	0.0037	1	02/26/19 13:27	2/21/19	
Fluoranthene	**0.15**	0.021	0.011	1	02/26/19 13:27	2/21/19	
Indeno(1,2,3-cd)pyrene	**0.046**	0.021	0.0028	1	02/26/19 13:27	2/21/19	
Pyrene	**0.087**	0.021	0.0057	1	02/26/19 13:27	2/21/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	100	42 - 133	02/26/19 13:27	
Fluorene-d10	76	42 - 131	02/26/19 13:27	
Terphenyl-d14	94	32 - 129	02/26/19 13:27	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 11:10
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB2E_SW_20190214	**Units:**	ug/L
Lab Code:	K1901412-005	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benz(a)anthracene	**0.013**	**J**	0.021	0.0028	1	02/26/19 14:24	2/21/19	
Benzo(a)pyrene	**0.020**	**J**	0.021	0.0047	1	02/26/19 14:24	2/21/19	*
Benzo(b)fluoranthene	**0.033**		0.021	0.0044	1	02/26/19 14:24	2/21/19	
Chrysene	**0.026**		0.021	0.0037	1	02/26/19 14:24	2/21/19	
Fluoranthene	**0.060**		0.021	0.011	1	02/26/19 14:24	2/21/19	
Indeno(1,2,3-cd)pyrene	**0.018**	**J**	0.021	0.0028	1	02/26/19 14:24	2/21/19	
Pyrene	**0.079**		0.021	0.0057	1	02/26/19 14:24	2/21/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	91	42 - 133	02/26/19 14:24	
Fluorene-d10	79	42 - 131	02/26/19 14:24	
Terphenyl-d14	93	32 - 129	02/26/19 14:24	

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 11:45
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB5A__SW_20190214	**Units:**	ug/L
Lab Code:	K1901412-006	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benz(a)anthracene	**0.012**	**J**	0.021	0.0028	1	02/26/19 14:53	2/21/19	
Benzo(a)pyrene	**0.017**	**J**	0.021	0.0047	1	02/26/19 14:53	2/21/19	*
Benzo(b)fluoranthene	**0.029**		0.021	0.0044	1	02/26/19 14:53	2/21/19	
Chrysene	**0.021**	**J**	0.021	0.0037	1	02/26/19 14:53	2/21/19	
Fluoranthene	**0.060**		0.021	0.011	1	02/26/19 14:53	2/21/19	
Indeno(1,2,3-cd)pyrene	**0.014**	**J**	0.021	0.0028	1	02/26/19 14:53	2/21/19	
Pyrene	**0.096**		0.021	0.0057	1	02/26/19 14:53	2/21/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	94	42 - 133	02/26/19 14:53	
Fluorene-d10	83	42 - 131	02/26/19 14:53	
Terphenyl-d14	98	32 - 129	02/26/19 14:53	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 12:05
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	STM-1_SW20190214	**Units:**	ug/L
Lab Code:	K1901412-001	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.99**		0.95	0.13	1	02/23/19 16:40	2/19/19	
Butyl Benzyl Phthalate	**0.067**	**J**	0.19	0.021	1	02/23/19 16:40	2/19/19	
Diethyl Phthalate	**0.33**		0.19	0.015	1	02/23/19 16:40	2/19/19	
Dimethyl Phthalate	**0.077**	**J**	0.19	0.021	1	02/23/19 16:40	2/19/19	
Di-n-butyl Phthalate	**0.63**		0.19	0.023	1	02/23/19 16:40	2/19/19	
Di-n-octyl Phthalate	ND	U	0.19	0.033	1	02/23/19 16:40	2/19/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	50	35 - 105	02/23/19 16:40	
Nitrobenzene-d5	63	40 - 117	02/23/19 16:40	
p-Terphenyl-d14	68	48 - 109	02/23/19 16:40	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 12:55
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB4A-SW_20190214	**Units:**	ug/L
Lab Code:	K1901412-002	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**3.5**		0.95	0.13	1	02/23/19 17:08	2/19/19	
Butyl Benzyl Phthalate	**0.10**	**J**	0.19	0.021	1	02/23/19 17:08	2/19/19	
Diethyl Phthalate	**0.24**		0.19	0.015	1	02/23/19 17:08	2/19/19	
Dimethyl Phthalate	**0.098**	**J**	0.19	0.021	1	02/23/19 17:08	2/19/19	
Di-n-butyl Phthalate	**0.13**	**J**	0.19	0.023	1	02/23/19 17:08	2/19/19	
Di-n-octyl Phthalate	**0.17**	**J**	0.19	0.033	1	02/23/19 17:08	2/19/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	55	35 - 105	02/23/19 17:08	
Nitrobenzene-d5	64	40 - 117	02/23/19 17:08	
p-Terphenyl-d14	68	48 - 109	02/23/19 17:08	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 13:20
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB6A_SW_20190214	**Units:**	ug/L
Lab Code:	K1901412-003	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.27**	**J**	0.95	0.13	1	02/23/19 18:05	2/19/19	
Butyl Benzyl Phthalate	**0.040**	**J**	0.19	0.021	1	02/23/19 18:05	2/19/19	
Diethyl Phthalate	**0.13**	**J**	0.19	0.015	1	02/23/19 18:05	2/19/19	
Dimethyl Phthalate	**0.033**	**J**	0.19	0.021	1	02/23/19 18:05	2/19/19	
Di-n-butyl Phthalate	**0.061**	**J**	0.19	0.023	1	02/23/19 18:05	2/19/19	
Di-n-octyl Phthalate	ND	U	0.19	0.033	1	02/23/19 18:05	2/19/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	50	35 - 105	02/23/19 18:05	
Nitrobenzene-d5	60	40 - 117	02/23/19 18:05	
p-Terphenyl-d14	67	48 - 109	02/23/19 18:05	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 12:25
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	E1_SW_20190214	**Units:**	ug/L
Lab Code:	K1901412-004	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.65**	**J**	0.95	0.13	1	02/23/19 17:36	2/19/19	
Butyl Benzyl Phthalate	**0.056**	**J**	0.19	0.021	1	02/23/19 17:36	2/19/19	
Diethyl Phthalate	**0.18**	**J**	0.19	0.015	1	02/23/19 17:36	2/19/19	
Dimethyl Phthalate	**0.059**	**J**	0.19	0.021	1	02/23/19 17:36	2/19/19	
Di-n-butyl Phthalate	**0.61**		0.19	0.023	1	02/23/19 17:36	2/19/19	
Di-n-octyl Phthalate	**0.15**	**J**	0.19	0.033	1	02/23/19 17:36	2/19/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	53	35 - 105	02/23/19 17:36	
Nitrobenzene-d5	65	40 - 117	02/23/19 17:36	
p-Terphenyl-d14	73	48 - 109	02/23/19 17:36	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 11:10
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB2E_SW_20190214	**Units:**	ug/L
Lab Code:	K1901412-005	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**3.7**		0.95	0.13	1	02/23/19 19:30	2/19/19	
Butyl Benzyl Phthalate	**0.15**	**J**	0.19	0.021	1	02/23/19 19:30	2/19/19	
Diethyl Phthalate	**0.20**		0.19	0.015	1	02/23/19 19:30	2/19/19	
Dimethyl Phthalate	**0.081**	**J**	0.19	0.021	1	02/23/19 19:30	2/19/19	
Di-n-butyl Phthalate	**0.13**	**J**	0.19	0.023	1	02/23/19 19:30	2/19/19	
Di-n-octyl Phthalate	**0.21**		0.19	0.033	1	02/23/19 19:30	2/19/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	57	35 - 105	02/23/19 19:30	
Nitrobenzene-d5	67	40 - 117	02/23/19 19:30	
p-Terphenyl-d14	73	48 - 109	02/23/19 19:30	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 11:45
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB5A__SW_20190214	**Units:**	ug/L
Lab Code:	K1901412-006	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.53**	**J**	0.95	0.13	1	02/23/19 18:33	2/19/19	
Butyl Benzyl Phthalate	**0.045**	**J**	0.19	0.021	1	02/23/19 18:33	2/19/19	
Diethyl Phthalate	**0.13**	**J**	0.19	0.015	1	02/23/19 18:33	2/19/19	
Dimethyl Phthalate	**0.040**	**J**	0.19	0.021	1	02/23/19 18:33	2/19/19	
Di-n-butyl Phthalate	**0.12**	**J**	0.19	0.023	1	02/23/19 18:33	2/19/19	
Di-n-octyl Phthalate	**0.17**	**J**	0.19	0.033	1	02/23/19 18:33	2/19/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	57	35 - 105	02/23/19 18:33	
Nitrobenzene-d5	67	40 - 117	02/23/19 18:33	
p-Terphenyl-d14	71	48 - 109	02/23/19 18:33	

Semivolatile Organic Compounds by GC

ALS Environmental—Kelso Laboratory
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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 12:05
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	STM-1SW20190214	**Units:**	ng/L
Lab Code:	K1901412-001	**Basis:**	NA

Organochlorine Pesticides

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Heptachlor Epoxide	ND	U	2.0	0.58	1	02/21/19 15:26	2/19/19	
Dieldrin	ND	U	2.0	0.88	1	02/21/19 15:26	2/19/19	
4,4'-DDE	ND	Ui	2.0	1.2	1	02/21/19 15:26	2/19/19	
4,4'-DDD	ND	U	2.0	1.2	1	02/21/19 15:26	2/19/19	
4,4'-DDT	ND	Ui	23	23	1	02/21/19 15:26	2/19/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	119	70 - 130	02/21/19 15:26	
Decachlorobiphenyl	116	70 - 130	02/21/19 15:26	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 12:55
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB4A-SW20190214	**Units:**	ng/L
Lab Code:	K1901412-002	**Basis:**	NA

Organochlorine Pesticides

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Heptachlor Epoxide	ND	U	2.0	0.58	1	02/21/19 15:55	2/19/19	
Dieldrin	ND	U	2.0	0.88	1	02/21/19 15:55	2/19/19	
4,4'-DDE	ND	Ui	2.0	1.9	1	02/21/19 15:55	2/19/19	
4,4'-DDD	ND	U	2.0	1.2	1	02/21/19 15:55	2/19/19	
4,4'-DDT	ND	Ui	130	130	5	02/21/19 18:22	2/19/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	104	70 - 130	02/21/19 15:55	
Decachlorobiphenyl	111	70 - 130	02/21/19 15:55	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 13:20
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB6ASW20190214	**Units:**	ng/L
Lab Code:	K1901412-003	**Basis:**	NA

Organochlorine Pesticides

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Heptachlor Epoxide	ND	U	2.0	0.58	1	02/21/19 16:25	2/19/19	
Dieldrin	ND	U	2.0	0.88	1	02/21/19 16:25	2/19/19	
4,4'-DDE	ND	U	2.0	0.92	1	02/21/19 16:25	2/19/19	
4,4'-DDD	ND	U	2.0	1.2	1	02/21/19 16:25	2/19/19	
4,4'-DDT	ND	Ui	5.1	5.1	1	02/21/19 16:25	2/19/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	103	70 - 130	02/21/19 16:25	
Decachlorobiphenyl	100	70 - 130	02/21/19 16:25	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 12:25
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	E1SW20190214	**Units:**	ng/L
Lab Code:	K1901412-004	**Basis:**	NA

Organochlorine Pesticides

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Heptachlor Epoxide	ND	U	2.0	0.58	1	02/21/19 16:54	2/19/19	
Dieldrin	ND	U	2.0	0.88	1	02/21/19 16:54	2/19/19	
4,4'-DDE	ND	Ui	2.0	1.4	1	02/21/19 16:54	2/19/19	
4,4'-DDD	ND	U	2.0	1.2	1	02/21/19 16:54	2/19/19	
4,4'-DDT	ND	Ui	23	23	1	02/21/19 16:54	2/19/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	115	70 - 130	02/21/19 16:54	
Decachlorobiphenyl	120	70 - 130	02/21/19 16:54	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 11:10
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB2ESW20190214	**Units:**	ng/L
Lab Code:	K1901412-005	**Basis:**	NA

Organochlorine Pesticides

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Heptachlor Epoxide	ND	U	2.0	0.58	1	02/21/19 17:23	2/19/19	
Dieldrin	ND	U	2.0	0.88	1	02/21/19 17:23	2/19/19	
4,4'-DDE	ND	Ui	2.0	1.9	1	02/21/19 17:23	2/19/19	
4,4'-DDD	ND	U	2.0	1.2	1	02/21/19 17:23	2/19/19	
4,4'-DDT	ND	Ui	110	110	5	02/22/19 14:05	2/19/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	109	70 - 130	02/21/19 17:23	
Decachlorobiphenyl	103	70 - 130	02/21/19 17:23	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 11:45
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB5ASW20190214	**Units:**	ng/L
Lab Code:	K1901412-006	**Basis:**	NA

Organochlorine Pesticides

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Heptachlor Epoxide	ND	Ui	2.0	0.69	1	02/21/19 17:53	2/19/19	
Dieldrin	ND	U	2.0	0.88	1	02/21/19 17:53	2/19/19	
4,4'-DDE	**0.96**	**JP**	2.0	0.92	1	02/21/19 17:53	2/19/19	
4,4'-DDD	ND	U	2.0	1.2	1	02/21/19 17:53	2/19/19	
4,4'-DDT	ND	Ui	3.9	3.9	1	02/21/19 17:53	2/19/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	111	70 - 130	02/21/19 17:53	
Decachlorobiphenyl	116	70 - 130	02/21/19 17:53	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 12:05
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	STM-1SW20190214	**Units:**	ug/L
Lab Code:	K1901412-001	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1262	ND Ui	0.012	0.012	1	02/26/19 01:33	2/19/19	
Aroclor 1268	ND Ui	0.0095	0.0095	1	02/26/19 01:33	2/19/19	
Aroclor 1016	ND U	0.0050	0.0032	1	02/26/19 01:33	2/19/19	
Aroclor 1221	ND U	0.010	0.0032	1	02/26/19 01:33	2/19/19	
Aroclor 1232	ND U	0.0050	0.0032	1	02/26/19 01:33	2/19/19	
Aroclor 1242	ND U	0.0050	0.0032	1	02/26/19 01:33	2/19/19	
Aroclor 1248	ND U	0.0050	0.0032	1	02/26/19 01:33	2/19/19	
Aroclor 1254	ND U	0.0050	0.0032	1	02/26/19 01:33	2/19/19	
Aroclor 1260	ND Ui	0.012	0.012	1	02/26/19 01:33	2/19/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	108	70 - 130	02/26/19 01:33	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 12:55
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB4A-SW20190214	**Units:**	ug/L
Lab Code:	K1901412-002	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1268	ND Ui	0.034	0.034	1	02/26/19 02:04	2/19/19	
Aroclor 1262	ND Ui	0.043	0.043	1	02/26/19 02:04	2/19/19	
Aroclor 1016	ND U	0.0050	0.0032	1	02/26/19 02:04	2/19/19	
Aroclor 1221	ND U	0.010	0.0032	1	02/26/19 02:04	2/19/19	
Aroclor 1232	ND U	0.0050	0.0032	1	02/26/19 02:04	2/19/19	
Aroclor 1242	ND U	0.0050	0.0032	1	02/26/19 02:04	2/19/19	
Aroclor 1248	ND U	0.0050	0.0032	1	02/26/19 02:04	2/19/19	
Aroclor 1254	ND Ui	0.028	0.028	1	02/26/19 02:04	2/19/19	
Aroclor 1260	ND Ui	0.044	0.044	1	02/26/19 02:04	2/19/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	116	70 - 130	02/26/19 02:04	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 13:20
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB6ASW20190214	**Units:**	ug/L
Lab Code:	K1901412-003	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1262	ND	Ui	0.0050	0.0036	1	02/26/19 02:36	2/19/19	
Aroclor 1268	ND	U	0.0050	0.0032	1	02/26/19 02:36	2/19/19	
Aroclor 1016	ND	U	0.0050	0.0032	1	02/26/19 02:36	2/19/19	
Aroclor 1221	ND	U	0.010	0.0032	1	02/26/19 02:36	2/19/19	
Aroclor 1232	ND	U	0.0050	0.0032	1	02/26/19 02:36	2/19/19	
Aroclor 1242	ND	U	0.0050	0.0032	1	02/26/19 02:36	2/19/19	
Aroclor 1248	ND	U	0.0050	0.0032	1	02/26/19 02:36	2/19/19	
Aroclor 1254	ND	U	0.0050	0.0032	1	02/26/19 02:36	2/19/19	
Aroclor 1260	ND	Ui	0.0050	0.0042	1	02/26/19 02:36	2/19/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	127	70 - 130	02/26/19 02:36	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 12:25
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	E1SW20190214	**Units:**	ug/L
Lab Code:	K1901412-004	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1268	ND Ui	0.017	0.017	1	02/26/19 03:07	2/19/19	
Aroclor 1262	ND Ui	0.024	0.024	1	02/26/19 03:07	2/19/19	
Aroclor 1016	ND U	0.0050	0.0032	1	02/26/19 03:07	2/19/19	
Aroclor 1221	ND U	0.010	0.0032	1	02/26/19 03:07	2/19/19	
Aroclor 1232	ND U	0.0050	0.0032	1	02/26/19 03:07	2/19/19	
Aroclor 1242	ND U	0.0050	0.0032	1	02/26/19 03:07	2/19/19	
Aroclor 1248	ND U	0.0050	0.0032	1	02/26/19 03:07	2/19/19	
Aroclor 1254	ND Ui	0.021	0.021	1	02/26/19 03:07	2/19/19	
Aroclor 1260	ND Ui	0.029	0.029	1	02/26/19 03:07	2/19/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	124	70 - 130	02/26/19 03:07	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 11:10
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB2ESW20190214	**Units:**	ug/L
Lab Code:	K1901412-005	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1262	ND Ui	0.048	0.048	1	02/26/19 03:38	2/19/19	
Aroclor 1268	ND Ui	0.035	0.035	1	02/26/19 03:38	2/19/19	
Aroclor 1016	ND Ui	0.014	0.014	1	02/26/19 03:38	2/19/19	
Aroclor 1221	ND U	0.010	0.0032	1	02/26/19 03:38	2/19/19	
Aroclor 1232	ND Ui	0.017	0.017	1	02/26/19 03:38	2/19/19	
Aroclor 1242	ND Ui	0.0096	0.0096	1	02/26/19 03:38	2/19/19	
Aroclor 1248	ND Ui	0.0081	0.0081	1	02/26/19 03:38	2/19/19	
Aroclor 1254	ND Ui	0.0059	0.0059	1	02/26/19 03:38	2/19/19	
Aroclor 1260	ND Ui	0.045	0.045	1	02/26/19 03:38	2/19/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	122	70 - 130	02/26/19 03:38	#

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19 11:45
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB5ASW20190214	**Units:**	ug/L
Lab Code:	K1901412-006	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1262	ND Ui	0.0083	0.0083	1	02/26/19 04:09	2/19/19	
Aroclor 1268	ND Ui	0.0074	0.0074	1	02/26/19 04:09	2/19/19	
Aroclor 1016	ND Ui	0.030	0.030	1	02/26/19 04:09	2/19/19	
Aroclor 1221	ND U	0.010	0.0032	1	02/26/19 04:09	2/19/19	
Aroclor 1232	ND Ui	0.0070	0.0070	1	02/26/19 04:09	2/19/19	
Aroclor 1242	ND Ui	0.0065	0.0065	1	02/26/19 04:09	2/19/19	
Aroclor 1248	ND Ui	0.0095	0.0095	1	02/26/19 04:09	2/19/19	
Aroclor 1254	ND Ui	0.0084	0.0084	1	02/26/19 04:09	2/19/19	
Aroclor 1260	ND Ui	0.012	0.012	1	02/26/19 04:09	2/19/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	128	70 - 130	02/26/19 04:09	

Metals

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Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 12:05
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	STM-1_SW20190214	**Basis:**	NA
Lab Code:	K1901412-001		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.26**	**J**	ug/L	0.50	0.09	1	03/01/19 12:03	02/27/19	
Cadmium	6020A	**0.079**		ug/L	0.020	0.008	1	03/01/19 12:03	02/27/19	
Copper	6020A	**4.11**		ug/L	0.10	0.05	1	03/01/19 12:03	02/27/19	
Lead	6020A	**1.91**		ug/L	0.020	0.006	1	03/01/19 12:03	02/27/19	
Manganese	6020A	**8.83**		ug/L	0.20	0.04	1	03/01/19 12:03	02/27/19	
Nickel	6020A	**0.84**		ug/L	0.20	0.04	1	03/01/19 12:03	02/27/19	
Zinc	6020A	**92.5**		ug/L	2.0	0.5	1	03/01/19 12:03	02/27/19	

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 12:55
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB4A-SW_20190214	**Basis:**	NA
Lab Code:	K1901412-002		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.49**	**J**	ug/L	0.50	0.09	1	03/01/19 12:13	02/27/19	
Cadmium	6020A	**0.146**		ug/L	0.020	0.008	1	03/01/19 12:13	02/27/19	
Copper	6020A	**4.55**		ug/L	0.10	0.05	1	03/01/19 12:13	02/27/19	
Lead	6020A	**6.92**		ug/L	0.020	0.006	1	03/01/19 12:13	02/27/19	
Manganese	6020A	**16.2**		ug/L	0.20	0.04	1	03/01/19 12:13	02/27/19	
Nickel	6020A	**1.18**		ug/L	0.20	0.04	1	03/01/19 12:13	02/27/19	
Zinc	6020A	**312**		ug/L	2.0	0.5	1	03/01/19 12:13	02/27/19	

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 13:20
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB6A_SW_20190214	**Basis:**	NA
Lab Code:	K1901412-003		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.19**	**J**	ug/L	0.50	0.09	1	03/01/19 12:15	02/27/19	
Cadmium	6020A	**0.052**		ug/L	0.020	0.008	1	03/01/19 12:15	02/27/19	
Copper	6020A	**3.58**		ug/L	0.10	0.05	1	03/01/19 12:15	02/27/19	
Lead	6020A	**1.87**		ug/L	0.020	0.006	1	03/01/19 12:15	02/27/19	
Manganese	6020A	**16.8**		ug/L	0.20	0.04	1	03/01/19 12:15	02/27/19	
Nickel	6020A	**0.71**		ug/L	0.20	0.04	1	03/01/19 12:15	02/27/19	
Zinc	6020A	**215**		ug/L	2.0	0.5	1	03/01/19 12:15	02/27/19	

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 12:25
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	E1_SW_20190214	**Basis:**	NA
Lab Code:	K1901412-004		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.53**	ug/L	0.50	0.09	1	03/01/19 12:23	02/27/19	
Cadmium	6020A	**0.054**	ug/L	0.020	0.008	1	03/01/19 12:23	02/27/19	
Copper	6020A	**4.69**	ug/L	0.10	0.05	1	03/01/19 12:23	02/27/19	
Lead	6020A	**3.22**	ug/L	0.020	0.006	1	03/01/19 12:23	02/27/19	
Manganese	6020A	**9.86**	ug/L	0.20	0.04	1	03/01/19 12:23	02/27/19	
Nickel	6020A	**1.84**	ug/L	0.20	0.04	1	03/01/19 12:23	02/27/19	
Zinc	6020A	**90.9**	ug/L	2.0	0.5	1	03/01/19 12:23	02/27/19	

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 11:10
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB2E_SW_20190214	**Basis:**	NA
Lab Code:	K1901412-005		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**1.10**	ug/L	0.50	0.09	1	03/01/19 12:25	02/27/19	
Cadmium	6020A	**0.262**	ug/L	0.020	0.008	1	03/01/19 12:25	02/27/19	
Copper	6020A	**10.3**	ug/L	0.10	0.05	1	03/01/19 12:25	02/27/19	
Lead	6020A	**11.9**	ug/L	0.020	0.006	1	03/01/19 12:25	02/27/19	
Manganese	6020A	**51.1**	ug/L	0.20	0.04	1	03/01/19 12:25	02/27/19	
Nickel	6020A	**2.16**	ug/L	0.20	0.04	1	03/01/19 12:25	02/27/19	
Zinc	6020A	**268**	ug/L	2.0	0.5	1	03/01/19 12:25	02/27/19	

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 11:45
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB5A__SW_20190214	**Basis:**	NA
Lab Code:	K1901412-006		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.18**	**J**	ug/L	0.50	0.09	1	03/01/19 12:27	02/27/19	
Cadmium	6020A	**0.066**		ug/L	0.020	0.008	1	03/01/19 12:27	02/27/19	
Copper	6020A	**3.99**		ug/L	0.10	0.05	1	03/01/19 12:27	02/27/19	
Lead	6020A	**1.92**		ug/L	0.020	0.006	1	03/01/19 12:27	02/27/19	
Manganese	6020A	**15.6**		ug/L	0.20	0.04	1	03/01/19 12:27	02/27/19	
Nickel	6020A	**1.03**		ug/L	0.20	0.04	1	03/01/19 12:27	02/27/19	
Zinc	6020A	**68.7**		ug/L	2.0	0.5	1	03/01/19 12:27	02/27/19	

General Chemistry

ALS Environmental—Kelso Laboratory
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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 12:05
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	STM-1_SW20190214	**Basis:**	NA
Lab Code:	K1901412-001		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**9.0**	mg/L	5.0	-	1	02/20/19 11:10	

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 12:55
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB4A-SW_20190214	**Basis:**	NA
Lab Code:	K1901412-002		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**18.0**	mg/L	5.0	-	1	02/20/19 11:10	

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 13:20
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB6A_SW_20190214	**Basis:**	NA
Lab Code:	K1901412-003		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**14.0**	mg/L	5.0	-	1	02/20/19 11:10	

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 12:25
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	E1_SW_20190214	**Basis:**	NA
Lab Code:	K1901412-004		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**19.0**	mg/L	5.0	-	1	02/20/19 11:10	

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 11:10
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB2E_SW_20190214	**Basis:**	NA
Lab Code:	K1901412-005		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**57.5**	mg/L	5.0	-	1	02/20/19 11:10	

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19 11:45
Sample Matrix:	Storm Water	**Date Received:**	02/15/19 11:30
Sample Name:	CB5A__SW_20190214	**Basis:**	NA
Lab Code:	K1901412-006		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**27.5**	mg/L	5.0	-	1	02/20/19 11:10	

QC Summary Forms

ALS Environmental—Kelso Laboratory
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Volatile Organic Compounds by GC/MS

ALS Environmental—Kelso Laboratory
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Client: ERM West, Inc **Service Request:** K1901412
Project: Univar Yeon SW/
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds

Analysis Method: 8260C
Extraction Method: EPA 5030B

Sample Name	Lab Code	4-Bromofluorobenzene 68 - 117	Dibromofluoromethane 73 - 122	Toluene-d8 65 - 144
STM-1SW20190214	K1901412-001	107	112	111
CB4A-SW20190214	K1901412-002	103	113	111
CB6ASW20190214	K1901412-003	107	114	112
E1SW20190214	K1901412-004	106	114	113
CB2ESW20190214	K1901412-005	107	113	112
CB5ASW20190214	K1901412-006	109	117	112
Trip Blank	K1901412-007	106	113	112
CB5ASW20190214 MS	KWG1900857-1	105	110	116
CB5ASW20190214 DMS	KWG1900857-2	107	111	117

Client: ERM West, Inc **Service Request:** K1901412
Project: Univar Yeon SW/
Sample Matrix: Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds

Analysis Method: 8260C
Extraction Method: EPA 5030B

Sample Name	Lab Code	4-Bromofluorobenzene 68 - 117	Dibromofluoromethane 73 - 122	Toluene-d8 65 - 144
Lab Control Sample	KWG1900857-3	107	110	116
Method Blank	KWG1900857-4	107	113	115

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	02/14/19
Sample Matrix:	Storm Water	**Date Received:**	02/15/19
		Date Analyzed:	02/21/19
		Date Extracted:	02/21/19

Duplicate Matrix Spike Summary
Volatile Organic Compounds

Sample Name:	CB5A__SW_20190214	**Units:**	ug/L
Lab Code:	K1901412-006	**Basis:**	NA
Analysis Method:	8260C		
Prep Method:	EPA 5030B		

		Matrix Spike KWG1900857-1			**Duplicate Matrix Spike** KWG1900857-2					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Vinyl Chloride	ND U	12.1	10.0	121	10.9	10.0	109	49-136	10	30
Chloroform	ND U	11.3	10.0	113	11.0	10.0	110	64-133	3	30
Trichloroethene (TCE)	ND U	11.7	10.0	117	11.0	10.0	110	53-139	7	30
Tetrachloroethene (PCE)	ND U	11.7	10.0	117	11.0	10.0	110	61-131	6	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	NA
Sample Matrix:	Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1900857-4	**Basis:**	NA

Volatile Organic Compounds

Analysis Method: 8260C
Prep Method: EPA 5030B

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Vinyl Chloride	ND	U	0.50	0.075	1	02/21/19 14:00	2/21/19	
Chloroform	ND	U	0.50	0.072	1	02/21/19 14:00	2/21/19	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	02/21/19 14:00	2/21/19	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	02/21/19 14:00	2/21/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Dibromofluoromethane	113	73 - 122	02/21/19 14:00	
Toluene-d8	115	65 - 144	02/21/19 14:00	
4-Bromofluorobenzene	107	68 - 117	02/21/19 14:00	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Analyzed:**	02/21/19
Sample Matrix:	Water	**Date Extracted:**	02/21/19

Lab Control Sample Summary
Volatile Organic Compounds

Analysis Method:	8260C	**Units:**	ug/L
Prep Method:	EPA 5030B	**Basis:**	NA
		Analysis Lot:	KWG1900856

Lab Control Sample
KWG1900857-3

Analyte Name	Result	Spike Amount	% Rec	% Rec Limits
Chloroform	9.03	10.0	90	70-129
Tetrachloroethene (PCE)	6.68	10.0	67	62-126
Trichloroethene (TCE)	7.38	10.0	74	67-128
Vinyl Chloride	6.30	10.0	63	55-123

Semivolatile Organic Compounds by GC/MS

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Client: ERM West, Inc **Service Request:** K1901412
Project: Univar Yeon SW
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Extraction Method: EPA 3511

Sample Name	Lab Code	Fluoranthene-d10 42-133	Fluorene-d10 42-131	Terphenyl-d14 32-129
STM-1_SW20190214	K1901412-001	103	74	94
CB4A-SW_20190214	K1901412-002	102	78	96
CB6A_SW_20190214	K1901412-003	104	80	99
E1_SW_20190214	K1901412-004	100	76	94
CB2E_SW_20190214	K1901412-005	91	79	93
CB5A__SW_20190214	K1901412-006	94	83	98
Method Blank	KQ1902177-03	105	76	96
Lab Control Sample	KQ1902177-01	105	73	91
Duplicate Lab Control Sample	KQ1902177-02	109	75	93

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ1902177-03	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Benz(a)anthracene	ND	U	0.021	0.0028	1	02/26/19 09:37	2/21/19	
Benzo(a)pyrene	ND	U	0.021	0.0047	1	02/26/19 09:37	2/21/19	
Benzo(b)fluoranthene	ND	U	0.021	0.0044	1	02/26/19 09:37	2/21/19	
Chrysene	ND	U	0.021	0.0037	1	02/26/19 09:37	2/21/19	
Fluoranthene	ND	U	0.021	0.011	1	02/26/19 09:37	2/21/19	
Indeno(1,2,3-cd)pyrene	ND	U	0.021	0.0028	1	02/26/19 09:37	2/21/19	
Pyrene	ND	U	0.021	0.0057	1	02/26/19 09:37	2/21/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	105	42 - 133	02/26/19 09:37	
Fluorene-d10	76	42 - 131	02/26/19 09:37	
Terphenyl-d14	96	32 - 129	02/26/19 09:37	

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Analyzed:**	02/26/19
Sample Matrix:	Storm Water	**Date Extracted:**	02/21/19

Duplicate Lab Control Sample Summary
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method:	8270D	**Units:**	ug/L
Prep Method:	EPA 3511	**Basis:**	NA
		Analysis Lot:	626456

	Lab Control Sample KQ1902177-01			Duplicate Lab Control Sample KQ1902177-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Benz(a)anthracene	1.86	2.50	74	2.07	2.50	83	74-124	11	30
Benzo(a)pyrene	1.86	2.50	74 *	2.05	2.50	82	75-131	10	30
Benzo(b)fluoranthene	2.05	2.50	82	2.28	2.50	91	73-136	11	30
Chrysene	1.96	2.50	79	2.19	2.50	88	74-132	11	30
Fluoranthene	2.27	2.50	91	2.55	2.50	102	70-127	11	30
Indeno(1,2,3-cd)pyrene	1.85	2.50	74	2.04	2.50	82	63-136	10	30
Pyrene	1.72	2.50	69 *	1.92	2.50	77	72-127	11	30

Client: ERM West, Inc **Service Request:** K1901412
Project: Univar Yeon SW
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3520C

Sample Name	Lab Code	2-Fluorobiphenyl 35-105	Nitrobenzene-d5 40-117	p-Terphenyl-d14 48-109
STM-1_SW20190214	K1901412-001	50	63	68
CB4A-SW_20190214	K1901412-002	55	64	68
CB6A_SW_20190214	K1901412-003	50	60	67
E1_SW_20190214	K1901412-004	53	65	73
CB2E_SW_20190214	K1901412-005	57	67	73
CB5A__SW_20190214	K1901412-006	57	67	71
Method Blank	KQ1902056-03	67	71	77
Lab Control Sample	KQ1902056-01	72	74	76
Duplicate Lab Control Sample	KQ1902056-02	68	69	72

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ1902056-03	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	ND	U	0.95	0.13	1	02/23/19 04:22	2/19/19	
Butyl Benzyl Phthalate	ND	U	0.19	0.021	1	02/23/19 04:22	2/19/19	
Diethyl Phthalate	ND	U	0.19	0.015	1	02/23/19 04:22	2/19/19	
Dimethyl Phthalate	ND	U	0.19	0.021	1	02/23/19 04:22	2/19/19	
Di-n-butyl Phthalate	**0.023**	**J**	0.19	0.023	1	02/23/19 04:22	2/19/19	
Di-n-octyl Phthalate	ND	U	0.19	0.033	1	02/23/19 04:22	2/19/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	67	35 - 105	02/23/19 04:22	
Nitrobenzene-d5	71	40 - 117	02/23/19 04:22	
p-Terphenyl-d14	77	48 - 109	02/23/19 04:22	

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Analyzed:**	02/23/19
Sample Matrix:	Storm Water	**Date Extracted:**	02/19/19

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	**Units:**	ug/L
Prep Method:	EPA 3520C	**Basis:**	NA
		Analysis Lot:	626345

	Lab Control Sample KQ1902056-01			Duplicate Lab Control Sample KQ1902056-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bis(2-ethylhexyl) Phthalate	3.65	5.00	73	3.53	5.00	71	42-147	3	30
Butyl Benzyl Phthalate	3.59	5.00	72	3.42	5.00	68	59-119	5	30
Diethyl Phthalate	4.01	5.00	80	3.74	5.00	75	58-114	7	30
Dimethyl Phthalate	4.08	5.00	82	3.78	5.00	76	58-109	8	30
Di-n-butyl Phthalate	3.81	5.00	76	3.62	5.00	72	61-121	5	30
Di-n-octyl Phthalate	3.68	5.00	74	3.47	5.00	69	50-125	6	30

Semivolatile Organic Compounds by GC

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Client: ERM West, Inc **Service Request:** K1901412
Project: Univar Yeon SW/
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Organochlorine Pesticides

Analysis Method: 8081B
Extraction Method: EPA 3511

Sample Name	Lab Code	Decachlorobiphenyl 70 - 130	Tetrachloro-m-xylene 70 - 130
STM-1SW20190214	K1901412-001	116	119
CB4A-SW20190214	K1901412-002	111	104
CB6ASW20190214	K1901412-003	100	103
E1SW20190214	K1901412-004	120	115
CB2ESW20190214	K1901412-005	103	109
CB5ASW20190214	K1901412-006	116	111
Lab Control Sample	KWG1900810-1	98	76
Duplicate Lab Control Sample	KWG1900810-2	111	86
Method Blank	KWG1900810-3	120	93

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/L
Lab Code:	KWG1900810-3	**Basis:**	NA

Organochlorine Pesticides

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Heptachlor Epoxide	ND	U	2.0	0.58	1	02/21/19 13:57	2/19/19	
Dieldrin	ND	U	2.0	0.88	1	02/21/19 13:57	2/19/19	
4,4'-DDE	ND	U	2.0	0.92	1	02/21/19 13:57	2/19/19	
4,4'-DDD	ND	U	2.0	1.2	1	02/21/19 13:57	2/19/19	
4,4'-DDT	ND	U	2.0	1.5	1	02/21/19 13:57	2/19/19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Tetrachloro-m-xylene	93	70 - 130	02/21/19 13:57	
Decachlorobiphenyl	120	70 - 130	02/21/19 13:57	

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Analyzed:**	02/21/19
Sample Matrix:	Storm Water	**Date Extracted:**	02/19/19

Duplicate Lab Control Sample Summary
Organochlorine Pesticides

Analysis Method:	8081B	**Units:**	ng/L
Prep Method:	EPA 3511	**Basis:**	NA
		Analysis Lot:	KWG1900864

	Lab Control Sample KWG1900810-1			Duplicate Lab Control Sample KWG1900810-2					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
4,4'-DDD	25.7	25.0	103	31.0	25.0	124	70-130	18	30
4,4'-DDE	24.6	25.0	98	28.9	25.0	116	70-130	16	30
4,4'-DDT	27.0	25.0	108	32.1	25.0	128	70-130	17	30
Dieldrin	24.6	25.0	98	29.0	25.0	116	70-130	16	30
Heptachlor Epoxide	22.0	25.0	88	26.3	25.0	105	70-130	18	30

Client: ERM West, Inc **Service Request:** K1901412
Project: Univar Yeon SW/
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Extraction Method: EPA 3511

Sample Name	Lab Code	Decachlorobiphenyl 70 - 130
STM-1SW20190214	K1901412-001	108
CB4A-SW20190214	K1901412-002	116
CB6ASW20190214	K1901412-003	127
E1SW20190214	K1901412-004	124
CB2ESW20190214	K1901412-005	122 i #
CB5ASW20190214	K1901412-006	128
Lab Control Sample	KWG1900811-1	113
Duplicate Lab Control Sample	KWG1900811-2	130
Method Blank	KWG1900811-3	112

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG1900811-3	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1268	ND U	0.0050	0.0032	1	02/25/19 23:58	2/19/19	
Aroclor 1262	ND U	0.0050	0.0032	1	02/25/19 23:58	2/19/19	
Aroclor 1016	ND U	0.0050	0.0032	1	02/25/19 23:58	2/19/19	
Aroclor 1221	ND U	0.010	0.0032	1	02/25/19 23:58	2/19/19	
Aroclor 1232	ND U	0.0050	0.0032	1	02/25/19 23:58	2/19/19	
Aroclor 1242	ND U	0.0050	0.0032	1	02/25/19 23:58	2/19/19	
Aroclor 1248	ND U	0.0050	0.0032	1	02/25/19 23:58	2/19/19	
Aroclor 1254	ND U	0.0050	0.0032	1	02/25/19 23:58	2/19/19	
Aroclor 1260	ND U	0.0050	0.0032	1	02/25/19 23:58	2/19/19	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	112	70 - 130	02/25/19 23:58	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW/	**Date Analyzed:**	02/26/19
Sample Matrix:	Storm Water	**Date Extracted:**	02/19/19

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs)

Analysis Method:	8082A	**Units:**	ug/L
Prep Method:	EPA 3511	**Basis:**	NA
		Analysis Lot:	KWG1900976

	Lab Control Sample KWG1900811-1			Duplicate Lab Control Sample KWG1900811-2					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	0.161	0.125	129	0.142	0.125	113	70-130	13	30
Aroclor 1260	0.164	0.125	132 *	0.153	0.125	122	70-130	8	30

Metals

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ1902529-01		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	ND	U	ug/L	0.50	0.09	1	03/01/19 11:59	02/27/19	
Cadmium	6020A	ND	U	ug/L	0.020	0.008	1	03/01/19 11:59	02/27/19	
Copper	6020A	ND	U	ug/L	0.10	0.05	1	03/01/19 11:59	02/27/19	
Lead	6020A	ND	U	ug/L	0.020	0.006	1	03/01/19 11:59	02/27/19	
Manganese	6020A	ND	U	ug/L	0.20	0.04	1	03/01/19 11:59	02/27/19	
Nickel	6020A	ND	U	ug/L	0.20	0.04	1	03/01/19 11:59	02/27/19	
Zinc	6020A	ND	U	ug/L	2.0	0.5	1	03/01/19 11:59	02/27/19	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	02/14/19
Sample Matrix:	Storm Water	**Date Received:**	02/15/19
		Date Analyzed:	03/1/19
		Date Extracted:	02/27/19

Matrix Spike Summary
Total Metals

Sample Name:	STM-1_SW20190214	**Units:**	ug/L
Lab Code:	K1901412-001	**Basis:**	NA
Analysis Method:	6020A		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ1902529-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	0.26 J	46.9	50.0	93	75-125
Cadmium	0.079	24.2	25.0	96	75-125
Copper	4.11	16.1	12.5	96	75-125
Lead	1.91	49.4	50.0	95	75-125
Manganese	8.83	32.3	25.0	94	75-125
Nickel	0.84	24.8	25.0	96	75-125
Zinc	92.5	114	25.0	85	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project	Univar Yeon SW	**Date Collected:**	02/14/19
Sample Matrix:	Storm Water	**Date Received:**	02/15/19
		Date Analyzed:	03/01/19

Replicate Sample Summary
Total Metals

Sample Name:	STM-1_SW20190214	**Units:**	ug/L
Lab Code:	K1901412-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ1902529-03 Result	Average	RPD	RPD Limit
Arsenic	6020A	0.50	0.09	0.26 J	0.24 J	0.25	8	20
Cadmium	6020A	0.020	0.008	0.079	0.065	0.072	19	20
Copper	6020A	0.10	0.05	4.11	4.15	4.13	<1	20
Lead	6020A	0.020	0.006	1.91	1.87	1.89	2	20
Manganese	6020A	0.20	0.04	8.83	8.78	8.81	<1	20
Nickel	6020A	0.20	0.04	0.84	0.84	0.84	<1	20
Zinc	6020A	2.0	0.5	92.5	91.2	91.9	1	20

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Client: ERM West, Inc
Project: Univar Yeon SW
Sample Matrix: Storm Water

Service Request: K1901412
Date Analyzed: 03/01/19

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ1902529-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6020A	48.0	50.0	96	80-120
Cadmium	6020A	24.1	25.0	96	80-120
Copper	6020A	12.4	12.5	99	80-120
Lead	6020A	48.2	50.0	96	80-120
Manganese	6020A	24.4	25.0	98	80-120
Nickel	6020A	24.4	25.0	97	80-120
Zinc	6020A	25.6	25.0	102	80-120

General Chemistry

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K1901412-MB1		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	02/20/19 11:10	

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K1901412-MB2		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	02/20/19 11:10	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project	Univar Yeon SW	**Date Collected:**	02/14/19
Sample Matrix:	Storm Water	**Date Received:**	02/15/19
		Date Analyzed:	02/20/19

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	STM-1_SW20190214	**Units:**	mg/L
Lab Code:	K1901412-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1901412-001DUP Result	Average	RPD	RPD Limit
Solids, Total Suspended (TSS)	SM 2540 D	5.0	-	9.0	7.5	8.25	18 *	5

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project	Univar Yeon SW	**Date Collected:**	02/14/19
Sample Matrix:	Storm Water	**Date Received:**	02/15/19
		Date Analyzed:	02/20/19

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	CB4A-SW_20190214	**Units:**	mg/L
Lab Code:	K1901412-002	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K1901412-002DUP Result	Average	RPD	RPD Limit
Solids, Total Suspended (TSS)	SM 2540 D	5.0	-	18.0	18.0	18.0	<1	5

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K1901412
Project:	Univar Yeon SW	**Date Analyzed:**	02/20/19
Sample Matrix:	Storm Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Suspended (TSS)

Analysis Method:	SM 2540 D	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	625803

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K1901412-LCS	314	306	103	85-115

April 13, 2020 Service Request No:K2002352

Dylan Stankus
ERM-West, Incorporated
1001 SW 5th Ave. #1010
Portland, OR 97204

Laboratory Results for: ERM

Dear Dylan,

Enclosed are the results of the sample(s) submitted to our laboratory March 17, 2020
For your reference, these analyses have been assigned our service request number **K2002352.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

for Kelley Lovejoy
Project Manager

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PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
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1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

Client: ERM West, Inc
Project: ERM
Sample Matrix: Storm Water

Service Request: K2002352
Date Received: 03/17/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Eight storm water samples were received for analysis at ALS Environmental on 03/17/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivolatiles by GC/MS:

Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD) with this sample batch. A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

Method 8270D SVO LL, 03/24/2020: The upper control criterion was exceeded for Di-n-octyl Phthalate in Continuing Calibration Verification (CCV) MS29\0324F002.D. The field samples analyzed in this sequence did not contain the analytes in question. Since the apparent problem indicated a potential high bias, the data quality was not affected. No further corrective action was required.

Method 8270D, 03/19/2020:The upper control criterion was exceeded for Dibenz(a,h)anthracene in Duplicate Laboratory Control Sample (DLCS) KQ2003830-02:. The analyte in question was not detected in the associated field samples above the reporting limit. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Method 8270D, 03/19/2020:The upper control criterion was exceeded for Dibenz(a,h)anthracene and Indeno(1,2,3-cd)pyrene in the associated Continuing Calibration Verification (CCV). The field samples analyzed in this sequence did not contain the analytes in question above the reporting limit. Since the apparent problem indicated a potential high bias, the data quality was not affected. No further corrective action was required.

Semivoa GC:

Method 8081B, 04/08/2020:The analysis of Chlorinated Pesticides by EPA 8081 requires the use of dual column confirmation. When the Initial Calibration Verification (ICV) criteria are met for both columns, the higher of the two sample results is generally reported. The primary evaluation criteria were not met on the confirmation column for 4,4'-DDD in the associated calibration. The ICV results were reported from the acceptable column. The data quality was not affected. No further corrective action was necessary.
Method 8082A, Polychlorinated Biphenyls (PCBs): Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

Method 8082A, Polychlorinated Biphenyls (PCBs): The recovery of Decachlorobiphenyl in samples CB-5A_20200313 and CB-6A -SW_20200313 was outside the control limits listed in the results summary. The limits are default values temporarily in use until sufficient data points are generated to calculate statistical control limits. Based on the method and historic data, the recoveries observed were in the range expected for this procedure. No further corrective action was taken.

Metals:

No significant anomalies were noted with this analysis.

Approved by _____ Date 04/13/2020

General Chemistry:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

No significant anomalies were noted with this analysis.

Approved by _____ Date 04/13/2020

SAMPLE DETECTION SUMMARY

CLIENT ID: STM-1-SW_20200313			Lab ID: K2002352-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	7.0			5.0	mg/L	SM 2540 D
Arsenic	0.40	J	0.09	0.50	ug/L	6020A
Cadmium	0.150		0.008	0.020	ug/L	6020A
Copper	13.0		0.05	0.10	ug/L	6020A
Iron	728		0.3	2.0	ug/L	6020A
Lead	1.44		0.006	0.020	ug/L	6020A
Manganese	56.2		0.04	0.20	ug/L	6020A
Nickel	5.75		0.04	0.20	ug/L	6020A
Zinc	156		0.5	2.0	ug/L	6020A
Benz(a)anthracene	0.0031	J	0.00097	0.020	ug/L	8270D
Benzo(a)pyrene	0.0022	J	0.0011	0.020	ug/L	8270D
Benzo(b)fluoranthene	0.0016	J	0.00083	0.020	ug/L	8270D
Chrysene	0.0016	J	0.00076	0.020	ug/L	8270D
Fluoranthene	0.0055	J	0.00082	0.020	ug/L	8270D
Fluorene	0.0023	J	0.0011	0.020	ug/L	8270D
Indeno(1,2,3-cd)pyrene	0.0010	J	0.00089	0.020	ug/L	8270D
Pyrene	0.0096	J	0.0010	0.020	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.76	J	0.14	1.0	ug/L	8270D
Diethyl Phthalate	0.082	J	0.016	0.20	ug/L	8270D
Dimethyl Phthalate	0.87		0.022	0.20	ug/L	8270D
Di-n-butyl Phthalate	0.30		0.024	0.20	ug/L	8270D
Heptachlor Epoxide	0.97	JP	0.29	1.0	ng/L	8081B
Aroclor 1268	0.038		0.0032	0.0050	ug/L	8082A

CLIENT ID: E-1-SW_20200313			Lab ID: K2002352-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	13.5			5.0	mg/L	SM 2540 D
Arsenic	1.01		0.09	0.50	ug/L	6020A
Cadmium	0.167		0.008	0.020	ug/L	6020A
Copper	14.7		0.05	0.10	ug/L	6020A
Iron	797		0.3	2.0	ug/L	6020A
Lead	6.83		0.006	0.020	ug/L	6020A
Manganese	18.0		0.04	0.20	ug/L	6020A
Nickel	2.80		0.04	0.20	ug/L	6020A
Zinc	295		0.5	2.0	ug/L	6020A
Chloroform	0.16	J	0.072	0.50	ug/L	8260C
Acenaphthene	0.0028	J	0.0012	0.020	ug/L	8270D
Benz(a)anthracene	0.0026	J	0.00097	0.020	ug/L	8270D
Benzo(a)pyrene	0.0026	J	0.0011	0.020	ug/L	8270D
Benzo(b)fluoranthene	0.0030	J	0.00083	0.020	ug/L	8270D
Chrysene	0.0036	J	0.00076	0.020	ug/L	8270D
Fluoranthene	0.018	J	0.00082	0.020	ug/L	8270D

SAMPLE DETECTION SUMMARY

CLIENT ID: E-1-SW_20200313			Lab ID: K2002352-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Fluorene	0.0039	J	0.0011	0.020	ug/L	8270D
Indeno(1,2,3-cd)pyrene	0.0015	J	0.00089	0.020	ug/L	8270D
Pyrene	0.024		0.0010	0.020	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.87	J	0.13	0.95	ug/L	8270D
Diethyl Phthalate	0.12	J	0.015	0.19	ug/L	8270D
Dimethyl Phthalate	1.9		0.021	0.19	ug/L	8270D
Di-n-butyl Phthalate	0.39		0.023	0.19	ug/L	8270D
4,4'-DDE	0.58	JP	0.46	1.0	ng/L	8081B
Aroclor 1268	0.079		0.0032	0.0050	ug/L	8082A

CLIENT ID: DUP-SW_20200313-STM1			Lab ID: K2002352-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	6.5			5.0	mg/L	SM 2540 D
Arsenic	0.38	J	0.09	0.50	ug/L	6020A
Cadmium	0.135		0.008	0.020	ug/L	6020A
Copper	14.8		0.05	0.10	ug/L	6020A
Iron	617		0.3	2.0	ug/L	6020A
Lead	1.22		0.006	0.020	ug/L	6020A
Manganese	50.9		0.04	0.20	ug/L	6020A
Nickel	6.59		0.04	0.20	ug/L	6020A
Zinc	160		0.5	2.0	ug/L	6020A
Acenaphthene	0.0013	J	0.0012	0.020	ug/L	8270D
Benz(a)anthracene	0.0026	J	0.00097	0.020	ug/L	8270D
Benzo(a)pyrene	0.0012	J	0.0011	0.020	ug/L	8270D
Chrysene	0.0016	J	0.00076	0.020	ug/L	8270D
Fluoranthene	0.0056	J	0.00082	0.020	ug/L	8270D
Fluorene	0.0022	J	0.0011	0.020	ug/L	8270D
Indeno(1,2,3-cd)pyrene	0.00093	J	0.00089	0.020	ug/L	8270D
Pyrene	0.0092	J	0.0010	0.020	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.44	J	0.13	0.98	ug/L	8270D
Diethyl Phthalate	0.081	J	0.015	0.20	ug/L	8270D
Dimethyl Phthalate	1.1		0.021	0.20	ug/L	8270D
Di-n-butyl Phthalate	0.29		0.023	0.20	ug/L	8270D
4,4'-DDD	0.75	J	0.57	2.0	ng/L	8081B
Heptachlor Epoxide	1.2		0.29	1.0	ng/L	8081B
Aroclor 1268	0.037		0.0032	0.0050	ug/L	8082A

CLIENT ID: CB-5A_20200313			Lab ID: K2002352-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	16.5			5.0	mg/L	SM 2540 D
Arsenic	0.32	J	0.09	0.50	ug/L	6020A
Cadmium	0.063		0.008	0.020	ug/L	6020A

SAMPLE DETECTION SUMMARY

CLIENT ID: CB-5A_20200313			Lab ID: K2002352-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Copper	11.9		0.05	0.10	ug/L	6020A
Iron	630		0.3	2.0	ug/L	6020A
Lead	1.53		0.006	0.020	ug/L	6020A
Manganese	22.2		0.04	0.20	ug/L	6020A
Nickel	1.87		0.04	0.20	ug/L	6020A
Zinc	122		0.5	2.0	ug/L	6020A
Acenaphthene	0.0012	J	0.0012	0.020	ug/L	8270D
Benz(a)anthracene	0.0027	J	0.00097	0.020	ug/L	8270D
Benzo(a)pyrene	0.0036	J	0.0011	0.020	ug/L	8270D
Benzo(b)fluoranthene	0.0033	J	0.00083	0.020	ug/L	8270D
Chrysene	0.0033	J	0.00076	0.020	ug/L	8270D
Fluoranthene	0.016	J	0.00082	0.020	ug/L	8270D
Fluorene	0.0029	J	0.0011	0.020	ug/L	8270D
Indeno(1,2,3-cd)pyrene	0.0024	J	0.00089	0.020	ug/L	8270D
Pyrene	0.025		0.0010	0.020	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.40	J	0.13	0.98	ug/L	8270D
Diethyl Phthalate	0.15	J	0.015	0.20	ug/L	8270D
Dimethyl Phthalate	1.6		0.021	0.20	ug/L	8270D
Di-n-butyl Phthalate	0.15	J	0.023	0.20	ug/L	8270D
Di-n-octyl Phthalate	0.092	J	0.033	0.20	ug/L	8270D
Aroclor 1268	0.0062		0.0032	0.0050	ug/L	8082A

CLIENT ID: CB-2E-SW_20200313			Lab ID: K2002352-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic	0.40	J	0.09	0.50	ug/L	6020A
Cadmium	0.116		0.008	0.020	ug/L	6020A
Copper	6.21		0.05	0.10	ug/L	6020A
Iron	478		0.3	2.0	ug/L	6020A
Lead	0.498		0.006	0.020	ug/L	6020A
Manganese	13.8		0.04	0.20	ug/L	6020A
Nickel	1.09		0.04	0.20	ug/L	6020A
Zinc	127		0.5	2.0	ug/L	6020A
Benz(a)anthracene	0.0026	J	0.00097	0.020	ug/L	8270D
Fluoranthene	0.0023	J	0.00082	0.020	ug/L	8270D
Fluorene	0.0014	J	0.0011	0.020	ug/L	8270D
Pyrene	0.0039	J	0.0010	0.020	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.50	J	0.13	0.95	ug/L	8270D
Diethyl Phthalate	0.044	J	0.015	0.19	ug/L	8270D
Dimethyl Phthalate	0.086	J	0.021	0.19	ug/L	8270D
Di-n-butyl Phthalate	0.094	J	0.023	0.19	ug/L	8270D
4,4'-DDD	1.1	J	0.57	2.0	ng/L	8081B
Heptachlor Epoxide	0.84	J	0.29	1.0	ng/L	8081B

SAMPLE DETECTION SUMMARY

CLIENT ID: CB-2E-SW_20200313			Lab ID: K2002352-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Aroclor 1268	0.014		0.0032	0.0050	ug/L	8082A

CLIENT ID: CB-4A_20200313			Lab ID: K2002352-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic	0.30	J	0.09	0.50	ug/L	6020A
Cadmium	0.077		0.008	0.020	ug/L	6020A
Copper	4.17		0.05	0.10	ug/L	6020A
Iron	699		0.3	2.0	ug/L	6020A
Lead	0.214		0.006	0.020	ug/L	6020A
Manganese	26.0		0.04	0.20	ug/L	6020A
Nickel	1.16		0.04	0.20	ug/L	6020A
Zinc	155		0.5	2.0	ug/L	6020A
Benz(a)anthracene	0.0018	J	0.00097	0.020	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.20	J	0.13	0.98	ug/L	8270D
Butyl Benzyl Phthalate	0.12	J	0.021	0.20	ug/L	8270D
Di-n-butyl Phthalate	0.055	J	0.023	0.20	ug/L	8270D

CLIENT ID: CB-6A-SW_20200313			Lab ID: K2002352-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Arsenic	0.37	J	0.09	0.50	ug/L	6020A
Cadmium	0.100		0.008	0.020	ug/L	6020A
Copper	4.19		0.05	0.10	ug/L	6020A
Iron	462		0.3	2.0	ug/L	6020A
Lead	0.410		0.006	0.020	ug/L	6020A
Manganese	58.1		0.04	0.20	ug/L	6020A
Nickel	0.98		0.04	0.20	ug/L	6020A
Zinc	92.1		0.5	2.0	ug/L	6020A
Benz(a)anthracene	0.0031	J	0.00097	0.020	ug/L	8270D
Fluoranthene	0.0026	J	0.00082	0.020	ug/L	8270D
Fluorene	0.0011	J	0.0011	0.020	ug/L	8270D
Pyrene	0.0034	J	0.0010	0.020	ug/L	8270D
Dimethyl Phthalate	0.18	J	0.021	0.19	ug/L	8270D
Di-n-butyl Phthalate	0.059	J	0.023	0.19	ug/L	8270D

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: ERM West, Inc **Service Request:**K2002352
Project: ERM/0533016.04

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2002352-001	STM-1-SW_20200313	3/13/2020	1200
K2002352-002	E-1-SW_20200313	3/13/2020	1205
K2002352-003	DUP-SW_20200313-STM1	3/13/2020	1220
K2002352-004	CB-5A_20200313	3/13/2020	1250
K2002352-005	CB-2E-SW_20200313	3/13/2020	1255
K2002352-006	CB-4A_20200313	3/13/2020	1320
K2002352-007	CB-6A-SW_20200313	3/13/2020	1330
K2002352-008	Trip Blank	3/13/2020	1200

ALS Environmental

1317 South 13th Ave, Kelso WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

CHAIN OF CUSTODY
103403

003

SR#_____
COC Set____of____
COC#_____

K2002352

Project Name: ERM	Project Number: 0533016.04
Project Manager: Dylan Stankus	
Company: ERM - Univar SW	
Address: 1050 SW 6th Ave Ste. 1650	
Phone #: 971 517 7034	email: emily.ponaski@erm.com
Sampler Signature:	Sampler Printed Name: Emily Ponaski + Scott Lehmann

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	8260C / VOC FP 14D	1 PCBs 8082A UL	2 8081B (Pesticides) UL	3 SM 2540 D (TSS)	4 8270D/PAH SIM	5 8270D/SVOC UL	6 6020A/Metals T	Remarks
1 STM-1_SW-20200313		3/13/20	1200	W		X	X	X	X	X	X	X	
2 E-1-SW-20200313			1205			X							
3 DUP_SW-20200313-STM1			1220			X							
4 CB-5A-20200313			1250			X							
5 CB-2E-SW-20200313			1255			X							
6 CB-4A-20200313			1320			X							
7 CB-6A-SW-20200313			1330			X							
8.													
9.													
10.													

Report Requirements

- ___ I. Routine Report: Method Blank, Surrogate, as required
- X II. Report Dup., MS, MSD as required
- ___ III. CLP Like Summary (no raw data)
- ___ IV. Data Validation Report
- ___ V. EDD

Invoice Information

P.O.#_____
Bill To: Prebilled

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al (As) Sb Ba Be B Ca (Cd) Co Cr (Cu) (Fe) (Pb) Mg (Mn) Mo (Ni) K Ag Na Se Sr Tl Sn V (Zn) (Hg)

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

No Hg on CB-5A-20200313, CB-6A-SW-20200313, & DUP_SW-20200313-STM-1

Kelley Lavejoy has list of analytes for project

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Signature	Signature	Signature	Signature	Signature
Printed Name: Emily Ponaski	Printed Name: AIV	Printed Name: AIV	Printed Name: AIV	Printed Name	Printed Name
Firm: ERM	Firm: 3/17/20 1050	Firm: 3/17/20 1225	Firm: 3/17/20 1225	Firm	Firm
Date/Time: 3/17/20 1050	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

PC KL

Cooler Receipt and Preservation Form

Client ERM Service Request *K20* 02352

Received: 3/17/20 Opened: 3/17/20 By: BR Unloaded 3/17/20 By: BR

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____

   If present, were custody seals intact? Y N If present, were they signed and dated? Y N

Temp Blank	Sample 1	Sample 2	Sample 3	Sample 4	IR GUN	Cooler / COC ID NA	Tracking Number NA	Filed
0.5	–	–	–	–	39800488NS			
1.7	–	–	–	–				
0.9	–	–	–	–				
0.6	–	–	–	–				
1.1	–	–	–	–				

4. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
5. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
6. Were samples received in good condition (temperature, unbroken)? *Indicate in the table below.* NA Y N

   If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA Y N
8. Did all sample labels and tags agree with custody papers? *Indicate major discrepancies in the table on page 2.* NA Y N
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
10. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
11. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
12. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:
DupSW_20200313	STM-1-SW-20200313	date / time

Sample ID	Bottle Count Bottle Type	Out of Temp	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time
Trip Blank	2 of 2 VOA		X							

Notes, Discrepancies, & Resolutions: _____

Miscellaneous Forms

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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Sample Results

ALS Environmental—Kelso Laboratory
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Volatile Organic Compounds by GC/MS

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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:00
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	STM-1-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	03/26/20 16:06	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	03/26/20 16:06	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	03/26/20 16:06	
Vinyl Chloride	ND	U	0.50	0.075	1	03/26/20 16:06	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	83	68 - 117	03/26/20 16:06	
Dibromofluoromethane	82	73 - 122	03/26/20 16:06	
Toluene-d8	85	65 - 144	03/26/20 16:06	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:05
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	E-1-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	**0.16**	**J**	0.50	0.072	1	03/26/20 16:28	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	03/26/20 16:28	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	03/26/20 16:28	
Vinyl Chloride	ND	U	0.50	0.075	1	03/26/20 16:28	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	84	68 - 117	03/26/20 16:28	
Dibromofluoromethane	83	73 - 122	03/26/20 16:28	
Toluene-d8	85	65 - 144	03/26/20 16:28	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	DUP-SW_20200313-STM1	**Units:**	ug/L
Lab Code:	K2002352-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	03/26/20 16:50	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	03/26/20 16:50	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	03/26/20 16:50	
Vinyl Chloride	ND	U	0.50	0.075	1	03/26/20 16:50	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	86	68 - 117	03/26/20 16:50	
Dibromofluoromethane	82	73 - 122	03/26/20 16:50	
Toluene-d8	86	65 - 144	03/26/20 16:50	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:50
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-5A_20200313	**Units:**	ug/L
Lab Code:	K2002352-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	03/26/20 17:13	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	03/26/20 17:13	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	03/26/20 17:13	
Vinyl Chloride	ND	U	0.50	0.075	1	03/26/20 17:13	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	85	68 - 117	03/26/20 17:13	
Dibromofluoromethane	82	73 - 122	03/26/20 17:13	
Toluene-d8	84	65 - 144	03/26/20 17:13	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:55
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-2E-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	03/26/20 17:36	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	03/26/20 17:36	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	03/26/20 17:36	
Vinyl Chloride	ND	U	0.50	0.075	1	03/26/20 17:36	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	83	68 - 117	03/26/20 17:36	
Dibromofluoromethane	83	73 - 122	03/26/20 17:36	
Toluene-d8	85	65 - 144	03/26/20 17:36	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 13:20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-4A_20200313	**Units:**	ug/L
Lab Code:	K2002352-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	03/26/20 17:57	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	03/26/20 17:57	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	03/26/20 17:57	
Vinyl Chloride	ND	U	0.50	0.075	1	03/26/20 17:57	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	85	68 - 117	03/26/20 17:57	
Dibromofluoromethane	81	73 - 122	03/26/20 17:57	
Toluene-d8	85	65 - 144	03/26/20 17:57	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 13:30
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-6A-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	03/26/20 18:19	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	03/26/20 18:19	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	03/26/20 18:19	
Vinyl Chloride	ND	U	0.50	0.075	1	03/26/20 18:19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	84	68 - 117	03/26/20 18:19	
Dibromofluoromethane	83	73 - 122	03/26/20 18:19	
Toluene-d8	86	65 - 144	03/26/20 18:19	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:00
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	K2002352-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	03/26/20 18:40	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	03/26/20 18:40	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	03/26/20 18:40	
Vinyl Chloride	ND	U	0.50	0.075	1	03/26/20 18:40	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	86	68 - 117	03/26/20 18:40	
Dibromofluoromethane	82	73 - 122	03/26/20 18:40	
Toluene-d8	85	65 - 144	03/26/20 18:40	

Semivolatile Organic Compounds by GC/MS

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:00
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	STM-1-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-001	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	ND	U	0.020	0.0012	1	03/19/20 14:12	3/18/20	
Anthracene	ND	U	0.020	0.00082	1	03/19/20 14:12	3/18/20	
Benz(a)anthracene	**0.0031**	**J**	0.020	0.00097	1	03/19/20 14:12	3/18/20	
Benzo(a)pyrene	**0.0022**	**J**	0.020	0.0011	1	03/19/20 14:12	3/18/20	
Benzo(b)fluoranthene	**0.0016**	**J**	0.020	0.00083	1	03/19/20 14:12	3/18/20	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	03/19/20 14:12	3/18/20	
Chrysene	**0.0016**	**J**	0.020	0.00076	1	03/19/20 14:12	3/18/20	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	03/19/20 14:12	3/18/20	*
Fluoranthene	**0.0055**	**J**	0.020	0.00082	1	03/19/20 14:12	3/18/20	
Fluorene	**0.0023**	**J**	0.020	0.0011	1	03/19/20 14:12	3/18/20	
Indeno(1,2,3-cd)pyrene	**0.0010**	**J**	0.020	0.00089	1	03/19/20 14:12	3/18/20	*
Pyrene	**0.0096**	**J**	0.020	0.0010	1	03/19/20 14:12	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	99	42 - 133	03/19/20 14:12	
Fluorene-d10	106	42 - 131	03/19/20 14:12	
Terphenyl-d14	87	32 - 129	03/19/20 14:12	

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dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:05
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	E-1-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-002	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	**0.0028**	**J**	0.020	0.0012	1	03/19/20 14:35	3/18/20	
Anthracene	ND	U	0.020	0.00082	1	03/19/20 14:35	3/18/20	
Benz(a)anthracene	**0.0026**	**J**	0.020	0.00097	1	03/19/20 14:35	3/18/20	
Benzo(a)pyrene	**0.0026**	**J**	0.020	0.0011	1	03/19/20 14:35	3/18/20	
Benzo(b)fluoranthene	**0.0030**	**J**	0.020	0.00083	1	03/19/20 14:35	3/18/20	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	03/19/20 14:35	3/18/20	
Chrysene	**0.0036**	**J**	0.020	0.00076	1	03/19/20 14:35	3/18/20	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	03/19/20 14:35	3/18/20	*
Fluoranthene	**0.018**	**J**	0.020	0.00082	1	03/19/20 14:35	3/18/20	
Fluorene	**0.0039**	**J**	0.020	0.0011	1	03/19/20 14:35	3/18/20	
Indeno(1,2,3-cd)pyrene	**0.0015**	**J**	0.020	0.00089	1	03/19/20 14:35	3/18/20	*
Pyrene	**0.024**		0.020	0.0010	1	03/19/20 14:35	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	92	42 - 133	03/19/20 14:35	
Fluorene-d10	99	42 - 131	03/19/20 14:35	
Terphenyl-d14	85	32 - 129	03/19/20 14:35	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	DUP-SW_20200313-STM1	**Units:**	ug/L
Lab Code:	K2002352-003	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	**0.0013**	**J**	0.020	0.0012	1	03/19/20 14:58	3/18/20	
Anthracene	ND	U	0.020	0.00082	1	03/19/20 14:58	3/18/20	
Benz(a)anthracene	**0.0026**	**J**	0.020	0.00097	1	03/19/20 14:58	3/18/20	
Benzo(a)pyrene	**0.0012**	**J**	0.020	0.0011	1	03/19/20 14:58	3/18/20	
Benzo(b)fluoranthene	ND	U	0.020	0.00083	1	03/19/20 14:58	3/18/20	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	03/19/20 14:58	3/18/20	
Chrysene	**0.0016**	**J**	0.020	0.00076	1	03/19/20 14:58	3/18/20	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	03/19/20 14:58	3/18/20	*
Fluoranthene	**0.0056**	**J**	0.020	0.00082	1	03/19/20 14:58	3/18/20	
Fluorene	**0.0022**	**J**	0.020	0.0011	1	03/19/20 14:58	3/18/20	
Indeno(1,2,3-cd)pyrene	**0.00093**	**J**	0.020	0.00089	1	03/19/20 14:58	3/18/20	*
Pyrene	**0.0092**	**J**	0.020	0.0010	1	03/19/20 14:58	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	95	42 - 133	03/19/20 14:58	
Fluorene-d10	100	42 - 131	03/19/20 14:58	
Terphenyl-d14	79	32 - 129	03/19/20 14:58	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:50
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-5A_20200313	**Units:**	ug/L
Lab Code:	K2002352-004	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	**0.0012**	**J**	0.020	0.0012	1	03/19/20 15:21	3/18/20	
Anthracene	ND	U	0.020	0.00082	1	03/19/20 15:21	3/18/20	
Benz(a)anthracene	**0.0027**	**J**	0.020	0.00097	1	03/19/20 15:21	3/18/20	
Benzo(a)pyrene	**0.0036**	**J**	0.020	0.0011	1	03/19/20 15:21	3/18/20	
Benzo(b)fluoranthene	**0.0033**	**J**	0.020	0.00083	1	03/19/20 15:21	3/18/20	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	03/19/20 15:21	3/18/20	
Chrysene	**0.0033**	**J**	0.020	0.00076	1	03/19/20 15:21	3/18/20	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	03/19/20 15:21	3/18/20	*
Fluoranthene	**0.016**	**J**	0.020	0.00082	1	03/19/20 15:21	3/18/20	
Fluorene	**0.0029**	**J**	0.020	0.0011	1	03/19/20 15:21	3/18/20	
Indeno(1,2,3-cd)pyrene	**0.0024**	**J**	0.020	0.00089	1	03/19/20 15:21	3/18/20	*
Pyrene	**0.025**		0.020	0.0010	1	03/19/20 15:21	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	94	42 - 133	03/19/20 15:21	
Fluorene-d10	101	42 - 131	03/19/20 15:21	
Terphenyl-d14	78	32 - 129	03/19/20 15:21	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:55
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-2E-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-005	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	ND	U	0.020	0.0012	1	03/19/20 15:44	3/18/20	
Anthracene	ND	U	0.020	0.00082	1	03/19/20 15:44	3/18/20	
Benz(a)anthracene	**0.0026**	**J**	0.020	0.00097	1	03/19/20 15:44	3/18/20	
Benzo(a)pyrene	ND	U	0.020	0.0011	1	03/19/20 15:44	3/18/20	
Benzo(b)fluoranthene	ND	U	0.020	0.00083	1	03/19/20 15:44	3/18/20	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	03/19/20 15:44	3/18/20	
Chrysene	ND	U	0.020	0.00076	1	03/19/20 15:44	3/18/20	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	03/19/20 15:44	3/18/20	*
Fluoranthene	**0.0023**	**J**	0.020	0.00082	1	03/19/20 15:44	3/18/20	
Fluorene	**0.0014**	**J**	0.020	0.0011	1	03/19/20 15:44	3/18/20	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.00089	1	03/19/20 15:44	3/18/20	*
Pyrene	**0.0039**	**J**	0.020	0.0010	1	03/19/20 15:44	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	97	42 - 133	03/19/20 15:44	
Fluorene-d10	103	42 - 131	03/19/20 15:44	
Terphenyl-d14	74	32 - 129	03/19/20 15:44	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 13:20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-4A_20200313	**Units:**	ug/L
Lab Code:	K2002352-006	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	ND	U	0.020	0.0012	1	03/19/20 16:07	3/18/20	
Anthracene	ND	U	0.020	0.00082	1	03/19/20 16:07	3/18/20	
Benz(a)anthracene	**0.0018**	**J**	0.020	0.00097	1	03/19/20 16:07	3/18/20	
Benzo(a)pyrene	ND	U	0.020	0.0011	1	03/19/20 16:07	3/18/20	
Benzo(b)fluoranthene	ND	U	0.020	0.00083	1	03/19/20 16:07	3/18/20	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	03/19/20 16:07	3/18/20	
Chrysene	ND	U	0.020	0.00076	1	03/19/20 16:07	3/18/20	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	03/19/20 16:07	3/18/20	*
Fluoranthene	ND	U	0.020	0.00082	1	03/19/20 16:07	3/18/20	
Fluorene	ND	U	0.020	0.0011	1	03/19/20 16:07	3/18/20	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.00089	1	03/19/20 16:07	3/18/20	*
Pyrene	ND	U	0.020	0.0010	1	03/19/20 16:07	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	101	42 - 133	03/19/20 16:07	
Fluorene-d10	104	42 - 131	03/19/20 16:07	
Terphenyl-d14	79	32 - 129	03/19/20 16:07	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 13:30
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-6A-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-007	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	ND	U	0.020	0.0012	1	03/19/20 16:30	3/18/20	
Anthracene	ND	U	0.020	0.00082	1	03/19/20 16:30	3/18/20	
Benz(a)anthracene	**0.0031**	**J**	0.020	0.00097	1	03/19/20 16:30	3/18/20	
Benzo(a)pyrene	ND	U	0.020	0.0011	1	03/19/20 16:30	3/18/20	
Benzo(b)fluoranthene	ND	U	0.020	0.00083	1	03/19/20 16:30	3/18/20	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	03/19/20 16:30	3/18/20	
Chrysene	ND	U	0.020	0.00076	1	03/19/20 16:30	3/18/20	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	03/19/20 16:30	3/18/20	*
Fluoranthene	**0.0026**	**J**	0.020	0.00082	1	03/19/20 16:30	3/18/20	
Fluorene	**0.0011**	**J**	0.020	0.0011	1	03/19/20 16:30	3/18/20	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.00089	1	03/19/20 16:30	3/18/20	*
Pyrene	**0.0034**	**J**	0.020	0.0010	1	03/19/20 16:30	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	102	42 - 133	03/19/20 16:30	
Fluorene-d10	106	42 - 131	03/19/20 16:30	
Terphenyl-d14	76	32 - 129	03/19/20 16:30	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:00
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	STM-1-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-001	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.76**	**J**	1.0	0.14	1	03/24/20 20:45	3/18/20	
Butyl Benzyl Phthalate	ND	U	0.20	0.022	1	03/24/20 20:45	3/18/20	
Diethyl Phthalate	**0.082**	**J**	0.20	0.016	1	03/24/20 20:45	3/18/20	
Dimethyl Phthalate	**0.87**		0.20	0.022	1	03/24/20 20:45	3/18/20	
Di-n-butyl Phthalate	**0.30**		0.20	0.024	1	03/24/20 20:45	3/18/20	
Di-n-octyl Phthalate	ND	U	0.20	0.034	1	03/24/20 20:45	3/18/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	77	35 - 105	03/24/20 20:45	
Nitrobenzene-d5	87	40 - 117	03/24/20 20:45	
p-Terphenyl-d14	67	48 - 109	03/24/20 20:45	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:05
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	E-1-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-002	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.87**	**J**	0.95	0.13	1	03/24/20 21:13	3/18/20	
Butyl Benzyl Phthalate	ND	U	0.19	0.021	1	03/24/20 21:13	3/18/20	
Diethyl Phthalate	**0.12**	**J**	0.19	0.015	1	03/24/20 21:13	3/18/20	
Dimethyl Phthalate	**1.9**		0.19	0.021	1	03/24/20 21:13	3/18/20	
Di-n-butyl Phthalate	**0.39**		0.19	0.023	1	03/24/20 21:13	3/18/20	
Di-n-octyl Phthalate	ND	U	0.19	0.033	1	03/24/20 21:13	3/18/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	76	35 - 105	03/24/20 21:13	
Nitrobenzene-d5	85	40 - 117	03/24/20 21:13	
p-Terphenyl-d14	61	48 - 109	03/24/20 21:13	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	DUP-SW_20200313-STM1	**Units:**	ug/L
Lab Code:	K2002352-003	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.44**	**J**	0.98	0.13	1	03/24/20 21:41	3/18/20	
Butyl Benzyl Phthalate	ND	U	0.20	0.021	1	03/24/20 21:41	3/18/20	
Diethyl Phthalate	**0.081**	**J**	0.20	0.015	1	03/24/20 21:41	3/18/20	
Dimethyl Phthalate	**1.1**		0.20	0.021	1	03/24/20 21:41	3/18/20	
Di-n-butyl Phthalate	**0.29**		0.20	0.023	1	03/24/20 21:41	3/18/20	
Di-n-octyl Phthalate	ND	U	0.20	0.033	1	03/24/20 21:41	3/18/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	72	35 - 105	03/24/20 21:41	
Nitrobenzene-d5	85	40 - 117	03/24/20 21:41	
p-Terphenyl-d14	61	48 - 109	03/24/20 21:41	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:50
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-5A_20200313	**Units:**	ug/L
Lab Code:	K2002352-004	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.40**	**J**	0.98	0.13	1	03/24/20 22:10	3/18/20	
Butyl Benzyl Phthalate	ND	U	0.20	0.021	1	03/24/20 22:10	3/18/20	
Diethyl Phthalate	**0.15**	**J**	0.20	0.015	1	03/24/20 22:10	3/18/20	
Dimethyl Phthalate	**1.6**		0.20	0.021	1	03/24/20 22:10	3/18/20	
Di-n-butyl Phthalate	**0.15**	**J**	0.20	0.023	1	03/24/20 22:10	3/18/20	
Di-n-octyl Phthalate	**0.092**	**J**	0.20	0.033	1	03/24/20 22:10	3/18/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	66	35 - 105	03/24/20 22:10	
Nitrobenzene-d5	78	40 - 117	03/24/20 22:10	
p-Terphenyl-d14	58	48 - 109	03/24/20 22:10	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:55
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-2E-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-005	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.50**	**J**	0.95	0.13	1	03/24/20 22:38	3/18/20	
Butyl Benzyl Phthalate	ND	U	0.19	0.021	1	03/24/20 22:38	3/18/20	
Diethyl Phthalate	**0.044**	**J**	0.19	0.015	1	03/24/20 22:38	3/18/20	
Dimethyl Phthalate	**0.086**	**J**	0.19	0.021	1	03/24/20 22:38	3/18/20	
Di-n-butyl Phthalate	**0.094**	**J**	0.19	0.023	1	03/24/20 22:38	3/18/20	
Di-n-octyl Phthalate	ND	U	0.19	0.033	1	03/24/20 22:38	3/18/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	72	35 - 105	03/24/20 22:38	
Nitrobenzene-d5	84	40 - 117	03/24/20 22:38	
p-Terphenyl-d14	62	48 - 109	03/24/20 22:38	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 13:20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-4A_20200313	**Units:**	ug/L
Lab Code:	K2002352-006	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.20**	**J**	0.98	0.13	1	03/24/20 23:07	3/18/20	
Butyl Benzyl Phthalate	**0.12**	**J**	0.20	0.021	1	03/24/20 23:07	3/18/20	
Diethyl Phthalate	ND	U	0.20	0.015	1	03/24/20 23:07	3/18/20	
Dimethyl Phthalate	ND	U	0.20	0.021	1	03/24/20 23:07	3/18/20	
Di-n-butyl Phthalate	**0.055**	**J**	0.20	0.023	1	03/24/20 23:07	3/18/20	
Di-n-octyl Phthalate	ND	U	0.20	0.033	1	03/24/20 23:07	3/18/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	71	35 - 105	03/24/20 23:07	
Nitrobenzene-d5	77	40 - 117	03/24/20 23:07	
p-Terphenyl-d14	69	48 - 109	03/24/20 23:07	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 13:30
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-6A-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-007	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	ND	U	0.95	0.13	1	03/24/20 23:35	3/18/20	
Butyl Benzyl Phthalate	ND	U	0.19	0.021	1	03/24/20 23:35	3/18/20	
Diethyl Phthalate	ND	U	0.19	0.015	1	03/24/20 23:35	3/18/20	
Dimethyl Phthalate	**0.18**	**J**	0.19	0.021	1	03/24/20 23:35	3/18/20	
Di-n-butyl Phthalate	**0.059**	**J**	0.19	0.023	1	03/24/20 23:35	3/18/20	
Di-n-octyl Phthalate	ND	U	0.19	0.033	1	03/24/20 23:35	3/18/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	63	35 - 105	03/24/20 23:35	
Nitrobenzene-d5	71	40 - 117	03/24/20 23:35	
p-Terphenyl-d14	63	48 - 109	03/24/20 23:35	

Semivolatile Organic Compounds by GC

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:00
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	STM-1-SW_20200313	**Units:**	ng/L
Lab Code:	K2002352-001	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND	Ui	9.2	9.2	1	04/08/20 02:18	3/18/20	
Chlordane	ND	U	20	3.8	1	04/08/20 02:18	3/18/20	
4,4'-DDD	ND	U	2.0	0.57	1	04/08/20 02:18	3/18/20	
4,4'-DDE	ND	U	1.0	0.46	1	04/08/20 02:18	3/18/20	
4,4'-DDT	ND	Ui	3.6	3.6	1	04/08/20 02:18	3/18/20	
Dieldrin	ND	U	1.0	0.44	1	04/08/20 02:18	3/18/20	
Heptachlor Epoxide	**0.97**	**JP**	1.0	0.29	1	04/08/20 02:18	3/18/20	
Hexachlorobenzene	ND	U	1.0	0.27	1	04/08/20 02:18	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	53	14 - 160	04/08/20 02:18	
Tetrachloro-m-xylene	90	30 - 148	04/08/20 02:18	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:05
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	E-1-SW_20200313	**Units:**	ng/L
Lab Code:	K2002352-002	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND	Ui	23	23	1	04/08/20 02:48	3/18/20	
Chlordane	ND	U	20	3.8	1	04/08/20 02:48	3/18/20	
4,4'-DDD	ND	Ui	1.1	1.1	1	04/08/20 02:48	3/18/20	*
4,4'-DDE	**0.58**	**JP**	1.0	0.46	1	04/08/20 02:48	3/18/20	
4,4'-DDT	ND	Ui	5.7	5.7	1	04/08/20 02:48	3/18/20	
Dieldrin	ND	U	1.0	0.44	1	04/08/20 02:48	3/18/20	
Heptachlor Epoxide	ND	Ui	1.0	1.0	1	04/08/20 02:48	3/18/20	
Hexachlorobenzene	ND	U	1.0	0.27	1	04/08/20 02:48	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	44	14 - 160	04/08/20 02:48	
Tetrachloro-m-xylene	77	30 - 148	04/08/20 02:48	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	DUP-SW_20200313-STM1	**Units:**	ng/L
Lab Code:	K2002352-003	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND	Ui	7.0	7.0	1	04/08/20 03:17	3/18/20	
Chlordane	ND	U	20	3.8	1	04/08/20 03:17	3/18/20	
4,4'-DDD	**0.75**	**J**	2.0	0.57	1	04/08/20 03:17	3/18/20	*
4,4'-DDE	ND	U	1.0	0.46	1	04/08/20 03:17	3/18/20	
4,4'-DDT	ND	Ui	7.6	7.6	1	04/08/20 03:17	3/18/20	
Dieldrin	ND	Ui	1.0	0.74	1	04/08/20 03:17	3/18/20	
Heptachlor Epoxide	**1.2**		1.0	0.29	1	04/08/20 03:17	3/18/20	
Hexachlorobenzene	ND	U	1.0	0.27	1	04/08/20 03:17	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	46	14 - 160	04/08/20 03:17	
Tetrachloro-m-xylene	85	30 - 148	04/08/20 03:17	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:50
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-5A_20200313	**Units:**	ng/L
Lab Code:	K2002352-004	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND	Ui	3.8	3.8	1	04/08/20 03:47	3/18/20	
Chlordane	ND	U	20	3.8	1	04/08/20 03:47	3/18/20	
4,4'-DDD	ND	U	2.0	0.57	1	04/08/20 03:47	3/18/20	
4,4'-DDE	ND	U	1.0	0.46	1	04/08/20 03:47	3/18/20	
4,4'-DDT	ND	Ui	4.8	4.8	1	04/08/20 03:47	3/18/20	
Dieldrin	ND	U	1.0	0.44	1	04/08/20 03:47	3/18/20	
Heptachlor Epoxide	ND	Ui	1.9	1.9	1	04/08/20 03:47	3/18/20	
Hexachlorobenzene	ND	U	1.0	0.27	1	04/08/20 03:47	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	39	14 - 160	04/08/20 03:47	
Tetrachloro-m-xylene	80	30 - 148	04/08/20 03:47	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:55
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-2E-SW_20200313	**Units:**	ng/L
Lab Code:	K2002352-005	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND	Ui	1.3	1.3	1	04/08/20 04:17	3/18/20	
Chlordane	ND	U	20	3.8	1	04/08/20 04:17	3/18/20	
4,4'-DDD	**1.1**	**J**	2.0	0.57	1	04/08/20 04:17	3/18/20	*
4,4'-DDE	ND	U	1.0	0.46	1	04/08/20 04:17	3/18/20	
4,4'-DDT	ND	Ui	2.2	2.2	1	04/08/20 04:17	3/18/20	
Dieldrin	ND	Ui	1.0	0.74	1	04/08/20 04:17	3/18/20	
Heptachlor Epoxide	**0.84**	**J**	1.0	0.29	1	04/08/20 04:17	3/18/20	
Hexachlorobenzene	ND	U	1.0	0.27	1	04/08/20 04:17	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	43	14 - 160	04/08/20 04:17	
Tetrachloro-m-xylene	68	30 - 148	04/08/20 04:17	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 13:20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-4A_20200313	**Units:**	ng/L
Lab Code:	K2002352-006	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND U	2.0	0.77	1	04/08/20 04:46	3/18/20	
Chlordane	ND U	20	3.8	1	04/08/20 04:46	3/18/20	
4,4'-DDD	ND U	2.0	0.57	1	04/08/20 04:46	3/18/20	*
4,4'-DDE	ND U	1.0	0.46	1	04/08/20 04:46	3/18/20	
4,4'-DDT	ND U	2.0	0.75	1	04/08/20 04:46	3/18/20	
Dieldrin	ND U	1.0	0.44	1	04/08/20 04:46	3/18/20	
Heptachlor Epoxide	ND U	1.0	0.29	1	04/08/20 04:46	3/18/20	
Hexachlorobenzene	ND U	1.0	0.27	1	04/08/20 04:46	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	64	14 - 160	04/08/20 04:46	
Tetrachloro-m-xylene	98	30 - 148	04/08/20 04:46	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 13:30
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-6A-SW_20200313	**Units:**	ng/L
Lab Code:	K2002352-007	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND	U	2.0	0.77	1	04/08/20 05:16	3/18/20	
Chlordane	ND	U	20	3.8	1	04/08/20 05:16	3/18/20	
4,4'-DDD	ND	U	2.0	0.57	1	04/08/20 05:16	3/18/20	
4,4'-DDE	ND	U	1.0	0.46	1	04/08/20 05:16	3/18/20	
4,4'-DDT	ND	Ui	5.6	5.6	1	04/08/20 05:16	3/18/20	
Dieldrin	ND	U	1.0	0.44	1	04/08/20 05:16	3/18/20	
Heptachlor Epoxide	ND	Ui	1.1	1.1	1	04/08/20 05:16	3/18/20	
Hexachlorobenzene	ND	U	1.0	0.27	1	04/08/20 05:16	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	46	14 - 160	04/08/20 05:16	
Tetrachloro-m-xylene	99	30 - 148	04/08/20 05:16	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:00
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	STM-1-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-001	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1268	**0.038**	0.0050	0.0032	1	03/19/20 21:56	3/18/20	
Aroclor 1262	ND U	0.0050	0.0032	1	03/19/20 21:56	3/18/20	
Aroclor 1016	ND U	0.0050	0.0032	1	03/19/20 21:56	3/18/20	
Aroclor 1221	ND U	0.010	0.0032	1	03/19/20 21:56	3/18/20	
Aroclor 1232	ND U	0.0050	0.0032	1	03/19/20 21:56	3/18/20	
Aroclor 1242	ND U	0.0050	0.0032	1	03/19/20 21:56	3/18/20	
Aroclor 1248	ND U	0.0050	0.0032	1	03/19/20 21:56	3/18/20	
Aroclor 1254	ND U	0.0050	0.0032	1	03/19/20 21:56	3/18/20	
Aroclor 1260	ND U	0.0050	0.0032	1	03/19/20 21:56	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	82	70 - 130	03/19/20 21:56	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:05
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	E-1-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-002	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1262	ND	U	0.0050	0.0032	1	03/19/20 22:24	3/18/20	
Aroclor 1268	**0.079**		0.0050	0.0032	1	03/19/20 22:24	3/18/20	
Aroclor 1016	ND	U	0.0050	0.0032	1	03/19/20 22:24	3/18/20	
Aroclor 1221	ND	U	0.010	0.0032	1	03/19/20 22:24	3/18/20	
Aroclor 1232	ND	U	0.0050	0.0032	1	03/19/20 22:24	3/18/20	
Aroclor 1242	ND	U	0.0050	0.0032	1	03/19/20 22:24	3/18/20	
Aroclor 1248	ND	U	0.0050	0.0032	1	03/19/20 22:24	3/18/20	
Aroclor 1254	ND	U	0.0050	0.0032	1	03/19/20 22:24	3/18/20	
Aroclor 1260	ND	U	0.0050	0.0032	1	03/19/20 22:24	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	80	70 - 130	03/19/20 22:24	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	DUP-SW_20200313-STM1	**Units:**	ug/L
Lab Code:	K2002352-003	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1268	**0.037**	0.0050	0.0032	1	03/19/20 22:52	3/18/20	
Aroclor 1262	ND U	0.0050	0.0032	1	03/19/20 22:52	3/18/20	
Aroclor 1016	ND U	0.0050	0.0032	1	03/19/20 22:52	3/18/20	
Aroclor 1221	ND U	0.010	0.0032	1	03/19/20 22:52	3/18/20	
Aroclor 1232	ND U	0.0050	0.0032	1	03/19/20 22:52	3/18/20	
Aroclor 1242	ND U	0.0050	0.0032	1	03/19/20 22:52	3/18/20	
Aroclor 1248	ND U	0.0050	0.0032	1	03/19/20 22:52	3/18/20	
Aroclor 1254	ND U	0.0050	0.0032	1	03/19/20 22:52	3/18/20	
Aroclor 1260	ND U	0.0050	0.0032	1	03/19/20 22:52	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	77	70 - 130	03/19/20 22:52	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:50
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-5A_20200313	**Units:**	ug/L
Lab Code:	K2002352-004	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1262	ND	U	0.0050	0.0032	1	03/19/20 23:20	3/18/20	
Aroclor 1268	**0.0062**		0.0050	0.0032	1	03/19/20 23:20	3/18/20	
Aroclor 1016	ND	U	0.0050	0.0032	1	03/19/20 23:20	3/18/20	
Aroclor 1221	ND	U	0.010	0.0032	1	03/19/20 23:20	3/18/20	
Aroclor 1232	ND	U	0.0050	0.0032	1	03/19/20 23:20	3/18/20	
Aroclor 1242	ND	U	0.0050	0.0032	1	03/19/20 23:20	3/18/20	
Aroclor 1248	ND	U	0.0050	0.0032	1	03/19/20 23:20	3/18/20	
Aroclor 1254	ND	U	0.0050	0.0032	1	03/19/20 23:20	3/18/20	
Aroclor 1260	ND	U	0.0050	0.0032	1	03/19/20 23:20	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	66	70 - 130	03/19/20 23:20	*

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:55
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-2E-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-005	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1262	ND	U	0.0050	0.0032	1	03/19/20 23:47	3/18/20	
Aroclor 1268	**0.014**		0.0050	0.0032	1	03/19/20 23:47	3/18/20	
Aroclor 1016	ND	U	0.0050	0.0032	1	03/19/20 23:47	3/18/20	
Aroclor 1221	ND	U	0.010	0.0032	1	03/19/20 23:47	3/18/20	
Aroclor 1232	ND	U	0.0050	0.0032	1	03/19/20 23:47	3/18/20	
Aroclor 1242	ND	U	0.0050	0.0032	1	03/19/20 23:47	3/18/20	
Aroclor 1248	ND	U	0.0050	0.0032	1	03/19/20 23:47	3/18/20	
Aroclor 1254	ND	U	0.0050	0.0032	1	03/19/20 23:47	3/18/20	
Aroclor 1260	ND	U	0.0050	0.0032	1	03/19/20 23:47	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	76	70 - 130	03/19/20 23:47	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 13:20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-4A_20200313	**Units:**	ug/L
Lab Code:	K2002352-006	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1268	ND U	0.0050	0.0032	1	03/20/20 00:15	3/18/20	
Aroclor 1262	ND U	0.0050	0.0032	1	03/20/20 00:15	3/18/20	
Aroclor 1016	ND U	0.0050	0.0032	1	03/20/20 00:15	3/18/20	
Aroclor 1221	ND U	0.010	0.0032	1	03/20/20 00:15	3/18/20	
Aroclor 1232	ND U	0.0050	0.0032	1	03/20/20 00:15	3/18/20	
Aroclor 1242	ND U	0.0050	0.0032	1	03/20/20 00:15	3/18/20	
Aroclor 1248	ND U	0.0050	0.0032	1	03/20/20 00:15	3/18/20	
Aroclor 1254	ND U	0.0050	0.0032	1	03/20/20 00:15	3/18/20	
Aroclor 1260	ND U	0.0050	0.0032	1	03/20/20 00:15	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	79	70 - 130	03/20/20 00:15	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 13:30
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-6A-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-007	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1268	ND	U	0.0050	0.0032	1	03/20/20 00:43	3/18/20	
Aroclor 1262	ND	U	0.0050	0.0032	1	03/20/20 00:43	3/18/20	
Aroclor 1016	ND	U	0.0050	0.0032	1	03/20/20 00:43	3/18/20	
Aroclor 1221	ND	U	0.010	0.0032	1	03/20/20 00:43	3/18/20	
Aroclor 1232	ND	U	0.0050	0.0032	1	03/20/20 00:43	3/18/20	
Aroclor 1242	ND	U	0.0050	0.0032	1	03/20/20 00:43	3/18/20	
Aroclor 1248	ND	U	0.0050	0.0032	1	03/20/20 00:43	3/18/20	
Aroclor 1254	ND	U	0.0050	0.0032	1	03/20/20 00:43	3/18/20	
Aroclor 1260	ND	U	0.0050	0.0032	1	03/20/20 00:43	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	64	70 - 130	03/20/20 00:43	*

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:00
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	STM-1-SW_20200313	**Basis:**	NA
Lab Code:	K2002352-001		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.40**	**J**	ug/L	0.50	0.09	1	03/19/20 13:30	03/18/20	
Cadmium	6020A	**0.150**		ug/L	0.020	0.008	1	03/19/20 13:30	03/18/20	
Copper	6020A	**13.0**		ug/L	0.10	0.05	1	03/19/20 13:30	03/18/20	
Iron	6020A	**728**		ug/L	2.0	0.3	1	03/19/20 13:30	03/18/20	
Lead	6020A	**1.44**		ug/L	0.020	0.006	1	03/19/20 13:30	03/18/20	
Manganese	6020A	**56.2**		ug/L	0.20	0.04	1	03/19/20 13:30	03/18/20	
Mercury	7470A	ND	U	ug/L	0.20	0.02	1	03/19/20 15:23	03/18/20	
Nickel	6020A	**5.75**		ug/L	0.20	0.04	1	03/19/20 13:30	03/18/20	
Zinc	6020A	**156**		ug/L	2.0	0.5	1	03/19/20 13:30	03/18/20	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:05
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	E-1-SW_20200313	**Basis:**	NA
Lab Code:	K2002352-002		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**1.01**	ug/L	0.50	0.09	1	03/19/20 13:22	03/18/20	
Cadmium	6020A	**0.167**	ug/L	0.020	0.008	1	03/19/20 13:22	03/18/20	
Copper	6020A	**14.7**	ug/L	0.10	0.05	1	03/19/20 13:22	03/18/20	
Iron	6020A	**797**	ug/L	2.0	0.3	1	03/19/20 13:22	03/18/20	
Lead	6020A	**6.83**	ug/L	0.020	0.006	1	03/19/20 13:22	03/18/20	
Manganese	6020A	**18.0**	ug/L	0.20	0.04	1	03/19/20 13:22	03/18/20	
Mercury	7470A	ND	ug/L	0.20	0.02	1	03/19/20 15:30	03/18/20	U
Nickel	6020A	**2.80**	ug/L	0.20	0.04	1	03/19/20 13:22	03/18/20	
Zinc	6020A	**295**	ug/L	2.0	0.5	1	03/19/20 13:22	03/18/20	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	DUP-SW_20200313-STM1	**Basis:**	NA
Lab Code:	K2002352-003		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.38**	**J**	ug/L	0.50	0.09	1	03/19/20 13:32	03/18/20	
Cadmium	6020A	**0.135**		ug/L	0.020	0.008	1	03/19/20 13:32	03/18/20	
Copper	6020A	**14.8**		ug/L	0.10	0.05	1	03/19/20 13:32	03/18/20	
Iron	6020A	**617**		ug/L	2.0	0.3	1	03/19/20 13:32	03/18/20	
Lead	6020A	**1.22**		ug/L	0.020	0.006	1	03/19/20 13:32	03/18/20	
Manganese	6020A	**50.9**		ug/L	0.20	0.04	1	03/19/20 13:32	03/18/20	
Nickel	6020A	**6.59**		ug/L	0.20	0.04	1	03/19/20 13:32	03/18/20	
Zinc	6020A	**160**		ug/L	2.0	0.5	1	03/19/20 13:32	03/18/20	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:50
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-5A_20200313	**Basis:**	NA
Lab Code:	K2002352-004		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.32**	**J**	ug/L	0.50	0.09	1	03/19/20 13:34	03/18/20	
Cadmium	6020A	**0.063**		ug/L	0.020	0.008	1	03/19/20 13:34	03/18/20	
Copper	6020A	**11.9**		ug/L	0.10	0.05	1	03/19/20 13:34	03/18/20	
Iron	6020A	**630**		ug/L	2.0	0.3	1	03/19/20 13:34	03/18/20	
Lead	6020A	**1.53**		ug/L	0.020	0.006	1	03/19/20 13:34	03/18/20	
Manganese	6020A	**22.2**		ug/L	0.20	0.04	1	03/19/20 13:34	03/18/20	
Nickel	6020A	**1.87**		ug/L	0.20	0.04	1	03/19/20 13:34	03/18/20	
Zinc	6020A	**122**		ug/L	2.0	0.5	1	03/19/20 13:34	03/18/20	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:55
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-2E-SW_20200313	**Basis:**	NA
Lab Code:	K2002352-005		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.40**	**J**	ug/L	0.50	0.09	1	03/19/20 13:39	03/18/20	
Cadmium	6020A	**0.116**		ug/L	0.020	0.008	1	03/19/20 13:39	03/18/20	
Copper	6020A	**6.21**		ug/L	0.10	0.05	1	03/19/20 13:39	03/18/20	
Iron	6020A	**478**		ug/L	2.0	0.3	1	03/19/20 13:39	03/18/20	
Lead	6020A	**0.498**		ug/L	0.020	0.006	1	03/19/20 13:39	03/18/20	
Manganese	6020A	**13.8**		ug/L	0.20	0.04	1	03/19/20 13:39	03/18/20	
Mercury	7470A	ND	U	ug/L	0.20	0.02	1	03/19/20 15:32	03/18/20	
Nickel	6020A	**1.09**		ug/L	0.20	0.04	1	03/19/20 13:39	03/18/20	
Zinc	6020A	**127**		ug/L	2.0	0.5	1	03/19/20 13:39	03/18/20	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 13:20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-4A_20200313	**Basis:**	NA
Lab Code:	K2002352-006		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.30** J	ug/L	0.50	0.09	1	03/19/20 13:40	03/18/20	
Cadmium	6020A	**0.077**	ug/L	0.020	0.008	1	03/19/20 13:40	03/18/20	
Copper	6020A	**4.17**	ug/L	0.10	0.05	1	03/19/20 13:40	03/18/20	
Iron	6020A	**699**	ug/L	2.0	0.3	1	03/19/20 13:40	03/18/20	
Lead	6020A	**0.214**	ug/L	0.020	0.006	1	03/19/20 13:40	03/18/20	
Manganese	6020A	**26.0**	ug/L	0.20	0.04	1	03/19/20 13:40	03/18/20	
Mercury	7470A	ND U	ug/L	0.20	0.02	1	03/19/20 15:33	03/18/20	
Nickel	6020A	**1.16**	ug/L	0.20	0.04	1	03/19/20 13:40	03/18/20	
Zinc	6020A	**155**	ug/L	2.0	0.5	1	03/19/20 13:40	03/18/20	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 13:30
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-6A-SW_20200313	**Basis:**	NA
Lab Code:	K2002352-007		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.37**	**J**	ug/L	0.50	0.09	1	03/19/20 13:42	03/18/20	
Cadmium	6020A	**0.100**		ug/L	0.020	0.008	1	03/19/20 13:42	03/18/20	
Copper	6020A	**4.19**		ug/L	0.10	0.05	1	03/19/20 13:42	03/18/20	
Iron	6020A	**462**		ug/L	2.0	0.3	1	03/19/20 13:42	03/18/20	
Lead	6020A	**0.410**		ug/L	0.020	0.006	1	03/19/20 13:42	03/18/20	
Manganese	6020A	**58.1**		ug/L	0.20	0.04	1	03/19/20 13:42	03/18/20	
Nickel	6020A	**0.98**		ug/L	0.20	0.04	1	03/19/20 13:42	03/18/20	
Zinc	6020A	**92.1**		ug/L	2.0	0.5	1	03/19/20 13:42	03/18/20	

General Chemistry

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:00
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	STM-1-SW_20200313	**Basis:**	NA
Lab Code:	K2002352-001		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**7.0**	mg/L	5.0	-	1	03/18/20 09:55	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:05
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	E-1-SW_20200313	**Basis:**	NA
Lab Code:	K2002352-002		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**13.5**	mg/L	5.0	-	1	03/18/20 09:55	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	DUP-SW_20200313-STM1	**Basis:**	NA
Lab Code:	K2002352-003		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**6.5**	mg/L	5.0	-	1	03/18/20 09:55	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:50
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-5A_20200313	**Basis:**	NA
Lab Code:	K2002352-004		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**16.5**	mg/L	5.0	-	1	03/18/20 11:00	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 12:55
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-2E-SW_20200313	**Basis:**	NA
Lab Code:	K2002352-005		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	03/18/20 11:00	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 13:20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-4A_20200313	**Basis:**	NA
Lab Code:	K2002352-006		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	03/18/20 11:00	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20 13:30
Sample Matrix:	Storm Water	**Date Received:**	03/17/20 12:25
Sample Name:	CB-6A-SW_20200313	**Basis:**	NA
Lab Code:	K2002352-007		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	03/18/20 11:00	

QC Summary Forms

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Volatile Organic Compounds by GC/MS

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Client: ERM West, Inc **Service Request:** K2002352
Project: ERM/0533016.04
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: None

Sample Name	Lab Code	4-Bromofluorobenzene 68-117	Dibromofluoromethane 73-122	Toluene-d8 65-144
STM-1-SW_20200313	K2002352-001	83	82	85
E-1-SW_20200313	K2002352-002	84	83	85
DUP-SW_20200313-STM1	K2002352-003	86	82	86
CB-5A_20200313	K2002352-004	85	82	84
CB-2E-SW_20200313	K2002352-005	83	83	85
CB-4A_20200313	K2002352-006	85	81	85
CB-6A-SW_20200313	K2002352-007	84	83	86
Trip Blank	K2002352-008	86	82	85
Method Blank	KQ2004330-04	85	82	84
Lab Control Sample	KQ2004330-02	84	81	85
Duplicate Lab Control Sample	KQ2004330-03	86	82	86

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2004330-04	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	03/26/20 15:42	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	03/26/20 15:42	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	03/26/20 15:42	
Vinyl Chloride	ND	U	0.50	0.075	1	03/26/20 15:42	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	85	68 - 117	03/26/20 15:42	
Dibromofluoromethane	82	73 - 122	03/26/20 15:42	
Toluene-d8	84	65 - 144	03/26/20 15:42	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Analyzed:**	03/26/20
Sample Matrix:	Storm Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	674871

	Lab Control Sample KQ2004330-02			Duplicate Lab Control Sample KQ2004330-03					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloroform	8.59	10.0	86	10.2	10.0	102	70-129	17	30
Tetrachloroethene (PCE)	9.50	10.0	95	11.1	10.0	111	62-126	16	30
Trichloroethene (TCE)	8.58	10.0	86	10.4	10.0	104	67-128	19	30
Vinyl Chloride	8.84	10.0	88	10.3	10.0	103	55-123	15	30

Semivolatile Organic Compounds by GC/MS

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Client: ERM West, Inc **Service Request:** K2002352
Project: ERM/0533016.04
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Extraction Method: EPA 3511

Sample Name	Lab Code	Fluoranthene-d10 42-133	Fluorene-d10 42-131	Terphenyl-d14 32-129
STM-1-SW_20200313	K2002352-001	99	106	87
E-1-SW_20200313	K2002352-002	92	99	85
DUP-SW_20200313-STM1	K2002352-003	95	100	79
CB-5A_20200313	K2002352-004	94	101	78
CB-2E-SW_20200313	K2002352-005	97	103	74
CB-4A_20200313	K2002352-006	101	104	79
CB-6A-SW_20200313	K2002352-007	102	106	76
Method Blank	KQ2003830-03	95	98	68
Lab Control Sample	KQ2003830-01	102	101	75
Duplicate Lab Control Sample	KQ2003830-02	105	104	83

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2003830-03	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	ND	U	0.020	0.0012	1	03/19/20 13:03	3/18/20	
Anthracene	ND	U	0.020	0.00082	1	03/19/20 13:03	3/18/20	
Benz(a)anthracene	**0.0019**	**J**	0.020	0.00097	1	03/19/20 13:03	3/18/20	
Benzo(a)pyrene	ND	U	0.020	0.0011	1	03/19/20 13:03	3/18/20	
Benzo(b)fluoranthene	ND	U	0.020	0.00083	1	03/19/20 13:03	3/18/20	
Benzo(k)fluoranthene	ND	U	0.020	0.00094	1	03/19/20 13:03	3/18/20	
Chrysene	ND	U	0.020	0.00076	1	03/19/20 13:03	3/18/20	
Dibenz(a,h)anthracene	ND	U	0.020	0.0013	1	03/19/20 13:03	3/18/20	
Fluoranthene	ND	U	0.020	0.00082	1	03/19/20 13:03	3/18/20	
Fluorene	ND	U	0.020	0.0011	1	03/19/20 13:03	3/18/20	
Indeno(1,2,3-cd)pyrene	ND	U	0.020	0.00089	1	03/19/20 13:03	3/18/20	
Pyrene	ND	U	0.020	0.0010	1	03/19/20 13:03	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	95	42 - 133	03/19/20 13:03	
Fluorene-d10	98	42 - 131	03/19/20 13:03	
Terphenyl-d14	68	32 - 129	03/19/20 13:03	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Analyzed:**	03/19/20
Sample Matrix:	Storm Water	**Date Extracted:**	03/18/20

Duplicate Lab Control Sample Summary
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method:	8270D	**Units:**	ug/L
Prep Method:	EPA 3511	**Basis:**	NA
		Analysis Lot:	674083

	Lab Control Sample KQ2003830-01			Duplicate Lab Control Sample KQ2003830-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Acenaphthene	2.94	2.78	106	3.19	2.78	115	63-121	8	30
Anthracene	3.16	2.78	114	3.41	2.78	123	68-127	8	30
Benz(a)anthracene	3.04	2.78	109	3.28	2.78	118	74-124	8	30
Benzo(a)pyrene	3.04	2.78	109	3.28	2.78	118	75-131	8	30
Benzo(b)fluoranthene	2.99	2.78	107	3.22	2.78	116	73-136	8	30
Benzo(k)fluoranthene	3.02	2.78	109	3.26	2.78	118	74-134	8	30
Chrysene	3.01	2.78	108	3.24	2.78	117	74-132	8	30
Dibenz(a,h)anthracene	3.55	2.78	128	3.83	2.78	138 *	59-135	8	30
Fluoranthene	2.79	2.78	101	3.02	2.78	109	70-127	8	30
Fluorene	2.84	2.78	102	3.08	2.78	111	68-121	8	30
Indeno(1,2,3-cd)pyrene	3.31	2.78	119	3.55	2.78	128	63-136	7	30
Pyrene	2.79	2.78	100	3.01	2.78	109	72-127	8	30

Client: ERM West, Inc **Service Request:** K2002352
Project: ERM/0533016.04
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3520C

Sample Name	Lab Code	2-Fluorobiphenyl 35-105	Nitrobenzene-d5 40-117	p-Terphenyl-d14 48-109
STM-1-SW_20200313	K2002352-001	77	87	67
E-1-SW_20200313	K2002352-002	76	85	61
DUP-SW_20200313-STM1	K2002352-003	72	85	61
CB-5A_20200313	K2002352-004	66	78	58
CB-2E-SW_20200313	K2002352-005	72	84	62
CB-4A_20200313	K2002352-006	71	77	69
CB-6A-SW_20200313	K2002352-007	63	71	63
Method Blank	KQ2003840-03	78	83	74
Lab Control Sample	KQ2003840-01	76	85	75
Duplicate Lab Control Sample	KQ2003840-02	73	81	71

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2003840-03	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	ND	U	0.95	0.13	1	03/24/20 19:19	3/18/20	
Butyl Benzyl Phthalate	ND	U	0.19	0.021	1	03/24/20 19:19	3/18/20	
Diethyl Phthalate	ND	U	0.19	0.015	1	03/24/20 19:19	3/18/20	
Dimethyl Phthalate	ND	U	0.19	0.021	1	03/24/20 19:19	3/18/20	
Di-n-butyl Phthalate	ND	U	0.19	0.023	1	03/24/20 19:19	3/18/20	
Di-n-octyl Phthalate	ND	U	0.19	0.033	1	03/24/20 19:19	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorobiphenyl	78	35 - 105	03/24/20 19:19	
Nitrobenzene-d5	83	40 - 117	03/24/20 19:19	
p-Terphenyl-d14	74	48 - 109	03/24/20 19:19	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Analyzed:**	03/24/20
Sample Matrix:	Storm Water	**Date Extracted:**	03/18/20

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	**Units:**	ug/L
Prep Method:	EPA 3520C	**Basis:**	NA
		Analysis Lot:	674568

	Lab Control Sample KQ2003840-01			Duplicate Lab Control Sample KQ2003840-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bis(2-ethylhexyl) Phthalate	3.98	5.00	80	3.76	5.00	75	42-147	6	30
Butyl Benzyl Phthalate	4.13	5.00	83	3.86	5.00	77	59-119	7	30
Diethyl Phthalate	4.74	5.00	95	4.33	5.00	87	58-114	9	30
Dimethyl Phthalate	4.58	5.00	92	4.15	5.00	83	58-109	10	30
Di-n-butyl Phthalate	4.26	5.00	85	3.96	5.00	79	61-121	7	30
Di-n-octyl Phthalate	5.20	5.00	104	4.77	5.00	95	50-125	9	30

Semivolatile Organic Compounds by GC

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Client: ERM West, Inc **Service Request:** K2002352
Project: ERM/0533016.04
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Extraction Method: EPA 3511

Sample Name	Lab Code	Decachlorobiphenyl 14-160	Tetrachloro-m-xylene 30-148
STM-1-SW_20200313	K2002352-001	53	90
E-1-SW_20200313	K2002352-002	44	77
DUP-SW_20200313-STM1	K2002352-003	46	85
CB-5A_20200313	K2002352-004	39	80
CB-2E-SW_20200313	K2002352-005	43	68
CB-4A_20200313	K2002352-006	64	98
CB-6A-SW_20200313	K2002352-007	46	99
Method Blank	KQ2003828-05	55	86
Lab Control Sample	KQ2003828-01	58	88
Duplicate Lab Control Sample	KQ2003828-02	65	92
Lab Control Sample	KQ2003828-03	57	84
Duplicate Lab Control Sample	KQ2003828-04	68	82

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/L
Lab Code:	KQ2003828-05	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND	U	2.0	0.77	1	04/07/20 23:20	3/18/20	
Chlordane	ND	U	20	3.8	1	04/07/20 23:20	3/18/20	
4,4'-DDD	ND	U	2.0	0.57	1	04/07/20 23:20	3/18/20	
4,4'-DDE	ND	U	1.0	0.46	1	04/07/20 23:20	3/18/20	
4,4'-DDT	ND	U	2.0	0.75	1	04/07/20 23:20	3/18/20	
Dieldrin	ND	U	1.0	0.44	1	04/07/20 23:20	3/18/20	
Heptachlor Epoxide	ND	U	1.0	0.29	1	04/07/20 23:20	3/18/20	
Hexachlorobenzene	ND	U	1.0	0.27	1	04/07/20 23:20	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	55	14 - 160	04/07/20 23:20	
Tetrachloro-m-xylene	86	30 - 148	04/07/20 23:20	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Analyzed:**	04/07/20 - 04/08/20
Sample Matrix:	Storm Water	**Date Extracted:**	03/18/20

Duplicate Lab Control Sample Summary
Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method:	8081B	**Units:**	ng/L
Prep Method:	EPA 3511	**Basis:**	NA
		Analysis Lot:	676086

	Lab Control Sample KQ2003828-01			Duplicate Lab Control Sample KQ2003828-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
4,4'-DDD	24.1	25.0	96	25.2	25.0	101	73-173	4	30
4,4'-DDE	20.3	25.0	81	21.7	25.0	87	70-169	7	30
4,4'-DDT	24.1	25.0	96	25.2	25.0	101	72-174	4	30
Aldrin	22.4	25.0	90	22.2	25.0	89	54-163	<1	30
Dieldrin	20.4	25.0	82	21.2	25.0	85	60-166	4	30
Heptachlor Epoxide	19.8	25.0	79	20.6	25.0	82	59-163	4	30
Hexachlorobenzene	21.3	25.0	85	22.0	25.0	88	52-132	3	30

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Analyzed:**	04/08/20
Sample Matrix:	Storm Water	**Date Extracted:**	03/18/20

Duplicate Lab Control Sample Summary
Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method:	8081B	**Units:**	ng/L
Prep Method:	EPA 3511	**Basis:**	NA
		Analysis Lot:	676086

	Lab Control Sample KQ2003828-03			Duplicate Lab Control Sample KQ2003828-04					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chlordane	410	500	82	420	500	84	27-172	2	30

Client: ERM West, Inc **Service Request:** K2002352
Project: ERM/0533016.04
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Extraction Method: EPA 3511

Sample Name	Lab Code	Decachlorobiphenyl 70 - 130
STM-1-SW_20200313	K2002352-001	82
E-1-SW_20200313	K2002352-002	80
DUP-SW_20200313-STM1	K2002352-003	77
CB-5A_20200313	K2002352-004	66 *
CB-2E-SW_20200313	K2002352-005	76
CB-4A_20200313	K2002352-006	79
CB-6A-SW_20200313	K2002352-007	64 *
Lab Control Sample	KWG2000798-1	95
Duplicate Lab Control Sample	KWG2000798-2	92
Method Blank	KWG2000798-3	91

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG2000798-3	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1268	ND U	0.0050	0.0032	1	03/19/20 20:32	3/18/20	
Aroclor 1262	ND U	0.0050	0.0032	1	03/19/20 20:32	3/18/20	
Aroclor 1016	ND U	0.0050	0.0032	1	03/19/20 20:32	3/18/20	
Aroclor 1221	ND U	0.010	0.0032	1	03/19/20 20:32	3/18/20	
Aroclor 1232	ND U	0.0050	0.0032	1	03/19/20 20:32	3/18/20	
Aroclor 1242	ND U	0.0050	0.0032	1	03/19/20 20:32	3/18/20	
Aroclor 1248	ND U	0.0050	0.0032	1	03/19/20 20:32	3/18/20	
Aroclor 1254	ND U	0.0050	0.0032	1	03/19/20 20:32	3/18/20	
Aroclor 1260	ND U	0.0050	0.0032	1	03/19/20 20:32	3/18/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	91	70 - 130	03/19/20 20:32	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Analyzed:**	03/19/20
Sample Matrix:	Storm Water	**Date Extracted:**	03/18/20

Duplicate Lab Control Sample Summary
Polychlorinated Biphenyls (PCBs)

Analysis Method:	8082A	**Units:**	ug/L
Prep Method:	EPA 3511	**Basis:**	NA
		Analysis Lot:	KWG2000857

	Lab Control Sample KWG2000798-1			Duplicate Lab Control Sample KWG2000798-2					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Aroclor 1016	0.109	0.125	87	0.106	0.125	85	70-130	3	30
Aroclor 1260	0.120	0.125	96	0.116	0.125	93	70-130	3	30

Metals

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2003849-01		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Mercury	7470A	ND U	ug/L	0.20	0.02	1	03/19/20 15:17	03/18/20	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2003850-01		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	ND	U	ug/L	0.50	0.09	1	03/19/20 13:19	03/18/20	
Cadmium	6020A	ND	U	ug/L	0.020	0.008	1	03/19/20 13:19	03/18/20	
Copper	6020A	ND	U	ug/L	0.10	0.05	1	03/19/20 13:19	03/18/20	
Iron	6020A	**1.0**	**J**	ug/L	2.0	0.3	1	03/19/20 13:19	03/18/20	
Lead	6020A	ND	U	ug/L	0.020	0.006	1	03/19/20 13:19	03/18/20	
Manganese	6020A	**0.22**		ug/L	0.20	0.04	1	03/19/20 13:19	03/18/20	
Nickel	6020A	ND	U	ug/L	0.20	0.04	1	03/19/20 13:19	03/18/20	
Zinc	6020A	ND	U	ug/L	2.0	0.5	1	03/19/20 13:19	03/18/20	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20
		Date Analyzed:	03/19/20
		Date Extracted:	03/18/20

Matrix Spike Summary
Total Metals

Sample Name:	STM-1-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-001	**Basis:**	NA
Analysis Method:	7470A		
Prep Method:	Method		

Matrix Spike
KQ2003849-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Mercury	ND U	5.26	5.00	105	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	03/13/20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20
		Date Analyzed:	03/19/20
		Date Extracted:	03/18/20

Matrix Spike Summary
Total Metals

Sample Name:	E-1-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-002	**Basis:**	NA
Analysis Method:	6020A		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2003850-03

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	1.01	48.5	50.0	95	75-125
Cadmium	0.167	23.7	25.0	94	75-125
Copper	14.7	27.2	12.5	100	75-125
Iron	797	881	50.0	168 #	75-125
Lead	6.83	54.9	50.0	96	75-125
Manganese	18.0	42.3	25.0	97	75-125
Nickel	2.80	27.5	25.0	99	75-125
Zinc	295	326	25.0	124 #	75-125

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project	ERM/0533016.04	**Date Collected:**	03/13/20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20
		Date Analyzed:	03/19/20

Replicate Sample Summary
Total Metals

Sample Name:	STM-1-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2003849-03 Result	Average	RPD	RPD Limit
Mercury	7470A	0.20	0.02	ND U	ND U	ND	-	20

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project	ERM/0533016.04	**Date Collected:**	03/13/20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20
		Date Analyzed:	03/19/20

Replicate Sample Summary
Total Metals

Sample Name:	E-1-SW_20200313	**Units:**	ug/L
Lab Code:	K2002352-002	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2003850-04 Result	Average	RPD	RPD Limit
Arsenic	6020A	0.50	0.09	1.01	0.95	0.98	6	20
Cadmium	6020A	0.020	0.008	0.167	0.167	0.167	<1	20
Copper	6020A	0.10	0.05	14.7	15.1	14.9	3	20
Iron	6020A	2.0	0.3	797	826	812	4	20
Lead	6020A	0.020	0.006	6.83	6.83	6.83	<1	20
Manganese	6020A	0.20	0.04	18.0	18.0	18.0	<1	20
Nickel	6020A	0.20	0.04	2.80	2.87	2.84	2	20
Zinc	6020A	2.0	0.5	295	298	297	1	20

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Analyzed:**	03/19/20
Sample Matrix:	Storm Water		

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2003849-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Mercury	7470A	4.95	5.00	99	80-120

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QA/QC Report

Client: ERM West, Inc
Project: ERM/0533016.04
Sample Matrix: Storm Water

Service Request: K2002352
Date Analyzed: 03/19/20

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2003850-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6020A	48.0	50.0	96	80-120
Cadmium	6020A	23.6	25.0	95	80-120
Copper	6020A	12.1	12.5	96	80-120
Iron	6020A	52.0	50.0	104	80-120
Lead	6020A	48.7	50.0	97	80-120
Manganese	6020A	24.4	25.0	98	80-120
Nickel	6020A	24.8	25.0	99	80-120
Zinc	6020A	25.0	25.0	100	80-120

General Chemistry

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2002352-MB1		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	03/18/20 09:55	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2002352-MB2		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	03/18/20 09:55	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2002352-MB3		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	03/18/20 11:00	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2002352-MB4		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	5.0	-	1	03/18/20 11:00	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project	ERM/0533016.04	**Date Collected:**	03/13/20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20
		Date Analyzed:	03/18/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	CB-5A_20200313	**Units:**	mg/L
Lab Code:	K2002352-004	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2002352-004DUP Result	Average	RPD	RPD Limit
Solids, Total Suspended (TSS)	SM 2540 D	5.0	-	16.5	16.5	16.5	<1	5

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project	ERM/0533016.04	**Date Collected:**	03/13/20
Sample Matrix:	Storm Water	**Date Received:**	03/17/20
		Date Analyzed:	03/18/20

Replicate Sample Summary
General Chemistry Parameters

Sample Name:	CB-2E-SW_20200313	**Units:**	mg/L
Lab Code:	K2002352-005	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample K2002352-005DUP Result	Average	RPD	RPD Limit
Solids, Total Suspended (TSS)	SM 2540 D	5.0	-	ND U	6.5	NC	NC	5

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Analyzed:**	03/18/20
Sample Matrix:	Storm Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Suspended (TSS)

Analysis Method:	SM 2540 D	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	673804

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2002352-LCS1	396	402	99	85-115

ALS Group USA, Corp.
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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2002352
Project:	ERM/0533016.04	**Date Analyzed:**	03/18/20
Sample Matrix:	Storm Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Suspended (TSS)

Analysis Method:	SM 2540 D	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	673831

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2002352-LCS2	398	402	99	85-115

October 13, 2020 Service Request No:K2008424

Dylan Stankus
ERM-West, Incorporated
1001 SW 5th Ave. #1010
Portland, OR 97204

Laboratory Results for: Univar Yeon

Dear Dylan,

Enclosed are the results of the sample(s) submitted to our laboratory September 24, 2020
For your reference, these analyses have been assigned our service request number **K2008424.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

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ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

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Client: ERM West, Inc
Project: Univar Yeon
Sample Matrix: Storm Water

Service Request: K2008424
Date Received: 09/24/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Eight storm water samples were received for analysis at ALS Environmental on 09/24/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Semivolatiles by GC/MS:

Method 8270D, 10/04/2020: The upper control criterion was exceeded for Butyl Benzyl Phthalate, Diethyl Phthalate, Dimethyl Phthalate, Di-n-octyl Phthalate and p-Terphenyl-d14 in Laboratory Control Sample (LCS) and/or Duplicate Laboratory Control Sample (LCS). The analytes in question were not detected in the associated field samples, expect for Butyl Benzyl Phthalate in sample CB-2E_SW_20200923 which may contain a slight high bias. The error associated with elevated recovery indicated a high bias. The sample data was not significantly affected. No further corrective action was appropriate.

Method 8270D, 10/04/2020: The upper control criterion was exceeded for p-Terphenyl-d14 in the method blank. No target analytes were detected in the sample. The error associated with an elevated recovery equated to a high bias. The quality of the sample data was not significantly affected. No further corrective action was appropriate.

Method 8270D\PAH SIM, 10/01/2020: The results for one or more of the following anayltes in DUP_SW_20200923, CB_5A_SW_20200923, CB-2E_SW_20200923 and E-1_SW_20200923 may contain a slight bias: Benz(a)anthracene, Acenaphthene, Anthracene, Chrysene and Fluorene. The chromatogram indicated the presence of non-target components. The matrix interference may have resulted in a slight high bias in the affected sample. The result was flagged with "X" to indicate the issue.

Semivoa GC:

Method 8081B, 10/05/2020: Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

Method 8081B, 10/05/2020:The analysis of all field samples was initially performed within the recommended holding time. The original batch of samples were missing QC for Chlordane. Efforts were made to analyze the samples as soon as the error was identified. All samples for Chlordane were reextracted and reported past the recommended holding time. The data was flagged to indicate the holding time violation. Per client request, results for the original analysis were reported as well.

Method 8081B, 10/05/2020: A few samples required dilution due to the presence of elevated levels of target analyte. The reporting limits are adjusted to reflect the dilution.

Method 8081B, Ultra Low Level Organochlorine Pesticides by GC, 10/02/2020:Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

Method 8081B, Ultra Low Level Organochlorine Pesticides by GC, 10/02/2020: All samples are being re-extracted due to the LCS/DLCS not being spiked for Chlordane.

Method 8082A, :Insufficient sample volume was received to perform a Matrix Spike/Matrix Spike Duplicate (MS/MSD). A Laboratory Control Sample/Duplicate Laboratory Control Sample (LCS/DLCS) was analyzed and reported in lieu of the MS/MSD for these samples.

Approved by Kelley Lovejoy Date 10/13/2020

Metals:

No significant anomalies were noted with this analysis.

General Chemistry:

No significant anomalies were noted with this analysis.

Volatiles by GC/MS:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 10/13/2020

SAMPLE DETECTION SUMMARY

CLIENT ID: DUP_SW_20200923			Lab ID: K2008424-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	21.5			5.0	mg/L	SM 2540 D
Arsenic	0.39	J	0.09	0.50	ug/L	6020A
Cadmium	0.069		0.008	0.040	ug/L	6020A
Copper	13.1		0.05	0.10	ug/L	6020A
Iron	628		0.3	2.0	ug/L	6020A
Lead	1.56		0.006	0.020	ug/L	6020A
Manganese	24.8		0.04	0.20	ug/L	6020A
Nickel	2.13		0.04	0.20	ug/L	6020A
Zinc	132		0.5	2.0	ug/L	6020A
Tetrachloroethene (PCE)	0.10	J	0.099	0.50	ug/L	8260C
Acenaphthene	0.0073	JX	0.0050	0.023	ug/L	8270D
Anthracene	0.016	J	0.0041	0.023	ug/L	8270D
Benzo(a)pyrene	0.0051	J	0.0049	0.023	ug/L	8270D
Benzo(b)fluoranthene	0.0056	J	0.0047	0.023	ug/L	8270D
Chrysene	0.0061	J	0.0039	0.023	ug/L	8270D
Fluoranthene	0.020	J	0.012	0.023	ug/L	8270D
Indeno(1,2,3-cd)pyrene	0.0038	J	0.0030	0.023	ug/L	8270D
Pyrene	0.032		0.0060	0.023	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.72	J	0.13	1.0	ug/L	8270D
Diethyl Phthalate	0.062	J	0.015	0.20	ug/L	8270D
Dimethyl Phthalate	0.16	J	0.021	0.20	ug/L	8270D
Di-n-butyl Phthalate	0.13	J	0.023	0.20	ug/L	8270D
4,4'-DDD	0.82	JP	0.57	2.0	ng/L	8081B
4,4'-DDT	4.0	P	0.75	2.0	ng/L	8081B

CLIENT ID: CB_5A_SW_20200923			Lab ID: K2008424-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	18.0			5.0	mg/L	SM 2540 D
Arsenic	0.43	J	0.09	0.50	ug/L	6020A
Cadmium	0.072		0.008	0.040	ug/L	6020A
Copper	13.1		0.05	0.10	ug/L	6020A
Iron	657		0.3	2.0	ug/L	6020A
Lead	1.64		0.006	0.020	ug/L	6020A
Manganese	25.3		0.04	0.20	ug/L	6020A
Nickel	2.24		0.04	0.20	ug/L	6020A
Zinc	136		0.5	2.0	ug/L	6020A
Acenaphthene	0.0067	JX	0.0050	0.023	ug/L	8270D
Anthracene	0.0063	JX	0.0041	0.023	ug/L	8270D
Benz(a)anthracene	0.0054	JX	0.0030	0.023	ug/L	8270D
Benzo(a)pyrene	0.0087	J	0.0049	0.023	ug/L	8270D
Benzo(b)fluoranthene	0.010	J	0.0047	0.023	ug/L	8270D
Chrysene	0.0086	JX	0.0039	0.023	ug/L	8270D

SAMPLE DETECTION SUMMARY

CLIENT ID: CB_5A_SW_20200923			Lab ID: K2008424-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Fluoranthene	0.030		0.012	0.023	ug/L	8270D
Indeno(1,2,3-cd)pyrene	0.0065	J	0.0030	0.023	ug/L	8270D
Pyrene	0.043		0.0060	0.023	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.69	J	0.13	1.0	ug/L	8270D
Diethyl Phthalate	0.084	J	0.015	0.20	ug/L	8270D
Dimethyl Phthalate	0.17	J	0.021	0.20	ug/L	8270D
Di-n-butyl Phthalate	0.16	J	0.023	0.20	ug/L	8270D
4,4'-DDD	0.82	JP	0.57	2.0	ng/L	8081B
4,4'-DDE	1.2	P	0.46	1.0	ng/L	8081B
Dieldrin	0.90	J	0.44	1.0	ng/L	8081B
Heptachlor Epoxide	0.42	JP	0.29	1.0	ng/L	8081B
Hexachlorobenzene	0.34	JP	0.27	1.0	ng/L	8081B

CLIENT ID: STM-1_SW_20200923			Lab ID: K2008424-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	7.0			5.0	mg/L	SM 2540 D
Arsenic	0.52		0.09	0.50	ug/L	6020A
Cadmium	0.106		0.008	0.040	ug/L	6020A
Copper	12.9		0.05	0.10	ug/L	6020A
Iron	449		0.3	2.0	ug/L	6020A
Lead	1.28		0.006	0.020	ug/L	6020A
Manganese	48.6		0.04	0.20	ug/L	6020A
Nickel	2.96		0.04	0.20	ug/L	6020A
Zinc	106		0.5	2.0	ug/L	6020A
Tetrachloroethene (PCE)	26		0.099	0.50	ug/L	8260C
Trichloroethene (TCE)	27		0.10	0.50	ug/L	8260C
Anthracene	0.013	J	0.0041	0.023	ug/L	8270D
Pyrene	0.013	J	0.0060	0.023	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.87	J	0.13	0.94	ug/L	8270D
Diethyl Phthalate	0.078	J	0.015	0.19	ug/L	8270D
Dimethyl Phthalate	0.14	J	0.021	0.19	ug/L	8270D
Di-n-butyl Phthalate	0.54		0.023	0.19	ug/L	8270D
Heptachlor Epoxide	0.58	JP	0.29	1.0	ng/L	8081B
Hexachlorobenzene	0.51	J	0.27	1.0	ng/L	8081B
4,4'-DDT	77		3.8	10	ng/L	8081B

CLIENT ID: CB-2E_SW_20200923			Lab ID: K2008424-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	31.5			5.0	mg/L	SM 2540 D
Arsenic	0.63		0.09	0.50	ug/L	6020A
Cadmium	0.128		0.008	0.040	ug/L	6020A
Copper	7.31		0.05	0.10	ug/L	6020A

SAMPLE DETECTION SUMMARY

CLIENT ID: CB-2E_SW_20200923			Lab ID: K2008424-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Iron	720		0.3	2.0	ug/L	6020A
Lead	2.31		0.006	0.020	ug/L	6020A
Manganese	14.3		0.04	0.20	ug/L	6020A
Nickel	1.32		0.04	0.20	ug/L	6020A
Zinc	86.5		0.5	2.0	ug/L	6020A
Anthracene	0.0079	J	0.0041	0.023	ug/L	8270D
Benz(a)anthracene	0.0054	J	0.0030	0.023	ug/L	8270D
Benzo(a)pyrene	0.0081	J	0.0049	0.023	ug/L	8270D
Benzo(b)fluoranthene	0.011	J	0.0047	0.023	ug/L	8270D
Benzo(k)fluoranthene	0.0035	J	0.0034	0.023	ug/L	8270D
Chrysene	0.0094	J	0.0039	0.023	ug/L	8270D
Fluoranthene	0.023		0.012	0.023	ug/L	8270D
Fluorene	0.0061	JX	0.0043	0.023	ug/L	8270D
Indeno(1,2,3-cd)pyrene	0.0069	J	0.0030	0.023	ug/L	8270D
Pyrene	0.032		0.0060	0.023	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	1.8		0.13	0.98	ug/L	8270D
Butyl Benzyl Phthalate	0.30		0.021	0.20	ug/L	8270D
Diethyl Phthalate	0.088	J	0.015	0.20	ug/L	8270D
Dimethyl Phthalate	0.11	J	0.021	0.20	ug/L	8270D
Di-n-butyl Phthalate	0.092	J	0.023	0.20	ug/L	8270D
4,4'-DDD	0.66	JP	0.57	2.0	ng/L	8081B
4,4'-DDE	1.8		0.46	1.0	ng/L	8081B
4,4'-DDT	35		0.75	2.0	ng/L	8081B
Hexachlorobenzene	3.0		0.27	1.0	ng/L	8081B

CLIENT ID: E-1_SW_20200923			Lab ID: K2008424-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	11.0			5.0	mg/L	SM 2540 D
Arsenic	0.53		0.09	0.50	ug/L	6020A
Cadmium	0.047		0.008	0.040	ug/L	6020A
Copper	7.16		0.05	0.10	ug/L	6020A
Iron	223		0.3	2.0	ug/L	6020A
Lead	1.58		0.006	0.020	ug/L	6020A
Manganese	14.1		0.04	0.20	ug/L	6020A
Nickel	1.35		0.04	0.20	ug/L	6020A
Zinc	60.9		0.5	2.0	ug/L	6020A
Tetrachloroethene (PCE)	0.16	J	0.099	0.50	ug/L	8260C
Trichloroethene (TCE)	0.14	J	0.10	0.50	ug/L	8260C
Anthracene	0.014	J	0.0041	0.023	ug/L	8270D
Benz(a)anthracene	0.012	JX	0.0030	0.023	ug/L	8270D
Benzo(a)pyrene	0.0096	J	0.0049	0.023	ug/L	8270D
Benzo(b)fluoranthene	0.015	J	0.0047	0.023	ug/L	8270D

SAMPLE DETECTION SUMMARY

CLIENT ID: E-1_SW_20200923			Lab ID: K2008424-005			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Benzo(k)fluoranthene	0.0038	J	0.0034	0.023	ug/L	8270D
Chrysene	0.010	J	0.0039	0.023	ug/L	8270D
Fluoranthene	0.036		0.012	0.023	ug/L	8270D
Fluorene	0.0051	J	0.0043	0.023	ug/L	8270D
Indeno(1,2,3-cd)pyrene	0.0076	J	0.0030	0.023	ug/L	8270D
Pyrene	0.026		0.0060	0.023	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.61	J	0.13	1.0	ug/L	8270D
Diethyl Phthalate	0.051	J	0.015	0.20	ug/L	8270D
Dimethyl Phthalate	0.049	J	0.021	0.20	ug/L	8270D
Di-n-butyl Phthalate	0.48		0.023	0.20	ug/L	8270D
4,4'-DDD	2.2	P	0.57	2.0	ng/L	8081B
4,4'-DDE	1.2		0.46	1.0	ng/L	8081B
4,4'-DDT	11		0.75	2.0	ng/L	8081B
Dieldrin	0.57	J	0.44	1.0	ng/L	8081B
Hexachlorobenzene	4.3		0.27	1.0	ng/L	8081B

CLIENT ID: CB-4A_SW_20200923			Lab ID: K2008424-006			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	10.0			5.0	mg/L	SM 2540 D
Arsenic	0.49	J	0.09	0.50	ug/L	6020A
Cadmium	0.159		0.008	0.040	ug/L	6020A
Copper	9.66		0.05	0.10	ug/L	6020A
Iron	646		0.3	2.0	ug/L	6020A
Lead	1.11		0.006	0.020	ug/L	6020A
Manganese	49.5		0.04	0.20	ug/L	6020A
Nickel	3.55		0.04	0.20	ug/L	6020A
Zinc	347		0.5	2.0	ug/L	6020A
Tetrachloroethene (PCE)	0.12	J	0.099	0.50	ug/L	8260C
Anthracene	0.028		0.0041	0.023	ug/L	8270D
Fluorene	0.0064	J	0.0043	0.023	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.34	J	0.14	1.0	ug/L	8270D
Diethyl Phthalate	0.091	J	0.016	0.20	ug/L	8270D
Dimethyl Phthalate	0.14	J	0.022	0.20	ug/L	8270D
Di-n-butyl Phthalate	0.056	J	0.024	0.20	ug/L	8270D
Hexachlorobenzene	4.2		0.27	1.0	ng/L	8081B
4,4'-DDT	440		15	40	ng/L	8081B

CLIENT ID: CB-6A_SW_20200923			Lab ID: K2008424-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Solids, Total Suspended (TSS)	32.5			5.0	mg/L	SM 2540 D
Arsenic	0.39	J	0.09	0.50	ug/L	6020A
Cadmium	0.075		0.008	0.040	ug/L	6020A

SAMPLE DETECTION SUMMARY

CLIENT ID: CB-6A_SW_20200923			Lab ID: K2008424-007			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Copper	9.22		0.05	0.10	ug/L	6020A
Iron	790		0.3	2.0	ug/L	6020A
Lead	3.15		0.006	0.020	ug/L	6020A
Manganese	34.1		0.04	0.20	ug/L	6020A
Nickel	1.46		0.04	0.20	ug/L	6020A
Zinc	143		0.5	2.0	ug/L	6020A
Anthracene	0.0089	J	0.0041	0.023	ug/L	8270D
Benz(a)anthracene	0.0051	J	0.0030	0.023	ug/L	8270D
Benzo(a)pyrene	0.012	J	0.0049	0.023	ug/L	8270D
Benzo(b)fluoranthene	0.010	J	0.0047	0.023	ug/L	8270D
Benzo(k)fluoranthene	0.0045	J	0.0034	0.023	ug/L	8270D
Chrysene	0.0088	J	0.0039	0.023	ug/L	8270D
Fluoranthene	0.021	J	0.012	0.023	ug/L	8270D
Fluorene	0.0045	J	0.0043	0.023	ug/L	8270D
Indeno(1,2,3-cd)pyrene	0.0066	J	0.0030	0.023	ug/L	8270D
Pyrene	0.026		0.0060	0.023	ug/L	8270D
Bis(2-ethylhexyl) Phthalate	0.70	J	0.13	0.99	ug/L	8270D
Diethyl Phthalate	0.045	J	0.015	0.20	ug/L	8270D
Dimethyl Phthalate	0.068	J	0.021	0.20	ug/L	8270D
Di-n-butyl Phthalate	0.066	J	0.023	0.20	ug/L	8270D

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2008424-001	DUP_SW_20200923	9/23/2020	1515
K2008424-002	CB_5A_SW_20200923	9/23/2020	1515
K2008424-003	STM-1_SW_20200923	9/23/2020	1610
K2008424-004	CB-2E_SW_20200923	9/23/2020	1640
K2008424-005	E-1_SW_20200923	9/23/2020	1720
K2008424-006	CB-4A_SW_20200923	9/23/2020	1755
K2008424-007	CB-6A_SW_20200923	9/23/2020	1840
K2008424-008	Trip Blank	9/23/2020	

ALS Environmental

CHAIN OF CUSTODY
107495

003

SR# K2008724
COC Set____of____
COC#_____

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Project Name: UNIVAR YEON
Project Number: 0533016
Project Manager: DYLAN STANKUS
Company: ERM
Address: 1050 SW 6TH AVE STE 1650
Phone #: 503 448 5282
email: DYLAN.STANKUS@ERM.COM
Sampler Signature:
Sampler Printed Name: emily.ponaski@ERM.com EMILY PONASKI

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	8081B / Pest OC LL (7D)	8270D / PAH SIM (7D)	8270D / SVO LL (7D)	SM 2540 D / TSS (7D)	8260C / VOC FP (14D)	7470A / Hg T (28D)	6020A / Metals T (180D)	8082A / PCB LL (365D)	1	2	3	4	5	Remarks
1. ~~CB-5A-20200923~~		~~9/23/20~~	~~1515~~																
2. DUP-SW-20200923		9/23/20	1515	W	13	X	X	X	X	X	X	X	X						
3. CB-5A-SW-20200923			1515	W	13														
4. STM-1-SW-20200923			1610	W	13														
5. CB-2E-SW-20200923			1640	W	13														
6. E-1-SW-20200923			1720	W	13														
7. CB-4A-SW-20200923			1755	W	13														
8. CB-6A-SW-20200923			1940	W	13														
9.																			
10.																			

9/23/20

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
X II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.# 0533016.~~014~~ 04
Bill To:_____

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al (As) Sb Ba Be B Ca (Cd) Co Cr (Cu) (Fe) (Pb) Mg (Mn) Mo (Ni) K Ag Na Se Sr Tl Sn V (Zn) (Hg)

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

KELLEY LOVEJOY IS THE LAB MANAGER AND HAS OUR ANALYTE LIST

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Signature	Signature	Signature	Signature	Signature
Printed Name: EMILY PONASKI	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm: ERM	Firm: 9/24/20 1310	Firm	Firm	Firm	Firm
Date/Time: 9/24/20 1310	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

PM KL

Cooler Receipt and Preservation Form

Client ERM Service Request K20 0 8424

Received: 9/24/20 Opened: 9/24/20 By: BR Unloaded: 9/24/20 By: BR

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
4.9	—	IR01		—	—		
3.8	—	↓		—	—		
4.5	—			—	—		
2.7	—			—	—		
4.1	—			—	—		

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: Received trip blank vials.

1/2

PM K2

Cooler Receipt and Preservation Form

Client GRM Service Request K20 0824 24

Received: 9/24/20 Opened: 9/24/20 By: BR Unloaded: 9/24/20 By: BR

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
3.4	—	IR01		—			

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

2/2

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: ERM West, Inc
Project: Univar Yeon/0533016
Service Request: K2008424

Sample Name: DUP_SW_20200923
Lab Code: K2008424-001
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
6020A	ABOYER	EMCALLISTER
8081B	ASMITH	SANDREWS
8082A	JCARBAJAL	SANDREWS
8260C		JJAMES
8270D	TNORRIS	EBRUNO
8270D	TNORRIS	LWEISKOPF
SM 2540 D		JMADISON

Sample Name: DUP_SW_20200923
Lab Code: K2008424-001.R01
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
8081B	ASMITH	MCHAPPELLE
8082A	TNORRIS	SANDREWS

Sample Name: CB_5A_SW_20200923
Lab Code: K2008424-002
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
6020A	ABOYER	EMCALLISTER
8081B	ASMITH	SANDREWS
8082A	JCARBAJAL	SANDREWS
8260C		JJAMES
8270D	TNORRIS	LWEISKOPF
8270D	TNORRIS	EBRUNO
SM 2540 D		JMADISON

Client: ERM West, Inc
Project: Univar Yeon/0533016
Service Request: K2008424

Sample Name: CB_5A_SW_20200923
Lab Code: K2008424-002.R01
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
8081B	ASMITH	MCHAPPELLE
8082A	ASMITH	SANDREWS

Sample Name: STM-1_SW_20200923
Lab Code: K2008424-003
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
6020A	ABOYER	EMCALLISTER
8081B	ASMITH	SANDREWS
8082A	JCARBAJAL	SANDREWS
8260C		JJAMES
8270D	TNORRIS	LWEISKOPF
8270D	TNORRIS	EBRUNO
SM 2540 D		JMADISON

Sample Name: STM-1_SW_20200923
Lab Code: K2008424-003.R01
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
8081B	ASMITH	MCHAPPELLE
8082A	ASMITH	SANDREWS

Sample Name: STM-1_SW_20200923
Lab Code: K2008424-003.R02
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
8081B	ASMITH	MCHAPPELLE

Client: ERM West, Inc
Project: Univar Yeon/0533016
Service Request: K2008424

Sample Name: CB-2E_SW_20200923
Lab Code: K2008424-004
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
6020A	ABOYER	EMCALLISTER
8081B	ASMITH	SANDREWS
8082A	JCARBAJAL	SANDREWS
8260C		JJAMES
8270D	TNORRIS	LWEISKOPF
8270D	TNORRIS	EBRUNO
SM 2540 D		JMADISON

Sample Name: CB-2E_SW_20200923
Lab Code: K2008424-004.R01
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
8081B	ASMITH	MCHAPPELLE
8082A	TNORRIS	SANDREWS

Sample Name: E-1_SW_20200923
Lab Code: K2008424-005
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
6020A	ABOYER	EMCALLISTER
8081B	ASMITH	SANDREWS
8082A	JCARBAJAL	SANDREWS
8260C		JJAMES
8270D	TNORRIS	EBRUNO
8270D	TNORRIS	LWEISKOPF
SM 2540 D		JMADISON

Client: ERM West, Inc
Project: Univar Yeon/0533016
Service Request: K2008424

Sample Name: E-1_SW_20200923
Lab Code: K2008424-005.R01
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
8081B	ASMITH	MCHAPPELLE
8082A	ASMITH	SANDREWS

Sample Name: CB-4A_SW_20200923
Lab Code: K2008424-006
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
6020A	ABOYER	EMCALLISTER
8081B	ASMITH	SANDREWS
8082A	JCARBAJAL	SANDREWS
8260C		JJAMES
8270D	TNORRIS	LWEISKOPF
8270D	TNORRIS	EBRUNO
SM 2540 D		JMADISON

Sample Name: CB-4A_SW_20200923
Lab Code: K2008424-006.R01
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
8081B	ASMITH	MCHAPPELLE
8082A	ASMITH	SANDREWS

Sample Name: CB-4A_SW_20200923
Lab Code: K2008424-006.R02
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
8081B	ASMITH	MCHAPPELLE

Client: ERM West, Inc
Project: Univar Yeon/0533016
Service Request: K2008424

Sample Name: CB-6A_SW_20200923
Lab Code: K2008424-007
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
6020A	ABOYER	EMCALLISTER
8081B	ASMITH	SANDREWS
8082A	JCARBAJAL	SANDREWS
8260C		JJAMES
8270D	TNORRIS	LWEISKOPF
8270D	TNORRIS	EBRUNO
SM 2540 D		JMADISON

Sample Name: CB-6A_SW_20200923
Lab Code: K2008424-007.R01
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
8081B	ASMITH	MCHAPPELLE
8082A	ASMITH	SANDREWS

Sample Name: Trip Blank
Lab Code: K2008424-008
Sample Matrix: Storm Water
Date Collected: 09/23/20
Date Received: 09/24/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES

Sample Results

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Volatile Organic Compounds by GC/MS

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	DUP_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	09/26/20 22:15	
Tetrachloroethene (PCE)	**0.10**	**J**	0.50	0.099	1	09/26/20 22:15	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	09/26/20 22:15	
Vinyl Chloride	ND	U	0.50	0.075	1	09/26/20 22:15	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	68 - 117	09/26/20 22:15	
Dibromofluoromethane	111	73 - 122	09/26/20 22:15	
Toluene-d8	96	65 - 144	09/26/20 22:15	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB_5A_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	09/26/20 22:41	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	09/26/20 22:41	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	09/26/20 22:41	
Vinyl Chloride	ND	U	0.50	0.075	1	09/26/20 22:41	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	68 - 117	09/26/20 22:41	
Dibromofluoromethane	112	73 - 122	09/26/20 22:41	
Toluene-d8	97	65 - 144	09/26/20 22:41	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:10
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	STM-1_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND U	0.50	0.072	1	09/26/20 23:07	
Tetrachloroethene (PCE)	**26**	0.50	0.099	1	09/26/20 23:07	
Trichloroethene (TCE)	**27**	0.50	0.10	1	09/26/20 23:07	
Vinyl Chloride	ND U	0.50	0.075	1	09/26/20 23:07	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	68 - 117	09/26/20 23:07	
Dibromofluoromethane	112	73 - 122	09/26/20 23:07	
Toluene-d8	98	65 - 144	09/26/20 23:07	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-2E_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND U	0.50	0.072	1	09/26/20 23:34	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	09/26/20 23:34	
Trichloroethene (TCE)	ND U	0.50	0.10	1	09/26/20 23:34	
Vinyl Chloride	ND U	0.50	0.075	1	09/26/20 23:34	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	68 - 117	09/26/20 23:34	
Dibromofluoromethane	111	73 - 122	09/26/20 23:34	
Toluene-d8	97	65 - 144	09/26/20 23:34	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:20
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	E-1_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	09/28/20 21:53	
Tetrachloroethene (PCE)	**0.16**	**J**	0.50	0.099	1	09/28/20 21:53	
Trichloroethene (TCE)	**0.14**	**J**	0.50	0.10	1	09/28/20 21:53	
Vinyl Chloride	ND	U	0.50	0.075	1	09/28/20 21:53	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	68 - 117	09/28/20 21:53	
Dibromofluoromethane	111	73 - 122	09/28/20 21:53	
Toluene-d8	102	65 - 144	09/28/20 21:53	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:55
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-4A_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	09/28/20 22:19	
Tetrachloroethene (PCE)	**0.12**	**J**	0.50	0.099	1	09/28/20 22:19	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	09/28/20 22:19	
Vinyl Chloride	ND	U	0.50	0.075	1	09/28/20 22:19	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	68 - 117	09/28/20 22:19	
Dibromofluoromethane	110	73 - 122	09/28/20 22:19	
Toluene-d8	99	65 - 144	09/28/20 22:19	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 18:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-6A_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-007	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND U	0.50	0.072	1	09/28/20 22:45	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	09/28/20 22:45	
Trichloroethene (TCE)	ND U	0.50	0.10	1	09/28/20 22:45	
Vinyl Chloride	ND U	0.50	0.075	1	09/28/20 22:45	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	68 - 117	09/28/20 22:45	
Dibromofluoromethane	110	73 - 122	09/28/20 22:45	
Toluene-d8	97	65 - 144	09/28/20 22:45	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	Trip Blank	**Units:**	ug/L
Lab Code:	K2008424-008	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND U	0.50	0.072	1	09/28/20 23:11	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	09/28/20 23:11	
Trichloroethene (TCE)	ND U	0.50	0.10	1	09/28/20 23:11	
Vinyl Chloride	ND U	0.50	0.075	1	09/28/20 23:11	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	68 - 117	09/28/20 23:11	
Dibromofluoromethane	110	73 - 122	09/28/20 23:11	
Toluene-d8	100	65 - 144	09/28/20 23:11	

Semivolatile Organic Compounds by GC/MS

ALS Environmental—Kelso Laboratory
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www.alsglobal.com

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	DUP_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-001	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	**0.0073**	**JX**	0.023	0.0050	1	10/01/20 10:34	9/28/20	
Anthracene	**0.016**	**J**	0.023	0.0041	1	10/01/20 10:34	9/28/20	
Benz(a)anthracene	ND	U	0.023	0.0030	1	10/01/20 10:34	9/28/20	
Benzo(a)pyrene	**0.0051**	**J**	0.023	0.0049	1	10/01/20 10:34	9/28/20	
Benzo(b)fluoranthene	**0.0056**	**J**	0.023	0.0047	1	10/01/20 10:34	9/28/20	
Benzo(k)fluoranthene	ND	U	0.023	0.0034	1	10/01/20 10:34	9/28/20	
Chrysene	**0.0061**	**J**	0.023	0.0039	1	10/01/20 10:34	9/28/20	
Dibenz(a,h)anthracene	ND	U	0.023	0.0029	1	10/01/20 10:34	9/28/20	
Fluoranthene	**0.020**	**J**	0.023	0.012	1	10/01/20 10:34	9/28/20	
Fluorene	ND	U	0.023	0.0043	1	10/01/20 10:34	9/28/20	
Indeno(1,2,3-cd)pyrene	**0.0038**	**J**	0.023	0.0030	1	10/01/20 10:34	9/28/20	
Pyrene	**0.032**		0.023	0.0060	1	10/01/20 10:34	9/28/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	86	42 - 133	10/01/20 10:34	
Fluorene-d10	93	42 - 131	10/01/20 10:34	
Terphenyl-d14	73	32 - 129	10/01/20 10:34	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB_5A_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-002	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	**0.0067**	**JX**	0.023	0.0050	1	10/01/20 11:00	9/28/20	
Anthracene	**0.0063**	**JX**	0.023	0.0041	1	10/01/20 11:00	9/28/20	
Benz(a)anthracene	**0.0054**	**JX**	0.023	0.0030	1	10/01/20 11:00	9/28/20	
Benzo(a)pyrene	**0.0087**	**J**	0.023	0.0049	1	10/01/20 11:00	9/28/20	
Benzo(b)fluoranthene	**0.010**	**J**	0.023	0.0047	1	10/01/20 11:00	9/28/20	
Benzo(k)fluoranthene	ND	U	0.023	0.0034	1	10/01/20 11:00	9/28/20	
Chrysene	**0.0086**	**JX**	0.023	0.0039	1	10/01/20 11:00	9/28/20	
Dibenz(a,h)anthracene	ND	U	0.023	0.0029	1	10/01/20 11:00	9/28/20	
Fluoranthene	**0.030**		0.023	0.012	1	10/01/20 11:00	9/28/20	
Fluorene	ND	U	0.023	0.0043	1	10/01/20 11:00	9/28/20	
Indeno(1,2,3-cd)pyrene	**0.0065**	**J**	0.023	0.0030	1	10/01/20 11:00	9/28/20	
Pyrene	**0.043**		0.023	0.0060	1	10/01/20 11:00	9/28/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	85	42 - 133	10/01/20 11:00	
Fluorene-d10	91	42 - 131	10/01/20 11:00	
Terphenyl-d14	81	32 - 129	10/01/20 11:00	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:10
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	STM-1_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-003	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	ND	U	0.023	0.0050	1	10/01/20 08:24	9/28/20	
Anthracene	**0.013**	**J**	0.023	0.0041	1	10/01/20 08:24	9/28/20	
Benz(a)anthracene	ND	U	0.023	0.0030	1	10/01/20 08:24	9/28/20	
Benzo(a)pyrene	ND	U	0.023	0.0049	1	10/01/20 08:24	9/28/20	
Benzo(b)fluoranthene	ND	U	0.023	0.0047	1	10/01/20 08:24	9/28/20	
Benzo(k)fluoranthene	ND	U	0.023	0.0034	1	10/01/20 08:24	9/28/20	
Chrysene	ND	U	0.023	0.0039	1	10/01/20 08:24	9/28/20	
Dibenz(a,h)anthracene	ND	U	0.023	0.0029	1	10/01/20 08:24	9/28/20	
Fluoranthene	ND	U	0.023	0.012	1	10/01/20 08:24	9/28/20	
Fluorene	ND	U	0.023	0.0043	1	10/01/20 08:24	9/28/20	
Indeno(1,2,3-cd)pyrene	ND	U	0.023	0.0030	1	10/01/20 08:24	9/28/20	
Pyrene	**0.013**	**J**	0.023	0.0060	1	10/01/20 08:24	9/28/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	95	42 - 133	10/01/20 08:24	
Fluorene-d10	90	42 - 131	10/01/20 08:24	
Terphenyl-d14	79	32 - 129	10/01/20 08:24	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-2E_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-004	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	ND	U	0.023	0.0050	1	10/01/20 11:26	9/28/20	
Anthracene	**0.0079**	**J**	0.023	0.0041	1	10/01/20 11:26	9/28/20	
Benz(a)anthracene	**0.0054**	**J**	0.023	0.0030	1	10/01/20 11:26	9/28/20	
Benzo(a)pyrene	**0.0081**	**J**	0.023	0.0049	1	10/01/20 11:26	9/28/20	
Benzo(b)fluoranthene	**0.011**	**J**	0.023	0.0047	1	10/01/20 11:26	9/28/20	
Benzo(k)fluoranthene	**0.0035**	**J**	0.023	0.0034	1	10/01/20 11:26	9/28/20	
Chrysene	**0.0094**	**J**	0.023	0.0039	1	10/01/20 11:26	9/28/20	
Dibenz(a,h)anthracene	ND	U	0.023	0.0029	1	10/01/20 11:26	9/28/20	
Fluoranthene	**0.023**		0.023	0.012	1	10/01/20 11:26	9/28/20	
Fluorene	**0.0061**	**JX**	0.023	0.0043	1	10/01/20 11:26	9/28/20	
Indeno(1,2,3-cd)pyrene	**0.0069**	**J**	0.023	0.0030	1	10/01/20 11:26	9/28/20	
Pyrene	**0.032**		0.023	0.0060	1	10/01/20 11:26	9/28/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	90	42 - 133	10/01/20 11:26	
Fluorene-d10	93	42 - 131	10/01/20 11:26	
Terphenyl-d14	92	32 - 129	10/01/20 11:26	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:20
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	E-1_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-005	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	ND	U	0.023	0.0050	1	10/01/20 07:32	9/28/20	
Anthracene	**0.014**	**J**	0.023	0.0041	1	10/01/20 07:32	9/28/20	
Benz(a)anthracene	**0.012**	**JX**	0.023	0.0030	1	10/01/20 07:32	9/28/20	
Benzo(a)pyrene	**0.0096**	**J**	0.023	0.0049	1	10/01/20 07:32	9/28/20	
Benzo(b)fluoranthene	**0.015**	**J**	0.023	0.0047	1	10/01/20 07:32	9/28/20	
Benzo(k)fluoranthene	**0.0038**	**J**	0.023	0.0034	1	10/01/20 07:32	9/28/20	
Chrysene	**0.010**	**J**	0.023	0.0039	1	10/01/20 07:32	9/28/20	
Dibenz(a,h)anthracene	ND	U	0.023	0.0029	1	10/01/20 07:32	9/28/20	
Fluoranthene	**0.036**		0.023	0.012	1	10/01/20 07:32	9/28/20	
Fluorene	**0.0051**	**J**	0.023	0.0043	1	10/01/20 07:32	9/28/20	
Indeno(1,2,3-cd)pyrene	**0.0076**	**J**	0.023	0.0030	1	10/01/20 07:32	9/28/20	
Pyrene	**0.026**		0.023	0.0060	1	10/01/20 07:32	9/28/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	99	42 - 133	10/01/20 07:32	
Fluorene-d10	91	42 - 131	10/01/20 07:32	
Terphenyl-d14	96	32 - 129	10/01/20 07:32	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:55
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-4A_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-006	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	ND	U	0.023	0.0050	1	10/01/20 07:58	9/28/20	
Anthracene	**0.028**		0.023	0.0041	1	10/01/20 07:58	9/28/20	
Benz(a)anthracene	ND	U	0.023	0.0030	1	10/01/20 07:58	9/28/20	
Benzo(a)pyrene	ND	U	0.023	0.0049	1	10/01/20 07:58	9/28/20	
Benzo(b)fluoranthene	ND	U	0.023	0.0047	1	10/01/20 07:58	9/28/20	
Benzo(k)fluoranthene	ND	U	0.023	0.0034	1	10/01/20 07:58	9/28/20	
Chrysene	ND	U	0.023	0.0039	1	10/01/20 07:58	9/28/20	
Dibenz(a,h)anthracene	ND	U	0.023	0.0029	1	10/01/20 07:58	9/28/20	
Fluoranthene	ND	U	0.023	0.012	1	10/01/20 07:58	9/28/20	
Fluorene	**0.0064**	**J**	0.023	0.0043	1	10/01/20 07:58	9/28/20	
Indeno(1,2,3-cd)pyrene	ND	U	0.023	0.0030	1	10/01/20 07:58	9/28/20	
Pyrene	ND	U	0.023	0.0060	1	10/01/20 07:58	9/28/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	102	42 - 133	10/01/20 07:58	
Fluorene-d10	95	42 - 131	10/01/20 07:58	
Terphenyl-d14	78	32 - 129	10/01/20 07:58	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 18:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-6A_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-007	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	ND	U	0.023	0.0050	1	10/01/20 11:52	9/28/20	
Anthracene	**0.0089**	**J**	0.023	0.0041	1	10/01/20 11:52	9/28/20	
Benz(a)anthracene	**0.0051**	**J**	0.023	0.0030	1	10/01/20 11:52	9/28/20	
Benzo(a)pyrene	**0.012**	**J**	0.023	0.0049	1	10/01/20 11:52	9/28/20	
Benzo(b)fluoranthene	**0.010**	**J**	0.023	0.0047	1	10/01/20 11:52	9/28/20	
Benzo(k)fluoranthene	**0.0045**	**J**	0.023	0.0034	1	10/01/20 11:52	9/28/20	
Chrysene	**0.0088**	**J**	0.023	0.0039	1	10/01/20 11:52	9/28/20	
Dibenz(a,h)anthracene	ND	U	0.023	0.0029	1	10/01/20 11:52	9/28/20	
Fluoranthene	**0.021**	**J**	0.023	0.012	1	10/01/20 11:52	9/28/20	
Fluorene	**0.0045**	**J**	0.023	0.0043	1	10/01/20 11:52	9/28/20	
Indeno(1,2,3-cd)pyrene	**0.0066**	**J**	0.023	0.0030	1	10/01/20 11:52	9/28/20	
Pyrene	**0.026**		0.023	0.0060	1	10/01/20 11:52	9/28/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	89	42 - 133	10/01/20 11:52	
Fluorene-d10	92	42 - 131	10/01/20 11:52	
Terphenyl-d14	89	32 - 129	10/01/20 11:52	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	DUP_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-001	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.72**	**J**	1.0	0.13	1	10/04/20 15:02	9/30/20	
Butyl Benzyl Phthalate	ND	U	0.20	0.021	1	10/04/20 15:02	9/30/20	*
Diethyl Phthalate	**0.062**	**J**	0.20	0.015	1	10/04/20 15:02	9/30/20	*
Dimethyl Phthalate	**0.16**	**J**	0.20	0.021	1	10/04/20 15:02	9/30/20	*
Di-n-butyl Phthalate	**0.13**	**J**	0.20	0.023	1	10/04/20 15:02	9/30/20	
Di-n-octyl Phthalate	ND	U	0.20	0.033	1	10/04/20 15:02	9/30/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorophenol	43	34 - 118	10/04/20 15:02	
Nitrobenzene-d5	84	40 - 117	10/04/20 15:02	
p-Terphenyl-d14	67	48 - 109	10/04/20 15:02	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB_5A_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-002	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.69**	**J**	1.0	0.13	1	10/04/20 15:30	9/30/20	
Butyl Benzyl Phthalate	ND	U	0.20	0.021	1	10/04/20 15:30	9/30/20	*
Diethyl Phthalate	**0.084**	**J**	0.20	0.015	1	10/04/20 15:30	9/30/20	*
Dimethyl Phthalate	**0.17**	**J**	0.20	0.021	1	10/04/20 15:30	9/30/20	*
Di-n-butyl Phthalate	**0.16**	**J**	0.20	0.023	1	10/04/20 15:30	9/30/20	
Di-n-octyl Phthalate	ND	U	0.20	0.033	1	10/04/20 15:30	9/30/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorophenol	49	34 - 118	10/04/20 15:30	
Nitrobenzene-d5	96	40 - 117	10/04/20 15:30	
p-Terphenyl-d14	77	48 - 109	10/04/20 15:30	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:10
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	STM-1_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-003	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.87**	**J**	0.94	0.13	1	10/04/20 15:58	9/30/20	
Butyl Benzyl Phthalate	ND	U	0.19	0.021	1	10/04/20 15:58	9/30/20	*
Diethyl Phthalate	**0.078**	**J**	0.19	0.015	1	10/04/20 15:58	9/30/20	*
Dimethyl Phthalate	**0.14**	**J**	0.19	0.021	1	10/04/20 15:58	9/30/20	*
Di-n-butyl Phthalate	**0.54**		0.19	0.023	1	10/04/20 15:58	9/30/20	
Di-n-octyl Phthalate	ND	U	0.19	0.033	1	10/04/20 15:58	9/30/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorophenol	53	34 - 118	10/04/20 15:58	
Nitrobenzene-d5	98	40 - 117	10/04/20 15:58	
p-Terphenyl-d14	77	48 - 109	10/04/20 15:58	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-2E_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-004	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**1.8**		0.98	0.13	1	10/04/20 16:26	9/30/20	
Butyl Benzyl Phthalate	**0.30**		0.20	0.021	1	10/04/20 16:26	9/30/20	*
Diethyl Phthalate	**0.088**	**J**	0.20	0.015	1	10/04/20 16:26	9/30/20	*
Dimethyl Phthalate	**0.11**	**J**	0.20	0.021	1	10/04/20 16:26	9/30/20	*
Di-n-butyl Phthalate	**0.092**	**J**	0.20	0.023	1	10/04/20 16:26	9/30/20	
Di-n-octyl Phthalate	ND	U	0.20	0.033	1	10/04/20 16:26	9/30/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorophenol	52	34 - 118	10/04/20 16:26	
Nitrobenzene-d5	98	40 - 117	10/04/20 16:26	
p-Terphenyl-d14	79	48 - 109	10/04/20 16:26	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:20
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	E-1_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-005	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.61**	**J**	1.0	0.13	1	10/04/20 16:55	9/30/20	
Butyl Benzyl Phthalate	ND	U	0.20	0.021	1	10/04/20 16:55	9/30/20	*
Diethyl Phthalate	**0.051**	**J**	0.20	0.015	1	10/04/20 16:55	9/30/20	*
Dimethyl Phthalate	**0.049**	**J**	0.20	0.021	1	10/04/20 16:55	9/30/20	*
Di-n-butyl Phthalate	**0.48**		0.20	0.023	1	10/04/20 16:55	9/30/20	
Di-n-octyl Phthalate	ND	U	0.20	0.033	1	10/04/20 16:55	9/30/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorophenol	50	34 - 118	10/04/20 16:55	
Nitrobenzene-d5	94	40 - 117	10/04/20 16:55	
p-Terphenyl-d14	83	48 - 109	10/04/20 16:55	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:55
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-4A_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-006	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.34**	**J**	1.0	0.14	1	10/04/20 17:23	9/30/20	
Butyl Benzyl Phthalate	ND	U	0.20	0.022	1	10/04/20 17:23	9/30/20	*
Diethyl Phthalate	**0.091**	**J**	0.20	0.016	1	10/04/20 17:23	9/30/20	*
Dimethyl Phthalate	**0.14**	**J**	0.20	0.022	1	10/04/20 17:23	9/30/20	*
Di-n-butyl Phthalate	**0.056**	**J**	0.20	0.024	1	10/04/20 17:23	9/30/20	
Di-n-octyl Phthalate	ND	U	0.20	0.034	1	10/04/20 17:23	9/30/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorophenol	54	34 - 118	10/04/20 17:23	
Nitrobenzene-d5	97	40 - 117	10/04/20 17:23	
p-Terphenyl-d14	77	48 - 109	10/04/20 17:23	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 18:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-6A_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-007	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.70**	**J**	0.99	0.13	1	10/04/20 17:51	9/30/20	
Butyl Benzyl Phthalate	ND	U	0.20	0.021	1	10/04/20 17:51	9/30/20	*
Diethyl Phthalate	**0.045**	**J**	0.20	0.015	1	10/04/20 17:51	9/30/20	*
Dimethyl Phthalate	**0.068**	**J**	0.20	0.021	1	10/04/20 17:51	9/30/20	*
Di-n-butyl Phthalate	**0.066**	**J**	0.20	0.023	1	10/04/20 17:51	9/30/20	
Di-n-octyl Phthalate	ND	U	0.20	0.033	1	10/04/20 17:51	9/30/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorophenol	49	34 - 118	10/04/20 17:51	
Nitrobenzene-d5	95	40 - 117	10/04/20 17:51	
p-Terphenyl-d14	81	48 - 109	10/04/20 17:51	

Semivolatile Organic Compounds by GC

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	DUP_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-001	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND	U	2.0	0.77	1	10/02/20 01:35	9/30/20	
Chlordane	ND	U	20	3.8	1	10/02/20 01:35	9/30/20	
4,4'-DDD	**0.82**	**JP**	2.0	0.57	1	10/02/20 01:35	9/30/20	
4,4'-DDE	ND	U	1.0	0.46	1	10/02/20 01:35	9/30/20	
4,4'-DDT	**4.0**	**P**	2.0	0.75	1	10/02/20 01:35	9/30/20	
Dieldrin	ND	U	1.0	0.44	1	10/02/20 01:35	9/30/20	
Heptachlor Epoxide	ND	U	1.0	0.29	1	10/02/20 01:35	9/30/20	
Hexachlorobenzene	ND	U	1.0	0.27	1	10/02/20 01:35	9/30/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	52	14 - 160	10/02/20 01:35	
Tetrachloro-m-xylene	98	30 - 148	10/02/20 01:35	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	DUP_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-001	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chlordane	ND U	20	3.8	1	10/05/20 12:45	10/2/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	35	14 - 160	10/05/20 12:45	
Tetrachloro-m-xylene	100	30 - 148	10/05/20 12:45	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB_5A_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-002	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND U	2.0	0.77	1	10/02/20 02:04	9/30/20	
Chlordane	ND U	20	3.8	1	10/02/20 02:04	9/30/20	
4,4'-DDD	**0.82 JP**	2.0	0.57	1	10/02/20 02:04	9/30/20	
4,4'-DDE	**1.2 P**	1.0	0.46	1	10/02/20 02:04	9/30/20	
4,4'-DDT	**ND Ui**	2.9	2.9	1	10/02/20 02:04	9/30/20	
Dieldrin	**0.90 J**	1.0	0.44	1	10/02/20 02:04	9/30/20	
Heptachlor Epoxide	**0.42 JP**	1.0	0.29	1	10/02/20 02:04	9/30/20	
Hexachlorobenzene	**0.34 JP**	1.0	0.27	1	10/02/20 02:04	9/30/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	46	14 - 160	10/02/20 02:04	
Tetrachloro-m-xylene	93	30 - 148	10/02/20 02:04	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB_5A_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-002	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chlordane	ND U	20	3.8	1	10/05/20 13:15	10/2/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	53	14 - 160	10/05/20 13:15	
Tetrachloro-m-xylene	110	30 - 148	10/05/20 13:15	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:10
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	STM-1_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-003	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND U	2.0	0.77	1	10/02/20 02:34	9/30/20	
Chlordane	ND U	20	3.8	1	10/02/20 02:34	9/30/20	
4,4'-DDD	ND U	2.0	0.57	1	10/02/20 02:34	9/30/20	
4,4'-DDE	ND U	1.0	0.46	1	10/02/20 02:34	9/30/20	
Dieldrin	ND U	1.0	0.44	1	10/02/20 02:34	9/30/20	
Heptachlor Epoxide	**0.58 JP**	1.0	0.29	1	10/02/20 02:34	9/30/20	
Hexachlorobenzene	**0.51 J**	1.0	0.27	1	10/02/20 02:34	9/30/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	42	14 - 160	10/02/20 02:34	
Tetrachloro-m-xylene	88	30 - 148	10/02/20 02:34	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:10
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	STM-1_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-003	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chlordane	ND U	20	3.8	1	10/05/20 13:44	10/2/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	89	14 - 160	10/05/20 13:44	
Tetrachloro-m-xylene	144	30 - 148	10/05/20 13:44	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:10
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	STM-1_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-003	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDT	**77**	10	3.8	5	10/02/20 11:10	9/30/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	44	14 - 160	10/02/20 11:10	
Tetrachloro-m-xylene	96	30 - 148	10/02/20 11:10	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-2E_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-004	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND	U	2.0	0.77	1	10/02/20 03:03	9/30/20	
Chlordane	ND	U	20	3.8	1	10/02/20 03:03	9/30/20	
4,4'-DDD	**0.66**	**JP**	2.0	0.57	1	10/02/20 03:03	9/30/20	
4,4'-DDE	**1.8**		1.0	0.46	1	10/02/20 03:03	9/30/20	
4,4'-DDT	**35**		2.0	0.75	1	10/02/20 03:03	9/30/20	
Dieldrin	ND	U	1.0	0.44	1	10/02/20 03:03	9/30/20	
Heptachlor Epoxide	ND	U	1.0	0.29	1	10/02/20 03:03	9/30/20	
Hexachlorobenzene	**3.0**		1.0	0.27	1	10/02/20 03:03	9/30/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	55	14 - 160	10/02/20 03:03	
Tetrachloro-m-xylene	97	30 - 148	10/02/20 03:03	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-2E_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-004	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chlordane	ND U	20	3.8	1	10/05/20 14:14	10/2/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	84	14 - 160	10/05/20 14:14	
Tetrachloro-m-xylene	124	30 - 148	10/05/20 14:14	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:20
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	E-1_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-005	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND	U	2.0	0.77	1	10/02/20 03:33	9/30/20	
Chlordane	ND	U	20	3.8	1	10/02/20 03:33	9/30/20	
4,4'-DDD	**2.2**	**P**	2.0	0.57	1	10/02/20 03:33	9/30/20	
4,4'-DDE	**1.2**		1.0	0.46	1	10/02/20 03:33	9/30/20	
4,4'-DDT	**11**		2.0	0.75	1	10/02/20 03:33	9/30/20	
Dieldrin	**0.57**	**J**	1.0	0.44	1	10/02/20 03:33	9/30/20	
Heptachlor Epoxide	**ND**	**Ui**	1.0	0.37	1	10/02/20 03:33	9/30/20	
Hexachlorobenzene	**4.3**		1.0	0.27	1	10/02/20 03:33	9/30/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	54	14 - 160	10/02/20 03:33	
Tetrachloro-m-xylene	94	30 - 148	10/02/20 03:33	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:20
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	E-1_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-005	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chlordane	ND U	20	3.8	1	10/05/20 14:43	10/2/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	92	14 - 160	10/05/20 14:43	
Tetrachloro-m-xylene	135	30 - 148	10/05/20 14:43	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:55
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-4A_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-006	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND U	2.0	0.77	1	10/02/20 04:02	9/30/20	
Chlordane	ND U	20	3.8	1	10/02/20 04:02	9/30/20	
4,4'-DDD	**ND Ui**	2.0	0.76	1	10/02/20 04:02	9/30/20	
4,4'-DDE	**ND Ui**	1.0	0.73	1	10/02/20 04:02	9/30/20	
Dieldrin	ND U	1.0	0.44	1	10/02/20 04:02	9/30/20	
Heptachlor Epoxide	ND U	1.0	0.29	1	10/02/20 04:02	9/30/20	
Hexachlorobenzene	**4.2**	1.0	0.27	1	10/02/20 04:02	9/30/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	44	14 - 160	10/02/20 04:02	
Tetrachloro-m-xylene	77	30 - 148	10/02/20 04:02	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:55
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-4A_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-006	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chlordane	ND U	20	3.8	1	10/05/20 15:13	10/2/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	90	14 - 160	10/05/20 15:13	
Tetrachloro-m-xylene	139	30 - 148	10/05/20 15:13	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:55
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-4A_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-006	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
4,4'-DDT	**440**	40	15	20	10/02/20 11:39	9/30/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	39	14 - 160	10/02/20 11:39	
Tetrachloro-m-xylene	78	30 - 148	10/02/20 11:39	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 18:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-6A_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-007	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND U	2.0	0.77	1	10/02/20 04:32	9/30/20	
Chlordane	ND U	20	3.8	1	10/02/20 04:32	9/30/20	
4,4'-DDD	ND U	2.0	0.57	1	10/02/20 04:32	9/30/20	
4,4'-DDE	**ND Ui**	1.0	0.97	1	10/02/20 04:32	9/30/20	
4,4'-DDT	ND U	2.0	0.75	1	10/02/20 04:32	9/30/20	
Dieldrin	ND U	1.0	0.44	1	10/02/20 04:32	9/30/20	
Heptachlor Epoxide	ND U	1.0	0.29	1	10/02/20 04:32	9/30/20	
Hexachlorobenzene	ND U	1.0	0.27	1	10/02/20 04:32	9/30/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	56	14 - 160	10/02/20 04:32	
Tetrachloro-m-xylene	86	30 - 148	10/02/20 04:32	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 18:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-6A_SW_20200923	**Units:**	ng/L
Lab Code:	K2008424-007	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chlordane	ND U	20	3.8	1	10/05/20 15:42	10/2/20	*

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	67	14 - 160	10/05/20 15:42	
Tetrachloro-m-xylene	143	30 - 148	10/05/20 15:42	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	DUP_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-001	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1262	ND	U	0.010	0.0064	1	10/12/20 12:19	10/9/20	
Aroclor 1268	ND	U	0.010	0.0064	1	10/12/20 12:19	10/9/20	
Aroclor 1016	ND	U	0.010	0.0064	1	10/12/20 12:19	10/9/20	
Aroclor 1221	ND	U	0.020	0.0064	1	10/12/20 12:19	10/9/20	
Aroclor 1232	ND	U	0.010	0.0064	1	10/12/20 12:19	10/9/20	
Aroclor 1242	ND	U	0.010	0.0064	1	10/12/20 12:19	10/9/20	
Aroclor 1248	ND	U	0.010	0.0064	1	10/12/20 12:19	10/9/20	
Aroclor 1254	ND	U	0.010	0.0064	1	10/12/20 12:19	10/9/20	
Aroclor 1260	ND	U	0.010	0.0064	1	10/12/20 12:19	10/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	70	10 - 140	10/12/20 12:19	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB_5A_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-002	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1262	ND	U	0.010	0.0064	1	10/12/20 12:47	10/9/20	
Aroclor 1268	ND	U	0.010	0.0064	1	10/12/20 12:47	10/9/20	
Aroclor 1016	ND	U	0.010	0.0064	1	10/12/20 12:47	10/9/20	
Aroclor 1221	ND	U	0.020	0.0064	1	10/12/20 12:47	10/9/20	
Aroclor 1232	ND	U	0.010	0.0064	1	10/12/20 12:47	10/9/20	
Aroclor 1242	ND	U	0.010	0.0064	1	10/12/20 12:47	10/9/20	
Aroclor 1248	ND	U	0.010	0.0064	1	10/12/20 12:47	10/9/20	
Aroclor 1254	ND	U	0.010	0.0064	1	10/12/20 12:47	10/9/20	
Aroclor 1260	ND	U	0.010	0.0064	1	10/12/20 12:47	10/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	50	10 - 140	10/12/20 12:47	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:10
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	STM-1_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-003	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1268	ND U	0.010	0.0064	1	10/12/20 13:15	10/9/20	
Aroclor 1262	ND U	0.010	0.0064	1	10/12/20 13:15	10/9/20	
Aroclor 1016	ND U	0.010	0.0064	1	10/12/20 13:15	10/9/20	
Aroclor 1221	ND U	0.020	0.0064	1	10/12/20 13:15	10/9/20	
Aroclor 1232	ND U	0.010	0.0064	1	10/12/20 13:15	10/9/20	
Aroclor 1242	ND U	0.010	0.0064	1	10/12/20 13:15	10/9/20	
Aroclor 1248	ND U	0.010	0.0064	1	10/12/20 13:15	10/9/20	
Aroclor 1254	ND U	0.010	0.0064	1	10/12/20 13:15	10/9/20	
Aroclor 1260	ND U	0.010	0.0064	1	10/12/20 13:15	10/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	42	10 - 140	10/12/20 13:15	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-2E_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-004	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1262	ND	U	0.010	0.0064	1	10/12/20 13:43	10/9/20	
Aroclor 1268	ND	U	0.010	0.0064	1	10/12/20 13:43	10/9/20	
Aroclor 1016	ND	U	0.010	0.0064	1	10/12/20 13:43	10/9/20	
Aroclor 1221	ND	U	0.020	0.0064	1	10/12/20 13:43	10/9/20	
Aroclor 1232	ND	U	0.010	0.0064	1	10/12/20 13:43	10/9/20	
Aroclor 1242	ND	U	0.010	0.0064	1	10/12/20 13:43	10/9/20	
Aroclor 1248	ND	U	0.010	0.0064	1	10/12/20 13:43	10/9/20	
Aroclor 1254	ND	U	0.010	0.0064	1	10/12/20 13:43	10/9/20	
Aroclor 1260	ND	U	0.010	0.0064	1	10/12/20 13:43	10/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	75	10 - 140	10/12/20 13:43	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:20
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	E-1_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-005	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1268	ND	U	0.010	0.0064	1	10/12/20 14:11	10/9/20	
Aroclor 1262	ND	U	0.010	0.0064	1	10/12/20 14:11	10/9/20	
Aroclor 1016	ND	U	0.010	0.0064	1	10/12/20 14:11	10/9/20	
Aroclor 1221	ND	U	0.020	0.0064	1	10/12/20 14:11	10/9/20	
Aroclor 1232	ND	U	0.010	0.0064	1	10/12/20 14:11	10/9/20	
Aroclor 1242	ND	U	0.010	0.0064	1	10/12/20 14:11	10/9/20	
Aroclor 1248	ND	U	0.010	0.0064	1	10/12/20 14:11	10/9/20	
Aroclor 1254	ND	U	0.010	0.0064	1	10/12/20 14:11	10/9/20	
Aroclor 1260	ND	U	0.010	0.0064	1	10/12/20 14:11	10/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	68	10 - 140	10/12/20 14:11	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:55
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-4A_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-006	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1262	ND	U	0.010	0.0064	1	10/12/20 14:39	10/9/20	
Aroclor 1268	ND	U	0.010	0.0064	1	10/12/20 14:39	10/9/20	
Aroclor 1016	ND	U	0.010	0.0064	1	10/12/20 14:39	10/9/20	
Aroclor 1221	ND	U	0.020	0.0064	1	10/12/20 14:39	10/9/20	
Aroclor 1232	ND	U	0.010	0.0064	1	10/12/20 14:39	10/9/20	
Aroclor 1242	ND	U	0.010	0.0064	1	10/12/20 14:39	10/9/20	
Aroclor 1248	ND	U	0.010	0.0064	1	10/12/20 14:39	10/9/20	
Aroclor 1254	ND	U	0.010	0.0064	1	10/12/20 14:39	10/9/20	
Aroclor 1260	ND	U	0.010	0.0064	1	10/12/20 14:39	10/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	46	10 - 140	10/12/20 14:39	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 18:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-6A_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-007	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1268	ND	U	0.010	0.0064	1	10/12/20 15:35	10/9/20	
Aroclor 1262	ND	U	0.010	0.0064	1	10/12/20 15:35	10/9/20	
Aroclor 1016	ND	U	0.010	0.0064	1	10/12/20 15:35	10/9/20	
Aroclor 1221	ND	U	0.020	0.0064	1	10/12/20 15:35	10/9/20	
Aroclor 1232	ND	U	0.010	0.0064	1	10/12/20 15:35	10/9/20	
Aroclor 1242	ND	U	0.010	0.0064	1	10/12/20 15:35	10/9/20	
Aroclor 1248	ND	U	0.010	0.0064	1	10/12/20 15:35	10/9/20	
Aroclor 1254	ND	U	0.010	0.0064	1	10/12/20 15:35	10/9/20	
Aroclor 1260	ND	U	0.010	0.0064	1	10/12/20 15:35	10/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	55	10 - 140	10/12/20 15:35	

Metals

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	DUP_SW_20200923	**Basis:**	NA
Lab Code:	K2008424-001		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.39**	**J**	ug/L	0.50	0.09	1	09/29/20 14:34	09/29/20	
Cadmium	6020A	**0.069**		ug/L	0.040	0.008	1	09/29/20 14:34	09/29/20	
Copper	6020A	**13.1**		ug/L	0.10	0.05	1	09/29/20 14:34	09/29/20	
Iron	6020A	**628**		ug/L	2.0	0.3	1	09/29/20 14:34	09/29/20	
Lead	6020A	**1.56**		ug/L	0.020	0.006	1	09/29/20 14:34	09/29/20	
Manganese	6020A	**24.8**		ug/L	0.20	0.04	1	09/29/20 14:34	09/29/20	
Nickel	6020A	**2.13**		ug/L	0.20	0.04	1	09/29/20 14:34	09/29/20	
Zinc	6020A	**132**		ug/L	2.0	0.5	1	09/29/20 14:34	09/29/20	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB_5A_SW_20200923	**Basis:**	NA
Lab Code:	K2008424-002		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.43**	**J**	ug/L	0.50	0.09	1	09/29/20 14:55	09/29/20	
Cadmium	6020A	**0.072**		ug/L	0.040	0.008	1	09/29/20 14:55	09/29/20	
Copper	6020A	**13.1**		ug/L	0.10	0.05	1	09/29/20 14:55	09/29/20	
Iron	6020A	**657**		ug/L	2.0	0.3	1	09/29/20 14:55	09/29/20	
Lead	6020A	**1.64**		ug/L	0.020	0.006	1	09/29/20 14:55	09/29/20	
Manganese	6020A	**25.3**		ug/L	0.20	0.04	1	09/29/20 14:55	09/29/20	
Nickel	6020A	**2.24**		ug/L	0.20	0.04	1	09/29/20 14:55	09/29/20	
Zinc	6020A	**136**		ug/L	2.0	0.5	1	09/29/20 14:55	09/29/20	

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:10
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	STM-1_SW_20200923	**Basis:**	NA
Lab Code:	K2008424-003		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.52**	ug/L	0.50	0.09	1	09/29/20 14:59	09/29/20	
Cadmium	6020A	**0.106**	ug/L	0.040	0.008	1	09/29/20 14:59	09/29/20	
Copper	6020A	**12.9**	ug/L	0.10	0.05	1	09/29/20 14:59	09/29/20	
Iron	6020A	**449**	ug/L	2.0	0.3	1	09/29/20 14:59	09/29/20	
Lead	6020A	**1.28**	ug/L	0.020	0.006	1	09/29/20 14:59	09/29/20	
Manganese	6020A	**48.6**	ug/L	0.20	0.04	1	09/29/20 14:59	09/29/20	
Nickel	6020A	**2.96**	ug/L	0.20	0.04	1	09/29/20 14:59	09/29/20	
Zinc	6020A	**106**	ug/L	2.0	0.5	1	09/29/20 14:59	09/29/20	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-2E_SW_20200923	**Basis:**	NA
Lab Code:	K2008424-004		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.63**	ug/L	0.50	0.09	1	09/29/20 15:36	09/29/20	
Cadmium	6020A	**0.128**	ug/L	0.040	0.008	1	09/29/20 15:36	09/29/20	
Copper	6020A	**7.31**	ug/L	0.10	0.05	1	09/29/20 15:36	09/29/20	
Iron	6020A	**720**	ug/L	2.0	0.3	1	09/29/20 15:36	09/29/20	
Lead	6020A	**2.31**	ug/L	0.020	0.006	1	09/29/20 15:36	09/29/20	
Manganese	6020A	**14.3**	ug/L	0.20	0.04	1	09/29/20 15:36	09/29/20	
Nickel	6020A	**1.32**	ug/L	0.20	0.04	1	09/29/20 15:36	09/29/20	
Zinc	6020A	**86.5**	ug/L	2.0	0.5	1	09/29/20 15:36	09/29/20	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:20
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	E-1_SW_20200923	**Basis:**	NA
Lab Code:	K2008424-005		

Total Metals

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.53**	ug/L	0.50	0.09	1	09/29/20 15:40	09/29/20	
Cadmium	6020A	**0.047**	ug/L	0.040	0.008	1	09/29/20 15:40	09/29/20	
Copper	6020A	**7.16**	ug/L	0.10	0.05	1	09/29/20 15:40	09/29/20	
Iron	6020A	**223**	ug/L	2.0	0.3	1	09/29/20 15:40	09/29/20	
Lead	6020A	**1.58**	ug/L	0.020	0.006	1	09/29/20 15:40	09/29/20	
Manganese	6020A	**14.1**	ug/L	0.20	0.04	1	09/29/20 15:40	09/29/20	
Nickel	6020A	**1.35**	ug/L	0.20	0.04	1	09/29/20 15:40	09/29/20	
Zinc	6020A	**60.9**	ug/L	2.0	0.5	1	09/29/20 15:40	09/29/20	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:55
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-4A_SW_20200923	**Basis:**	NA
Lab Code:	K2008424-006		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.49**	**J**	ug/L	0.50	0.09	1	09/29/20 15:44	09/29/20	
Cadmium	6020A	**0.159**		ug/L	0.040	0.008	1	09/29/20 15:44	09/29/20	
Copper	6020A	**9.66**		ug/L	0.10	0.05	1	09/29/20 15:44	09/29/20	
Iron	6020A	**646**		ug/L	2.0	0.3	1	09/29/20 15:44	09/29/20	
Lead	6020A	**1.11**		ug/L	0.020	0.006	1	09/29/20 15:44	09/29/20	
Manganese	6020A	**49.5**		ug/L	0.20	0.04	1	09/29/20 15:44	09/29/20	
Nickel	6020A	**3.55**		ug/L	0.20	0.04	1	09/29/20 15:44	09/29/20	
Zinc	6020A	**347**		ug/L	2.0	0.5	1	09/29/20 15:44	09/29/20	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 18:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-6A_SW_20200923	**Basis:**	NA
Lab Code:	K2008424-007		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	**0.39**	**J**	ug/L	0.50	0.09	1	09/29/20 15:48	09/29/20	
Cadmium	6020A	**0.075**		ug/L	0.040	0.008	1	09/29/20 15:48	09/29/20	
Copper	6020A	**9.22**		ug/L	0.10	0.05	1	09/29/20 15:48	09/29/20	
Iron	6020A	**790**		ug/L	2.0	0.3	1	09/29/20 15:48	09/29/20	
Lead	6020A	**3.15**		ug/L	0.020	0.006	1	09/29/20 15:48	09/29/20	
Manganese	6020A	**34.1**		ug/L	0.20	0.04	1	09/29/20 15:48	09/29/20	
Nickel	6020A	**1.46**		ug/L	0.20	0.04	1	09/29/20 15:48	09/29/20	
Zinc	6020A	**143**		ug/L	2.0	0.5	1	09/29/20 15:48	09/29/20	

General Chemistry

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	DUP_SW_20200923	**Basis:**	NA
Lab Code:	K2008424-001		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**21.5**	mg/L	5.0	-	1	09/26/20 11:25	

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB_5A_SW_20200923	**Basis:**	NA
Lab Code:	K2008424-002		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**18.0**	mg/L	5.0	-	1	09/26/20 11:25	

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:10
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	STM-1_SW_20200923	**Basis:**	NA
Lab Code:	K2008424-003		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**7.0**	mg/L	5.0	-	1	09/26/20 11:25	

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-2E_SW_20200923	**Basis:**	NA
Lab Code:	K2008424-004		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**31.5**	mg/L	5.0	-	1	09/26/20 11:25	

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:20
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	E-1_SW_20200923	**Basis:**	NA
Lab Code:	K2008424-005		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**11.0**	mg/L	5.0	-	1	09/26/20 11:25	

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:55
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-4A_SW_20200923	**Basis:**	NA
Lab Code:	K2008424-006		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**10.0**	mg/L	5.0	-	1	09/26/20 11:25	

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 18:40
Sample Matrix:	Storm Water	**Date Received:**	09/24/20 13:10
Sample Name:	CB-6A_SW_20200923	**Basis:**	NA
Lab Code:	K2008424-007		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	**32.5**	mg/L	5.0	-	1	09/26/20 11:25	

QC Summary Forms

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Volatile Organic Compounds by GC/MS

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Client: ERM West, Inc **Service Request:** K2008424
Project: Univar Yeon/0533016
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: None

Sample Name	Lab Code	4-Bromofluorobenzene 68-117	Dibromofluoromethane 73-122	Toluene-d8 65-144
DUP_SW_20200923	K2008424-001	93	111	96
CB_5A_SW_20200923	K2008424-002	94	112	97
STM-1_SW_20200923	K2008424-003	94	112	98
CB-2E_SW_20200923	K2008424-004	91	111	97
E-1_SW_20200923	K2008424-005	90	111	102
CB-4A_SW_20200923	K2008424-006	91	110	99
CB-6A_SW_20200923	K2008424-007	94	110	97
Trip Blank	K2008424-008	90	110	100
Method Blank	KQ2014188-05	101	105	100
Method Blank	KQ2014299-05	93	111	98
Lab Control Sample	KQ2014188-03	108	101	101
Duplicate Lab Control Sample	KQ2014188-04	107	103	103
Lab Control Sample	KQ2014299-03	101	104	104
Duplicate Lab Control Sample	KQ2014299-04	99	103	104

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2014188-05	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	09/26/20 14:53	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	09/26/20 14:53	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	09/26/20 14:53	
Vinyl Chloride	ND	U	0.50	0.075	1	09/26/20 14:53	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	101	68 - 117	09/26/20 14:53	
Dibromofluoromethane	105	73 - 122	09/26/20 14:53	
Toluene-d8	100	65 - 144	09/26/20 14:53	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2014299-05	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	09/28/20 19:43	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	09/28/20 19:43	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	09/28/20 19:43	
Vinyl Chloride	ND	U	0.50	0.075	1	09/28/20 19:43	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	93	68 - 117	09/28/20 19:43	
Dibromofluoromethane	111	73 - 122	09/28/20 19:43	
Toluene-d8	98	65 - 144	09/28/20 19:43	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Analyzed:**	09/26/20
Sample Matrix:	Storm Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	696814

	Lab Control Sample KQ2014188-03			Duplicate Lab Control Sample KQ2014188-04					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloroform	9.11	10.0	91	9.23	10.0	92	70-129	1	30
Tetrachloroethene (PCE)	9.41	10.0	94	9.27	10.0	93	62-126	1	30
Trichloroethene (TCE)	8.67	10.0	87	9.02	10.0	90	67-128	4	30
Vinyl Chloride	7.65	10.0	77	7.88	10.0	79	55-123	3	30

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Analyzed:**	09/28/20
Sample Matrix:	Storm Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	696993

	Lab Control Sample KQ2014299-03			Duplicate Lab Control Sample KQ2014299-04					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloroform	9.52	10.0	95	9.34	10.0	93	70-129	2	30
Tetrachloroethene (PCE)	9.34	10.0	93	8.93	10.0	89	62-126	4	30
Trichloroethene (TCE)	8.93	10.0	89	9.29	10.0	93	67-128	4	30
Vinyl Chloride	9.11	10.0	91	8.90	10.0	89	55-123	2	30

Semivolatile Organic Compounds by GC/MS

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Client: ERM West, Inc **Service Request:** K2008424
Project: Univar Yeon/0533016
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Extraction Method: EPA 3520C

Sample Name	Lab Code	Fluoranthene-d10 42-133	Fluorene-d10 42-131	Terphenyl-d14 32-129
DUP_SW_20200923	K2008424-001	86	93	73
CB_5A_SW_20200923	K2008424-002	85	91	81
STM-1_SW_20200923	K2008424-003	95	90	79
CB-2E_SW_20200923	K2008424-004	90	93	92
E-1_SW_20200923	K2008424-005	99	91	96
CB-4A_SW_20200923	K2008424-006	102	95	78
CB-6A_SW_20200923	K2008424-007	89	92	89
Method Blank	KQ2014212-03	101	96	100
Lab Control Sample	KQ2014212-01	106	96	104
Duplicate Lab Control Sample	KQ2014212-02	109	100	105

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2014212-03	**Basis:**	NA

Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method: 8270D
Prep Method: EPA 3520C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Acenaphthene	ND	U	0.023	0.0050	1	10/01/20 06:11	9/28/20	
Anthracene	ND	U	0.023	0.0041	1	10/01/20 06:11	9/28/20	
Benz(a)anthracene	ND	U	0.023	0.0030	1	10/01/20 06:11	9/28/20	
Benzo(a)pyrene	ND	U	0.023	0.0049	1	10/01/20 06:11	9/28/20	
Benzo(b)fluoranthene	ND	U	0.023	0.0047	1	10/01/20 06:11	9/28/20	
Benzo(k)fluoranthene	ND	U	0.023	0.0034	1	10/01/20 06:11	9/28/20	
Chrysene	ND	U	0.023	0.0039	1	10/01/20 06:11	9/28/20	
Dibenz(a,h)anthracene	ND	U	0.023	0.0029	1	10/01/20 06:11	9/28/20	
Fluoranthene	ND	U	0.023	0.012	1	10/01/20 06:11	9/28/20	
Fluorene	ND	U	0.023	0.0043	1	10/01/20 06:11	9/28/20	
Indeno(1,2,3-cd)pyrene	ND	U	0.023	0.0030	1	10/01/20 06:11	9/28/20	
Pyrene	ND	U	0.023	0.0060	1	10/01/20 06:11	9/28/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Fluoranthene-d10	101	42 - 133	10/01/20 06:11	
Fluorene-d10	96	42 - 131	10/01/20 06:11	
Terphenyl-d14	100	32 - 129	10/01/20 06:11	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Analyzed:**	10/01/20
Sample Matrix:	Storm Water	**Date Extracted:**	09/28/20

Duplicate Lab Control Sample Summary
Polycyclic Aromatic Hydrocarbons by GC/MS SIM

Analysis Method:	8270D	**Units:**	ug/L
Prep Method:	EPA 3520C	**Basis:**	NA
		Analysis Lot:	697648

	Lab Control Sample KQ2014212-01			Duplicate Lab Control Sample KQ2014212-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Acenaphthene	2.30	2.50	92	2.35	2.50	94	63-121	2	30
Anthracene	2.36	2.50	95	2.38	2.50	95	68-127	<1	30
Benz(a)anthracene	2.30	2.50	92	2.35	2.50	94	74-124	2	30
Benzo(a)pyrene	2.52	2.50	101	2.55	2.50	102	75-131	1	30
Benzo(b)fluoranthene	2.52	2.50	101	2.52	2.50	101	73-136	<1	30
Benzo(k)fluoranthene	2.49	2.50	100	2.53	2.50	101	74-134	1	30
Chrysene	2.38	2.50	95	2.40	2.50	96	74-132	<1	30
Dibenz(a,h)anthracene	2.33	2.50	93	2.33	2.50	93	59-135	<1	30
Fluoranthene	2.52	2.50	101	2.54	2.50	101	70-127	<1	30
Fluorene	2.42	2.50	97	2.45	2.50	98	68-121	1	30
Indeno(1,2,3-cd)pyrene	2.40	2.50	96	2.36	2.50	95	63-136	1	30
Pyrene	2.71	2.50	109	2.74	2.50	110	72-127	<1	30

Client: ERM West, Inc **Service Request:** K2008424
Project: Univar Yeon/0533016
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Extraction Method: EPA 3510C

Sample Name	Lab Code	2-Fluorophenol 34-118	Nitrobenzene-d5 40-117	p-Terphenyl-d14 48-109
DUP_SW_20200923	K2008424-001	43	84	67
CB_5A_SW_20200923	K2008424-002	49	96	77
STM-1_SW_20200923	K2008424-003	53	98	77
CB-2E_SW_20200923	K2008424-004	52	98	79
E-1_SW_20200923	K2008424-005	50	94	83
CB-4A_SW_20200923	K2008424-006	54	97	77
CB-6A_SW_20200923	K2008424-007	49	95	81
Method Blank	KQ2014398-03	58	105	112*
Lab Control Sample	KQ2014398-01	59	103	110*
Duplicate Lab Control Sample	KQ2014398-02	57	94	97

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2014398-03	**Basis:**	NA

Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method: 8270D
Prep Method: EPA 3510C

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Bis(2-ethylhexyl) Phthalate	**0.23**	**J**	0.94	0.13	1	10/04/20 13:37	9/30/20	
Butyl Benzyl Phthalate	ND	U	0.19	0.021	1	10/04/20 13:37	9/30/20	
Diethyl Phthalate	ND	U	0.19	0.015	1	10/04/20 13:37	9/30/20	
Dimethyl Phthalate	ND	U	0.19	0.021	1	10/04/20 13:37	9/30/20	
Di-n-butyl Phthalate	**0.049**	**J**	0.19	0.023	1	10/04/20 13:37	9/30/20	
Di-n-octyl Phthalate	ND	U	0.19	0.033	1	10/04/20 13:37	9/30/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
2-Fluorophenol	58	34 - 118	10/04/20 13:37	
Nitrobenzene-d5	105	40 - 117	10/04/20 13:37	
p-Terphenyl-d14	112	48 - 109	10/04/20 13:37	*

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Analyzed:**	10/04/20
Sample Matrix:	Storm Water	**Date Extracted:**	09/30/20

Duplicate Lab Control Sample Summary
Low Level Semivolatile Organic Compounds by GC/MS

Analysis Method:	8270D	**Units:**	ug/L
Prep Method:	EPA 3510C	**Basis:**	NA
		Analysis Lot:	697842

	Lab Control Sample KQ2014398-01			Duplicate Lab Control Sample KQ2014398-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Bis(2-ethylhexyl) Phthalate	6.18	5.00	124	5.98	5.00	120	42-147	3	30
Butyl Benzyl Phthalate	6.12	5.00	122 *	5.92	5.00	118	59-119	3	30
Diethyl Phthalate	5.87	5.00	117 *	5.78	5.00	116 *	58-114	2	30
Dimethyl Phthalate	5.52	5.00	110 *	5.50	5.00	110 *	58-109	<1	30
Di-n-butyl Phthalate	6.04	5.00	121	5.96	5.00	119	61-121	1	30
Di-n-octyl Phthalate	6.83	5.00	137 *	6.57	5.00	131 *	50-125	4	30

Semivolatile Organic Compounds by GC

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: ERM West, Inc **Service Request:** K2008424
Project: Univar Yeon/0533016
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Extraction Method: EPA 3511

Sample Name	Lab Code	Decachlorobiphenyl 14-160	Tetrachloro-m-xylene 30-148
DUP_SW_20200923	K2008424-001	52	98
DUP_SW_20200923 RE1	K2008424-001	35	100
CB_5A_SW_20200923	K2008424-002	46	93
CB_5A_SW_20200923 RE1	K2008424-002	53	110
STM-1_SW_20200923	K2008424-003	42	88
STM-1_SW_20200923 RE1	K2008424-003	89	144
STM-1_SW_20200923 DL2	K2008424-003	44	96
CB-2E_SW_20200923	K2008424-004	55	97
CB-2E_SW_20200923 RE1	K2008424-004	84	124
E-1_SW_20200923	K2008424-005	54	94
E-1_SW_20200923 RE1	K2008424-005	92	135
CB-4A_SW_20200923	K2008424-006	44	77
CB-4A_SW_20200923 RE1	K2008424-006	90	139
CB-4A_SW_20200923 DL2	K2008424-006	39	78
CB-6A_SW_20200923	K2008424-007	56	86
CB-6A_SW_20200923 RE1	K2008424-007	67	143
Method Blank	KQ2014320-05	75	86
Method Blank	KQ2014556-03	94	103
Lab Control Sample	KQ2014320-01	66	73
Duplicate Lab Control Sample	KQ2014320-02	63	82
Lab Control Sample	KQ2014320-03	50	84
Duplicate Lab Control Sample	KQ2014320-04	69	83
Lab Control Sample	KQ2014556-01	101	109
Duplicate Lab Control Sample	KQ2014556-02	102	112

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/L
Lab Code:	KQ2014320-05	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aldrin	ND U	2.0	0.77	1	10/01/20 22:37	9/30/20	
Chlordane	ND U	20	3.8	1	10/01/20 22:37	9/30/20	
4,4'-DDD	ND U	2.0	0.57	1	10/01/20 22:37	9/30/20	
4,4'-DDE	ND U	1.0	0.46	1	10/01/20 22:37	9/30/20	
4,4'-DDT	ND U	2.0	0.75	1	10/01/20 22:37	9/30/20	
Dieldrin	ND U	1.0	0.44	1	10/01/20 22:37	9/30/20	
Heptachlor Epoxide	ND U	1.0	0.29	1	10/01/20 22:37	9/30/20	
Hexachlorobenzene	**0.32 J**	1.0	0.27	1	10/01/20 22:37	9/30/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	75	14 - 160	10/01/20 22:37	
Tetrachloro-m-xylene	86	30 - 148	10/01/20 22:37	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ng/L
Lab Code:	KQ2014556-03	**Basis:**	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method: 8081B
Prep Method: EPA 3511

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Chlordane	ND U	20	3.8	1	10/05/20 11:16	10/2/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	94	14 - 160	10/05/20 11:16	
Tetrachloro-m-xylene	103	30 - 148	10/05/20 11:16	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Analyzed:**	10/01/20
Sample Matrix:	Storm Water	**Date Extracted:**	09/30/20

Duplicate Lab Control Sample Summary
Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method:	8081B	**Units:**	ng/L
Prep Method:	EPA 3511	**Basis:**	NA
		Analysis Lot:	697604

	Lab Control Sample KQ2014320-01			Duplicate Lab Control Sample KQ2014320-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
4,4'-DDD	18.3	25.0	73	19.0	25.0	76	73-173	4	30
4,4'-DDE	18.9	25.0	76	19.4	25.0	78	70-169	3	30
4,4'-DDT	19.5	25.0	78	20.1	25.0	81	72-174	3	30
Aldrin	18.0	25.0	72	18.8	25.0	75	54-163	4	30
Dieldrin	17.0	25.0	68	18.2	25.0	73	60-166	7	30
Heptachlor Epoxide	18.8	25.0	75	19.3	25.0	77	59-163	3	30
Hexachlorobenzene	18.8	25.0	75	20.2	25.0	81	52-132	7	30

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Analyzed:**	10/05/20
Sample Matrix:	Storm Water	**Date Extracted:**	10/02/20

Duplicate Lab Control Sample Summary
Ultra Low Level Organochlorine Pesticides by GC/ECD

Analysis Method:	8081B	**Units:**	ng/L
Prep Method:	EPA 3511	**Basis:**	NA
		Analysis Lot:	697962

	Lab Control Sample KQ2014556-01			Duplicate Lab Control Sample KQ2014556-02					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chlordane	586	500	117	590	500	118	27-172	<1	30

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Confirmation Results

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
SRM Matrix:	Storm Water	**Date Received:**	9/24/20
Sample Name:	DUP_SW_20200923		
Lab Code:	K2008424-001	**Units:**	ng/L
		Basis:	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analytical Method: 8081B
Prep Method: EPA 3511

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
4,4'-DDD	0.57	0.82	1.4	52	JP	1	10/02/20 01:35
4,4'-DDT	0.75	4.0	6.7	50	P	1	10/02/20 01:35

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Confirmation Results

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 15:15
SRM Matrix:	Storm Water	**Date Received:**	9/24/20
Sample Name:	CB_5A_SW_20200923		
Lab Code:	K2008424-002	**Units:**	ng/L
		Basis:	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analytical Method: 8081B
Prep Method: EPA 3511

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
4,4'-DDD	0.57	0.82	1.4	52	JP	1	10/02/20 02:04
4,4'-DDE	0.46	1.2	2.2	59	P	1	10/02/20 02:04
Dieldrin	0.44	0.90	1.1	20	J	1	10/02/20 02:04
Heptachlor Epoxide	0.29	0.42	0.70	50	JP	1	10/02/20 02:04
Hexachlorobenzene	0.27	0.34	0.88	89	JP	1	10/02/20 02:04

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Confirmation Results

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 16:10
SRM Matrix:	Storm Water	**Date Received:**	9/24/20
Sample Name:	STM-1_SW_20200923		
Lab Code:	K2008424-003	**Units:**	ng/L
		Basis:	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analytical Method: 8081B
Prep Method: EPA 3511

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Heptachlor Epoxide	0.29	0.58	1.3	77	JP	1	10/02/20 02:34
Hexachlorobenzene	0.27	0.51	0.67	27	J	1	10/02/20 02:34
4,4'-DDT	3.8	77	100	26		5	10/02/20 11:10

Client: ERM West, Inc
Project: Univar Yeon/0533016
SRM Matrix: Storm Water

Service Request: K2008424
Date Collected: 09/23/20 16:40
Date Received: 9/24/20

Sample Name: CB-2E_SW_20200923
Lab Code: K2008424-004

Units: ng/L
Basis: NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analytical Method: 8081B
Prep Method: EPA 3511

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
4,4'-DDD	0.57	0.66	1.6	83	JP	1	10/02/20 03:03
4,4'-DDE	0.46	1.8	1.8	<1		1	10/02/20 03:03
4,4'-DDT	0.75	35	49	33		1	10/02/20 03:03
Hexachlorobenzene	0.27	3.0	3.1	3		1	10/02/20 03:03

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Confirmation Results

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:20
SRM Matrix:	Storm Water	**Date Received:**	9/24/20
Sample Name:	E-1_SW_20200923		
Lab Code:	K2008424-005	**Units:**	ng/L
		Basis:	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analytical Method: 8081B
Prep Method: EPA 3511

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
4,4'-DDD	0.57	2.2	3.6	48	P	1	10/02/20 03:33
4,4'-DDE	0.46	1.2	1.8	40		1	10/02/20 03:33
4,4'-DDT	0.75	11	16	37		1	10/02/20 03:33
Dieldrin	0.44	0.57	0.69	19	J	1	10/02/20 03:33
Hexachlorobenzene	0.27	4.3	5.6	26		1	10/02/20 03:33

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Confirmation Results

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20 17:55
SRM Matrix:	Storm Water	**Date Received:**	9/24/20
Sample Name:	CB-4A_SW_20200923		
Lab Code:	K2008424-006	**Units:**	ng/L
		Basis:	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analytical Method: 8081B
Prep Method: EPA 3511

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Hexachlorobenzene	0.27	4.2	4.5	7		1	10/02/20 04:02
4,4'-DDT	15	440	600	31		20	10/02/20 11:39

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Confirmation Results

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
SRM Matrix:	Storm Water	**Date Received:**	
Sample Name:	Lab Control Sample		
Lab Code:	KQ2014320-01	**Units:**	ng/L
		Basis:	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analytical Method: 8081B
Prep Method: EPA 3511

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
4,4'-DDD	0.57	18.3	18.5	1		1	10/01/20 23:07
4,4'-DDE	0.46	18.9	19.0	<1		1	10/01/20 23:07
4,4'-DDT	0.75	19.5	20.3	4		1	10/01/20 23:07
Aldrin	0.77	18.0	18.1	<1		1	10/01/20 23:07
Dieldrin	0.44	17.0	18.4	8		1	10/01/20 23:07
Heptachlor Epoxide	0.29	18.8	19.0	1		1	10/01/20 23:07
Hexachlorobenzene	0.27	18.8	19.2	2		1	10/01/20 23:07

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Confirmation Results

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
SRM Matrix:	Storm Water	**Date Received:**	
Sample Name:	Duplicate Lab Control Sample		
Lab Code:	KQ2014320-02	**Units:**	ng/L
		Basis:	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analytical Method: 8081B
Prep Method: EPA 3511

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
4,4'-DDD	0.57	19.0	19.0	<1		1	10/01/20 23:36
4,4'-DDE	0.46	19.4	19.7	2		1	10/01/20 23:36
4,4'-DDT	0.75	20.1	21.2	5		1	10/01/20 23:36
Aldrin	0.77	18.8	19.0	1		1	10/01/20 23:36
Dieldrin	0.44	18.2	19.0	4		1	10/01/20 23:36
Heptachlor Epoxide	0.29	19.3	19.7	2		1	10/01/20 23:36
Hexachlorobenzene	0.27	20.2	20.3	<1		1	10/01/20 23:36

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Confirmation Results

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
SRM Matrix:	Storm Water	**Date Received:**	
Sample Name:	Method Blank		
Lab Code:	KQ2014320-05	**Units:**	ng/L
		Basis:	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analytical Method: 8081B
Prep Method: EPA 3511

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Hexachlorobenzene	0.27	0.32	0.36	12	J	1	10/01/20 22:37

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Confirmation Results

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
SRM Matrix:	Storm Water	**Date Received:**	
Sample Name:	Lab Control Sample		
Lab Code:	KQ2014556-01	**Units:**	ng/L
		Basis:	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analytical Method: 8081B
Prep Method: EPA 3511

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Chlordane	3.8	586	620	6		1	10/05/20 11:46

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Confirmation Results

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
SRM Matrix:	Storm Water	**Date Received:**	
Sample Name:	Duplicate Lab Control Sample		
Lab Code:	KQ2014556-02	**Units:**	ng/L
		Basis:	NA

Ultra Low Level Organochlorine Pesticides by GC/ECD

Analytical Method: 8081B
Prep Method: EPA 3511

	MDL	Primary Result	Confirmation Result	RPD	Q	Dilution Factor	Date Analyzed
Chlordane	3.8	590	634	7		1	10/05/20 12:15

Client: ERM West, Inc **Service Request:** K2008424
Project: Univar Yeon/0533016
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Extraction Method: EPA 3511

Sample Name	Lab Code	Decachlorobiphenyl 10 - 140
DUP_SW_20200923	K2008424-001	70
CB_5A_SW_20200923	K2008424-002	50
STM-1_SW_20200923	K2008424-003	42
CB-2E_SW_20200923	K2008424-004	75
E-1_SW_20200923	K2008424-005	68
CB-4A_SW_20200923	K2008424-006	46
CB-6A_SW_20200923	K2008424-007	55
Lab Control Sample	KWG2002908-1	103
Duplicate Lab Control Sample	KWG2002908-2	109
Method Blank	KWG2002908-3	103

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KWG2002908-3	**Basis:**	NA

Polychlorinated Biphenyls (PCBs)

Analysis Method: 8082A
Prep Method: EPA 3511

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Aroclor 1262	ND	U	0.0050	0.0032	1	10/12/20 09:32	10/9/20	
Aroclor 1268	ND	U	0.0050	0.0032	1	10/12/20 09:32	10/9/20	
Aroclor 1016	ND	U	0.0050	0.0032	1	10/12/20 09:32	10/9/20	
Aroclor 1221	ND	U	0.010	0.0032	1	10/12/20 09:32	10/9/20	
Aroclor 1232	ND	U	0.0050	0.0032	1	10/12/20 09:32	10/9/20	
Aroclor 1242	ND	U	0.0050	0.0032	1	10/12/20 09:32	10/9/20	
Aroclor 1248	ND	U	0.0050	0.0032	1	10/12/20 09:32	10/9/20	
Aroclor 1254	ND	U	0.0050	0.0032	1	10/12/20 09:32	10/9/20	
Aroclor 1260	ND	U	0.0050	0.0032	1	10/12/20 09:32	10/9/20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
Decachlorobiphenyl	103	10 - 140	10/12/20 09:32	

Metals

ALS Environmental—Kelso Laboratory
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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	KQ2014143-01		

Total Metals

Analyte Name	Analysis Method	Result		Units	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
Arsenic	6020A	ND	U	ug/L	0.50	0.09	1	09/29/20 14:26	09/29/20	
Cadmium	6020A	ND	U	ug/L	0.040	0.008	1	09/29/20 14:26	09/29/20	
Copper	6020A	ND	U	ug/L	0.10	0.05	1	09/29/20 14:26	09/29/20	
Iron	6020A	ND	U	ug/L	2.0	0.3	1	09/29/20 14:26	09/29/20	
Lead	6020A	ND	U	ug/L	0.020	0.006	1	09/29/20 14:26	09/29/20	
Manganese	6020A	ND	U	ug/L	0.20	0.04	1	09/29/20 14:26	09/29/20	
Nickel	6020A	ND	U	ug/L	0.20	0.04	1	09/29/20 14:26	09/29/20	
Zinc	6020A	ND	U	ug/L	2.0	0.5	1	09/29/20 14:26	09/29/20	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	09/23/20
Sample Matrix:	Storm Water	**Date Received:**	09/24/20
		Date Analyzed:	09/29/20
		Date Extracted:	09/29/20

Matrix Spike Summary
Total Metals

Sample Name:	DUP_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-001	**Basis:**	NA
Analysis Method:	6020A		
Prep Method:	EPA CLP ILM04.0		

Matrix Spike
KQ2014143-04

Analyte Name	Sample Result	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	0.39 J	49.2	50.0	98	75-125
Cadmium	0.069	26.1	25.0	104	75-125
Copper	13.1	24.6	12.5	93	75-125
Iron	628	708	50.0	162 #	75-125
Lead	1.56	50.7	50.0	98	75-125
Manganese	24.8	52.1	25.0	109	75-125
Nickel	2.13	26.1	25.0	96	75-125
Zinc	132	158	25.0	106 #	75-125

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project	Univar Yeon/0533016	**Date Collected:**	09/23/20
Sample Matrix:	Storm Water	**Date Received:**	09/24/20
		Date Analyzed:	09/29/20

Replicate Sample Summary
Total Metals

Sample Name:	DUP_SW_20200923	**Units:**	ug/L
Lab Code:	K2008424-001	**Basis:**	NA

Analyte Name	Analysis Method	MRL	MDL	Sample Result	Duplicate Sample KQ2014143-03 Result	Average	RPD	RPD Limit
Arsenic	6020A	0.50	0.09	0.39 J	0.40 J	0.40	3	20
Cadmium	6020A	0.040	0.008	0.069	0.084	0.077	20	20
Copper	6020A	0.10	0.05	13.1	13.1	13.1	<1	20
Iron	6020A	2.0	0.3	628	648	638	3	20
Lead	6020A	0.020	0.006	1.56	1.61	1.59	3	20
Manganese	6020A	0.20	0.04	24.8	24.8	24.8	<1	20
Nickel	6020A	0.20	0.04	2.13	2.15	2.14	<1	20
Zinc	6020A	2.0	0.5	132	132	132	<1	20

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

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QA/QC Report

Client: ERM West, Inc
Project: Univar Yeon/0533016
Sample Matrix: Storm Water

Service Request: K2008424
Date Analyzed: 09/29/20

Lab Control Sample Summary
Total Metals

Units:ug/L
Basis:NA

Lab Control Sample
KQ2014143-02

Analyte Name	Analytical Method	Result	Spike Amount	% Rec	% Rec Limits
Arsenic	6020A	51.0	50.0	102	80-120
Cadmium	6020A	26.9	25.0	107	80-120
Copper	6020A	12.1	12.5	97	80-120
Iron	6020A	50.5	50.0	101	80-120
Lead	6020A	51.9	50.0	104	80-120
Manganese	6020A	27.2	25.0	109	80-120
Nickel	6020A	24.2	25.0	97	80-120
Zinc	6020A	25.6	25.0	103	80-120

General Chemistry

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2008424-MB1		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	1.0	-	1	09/26/20 11:25	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Basis:**	NA
Lab Code:	K2008424-MB2		

General Chemistry Parameters

Analyte Name	Analysis Method	Result	Units	MRL	MDL	Dil.	Date Analyzed	Q
Solids, Total Suspended (TSS)	SM 2540 D	ND U	mg/L	1.0	-	1	09/26/20 11:25	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2008424
Project:	Univar Yeon/0533016	**Date Analyzed:**	09/26/20
Sample Matrix:	Storm Water	**Date Extracted:**	NA

Lab Control Sample Summary
Solids, Total Suspended (TSS)

Analysis Method:	SM 2540 D	**Units:**	mg/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	696798

Sample Name	Lab Code	Result	Spike Amount	% Rec	% Rec Limits
Lab Control Sample	K2008424-LCS	412	402	102	85-115

December 28, 2020 Service Request No:K2011774

Dylan Stankus
ERM-West, Incorporated
1001 SW 5th Ave. #1010
Portland, OR 97204

Laboratory Results for: Univar SW

Dear Dylan,

Enclosed are the results of the sample(s) submitted to our laboratory December 15, 2020
For your reference, these analyses have been assigned our service request number **K2011774.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

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Narrative Documents

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Client: ERM West, Inc
Project: Univar SW
Sample Matrix: Storm Water

Service Request: K2011774
Date Received: 12/15/2020

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Six storm water samples were received for analysis at ALS Environmental on 12/15/2020. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Volatiles by GC/MS:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 12/28/2020

SAMPLE DETECTION SUMMARY

CLIENT ID: DUP-20201211	Lab ID: K2011774-001					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Tetrachloroethene (PCE)	11		0.099	0.50	ug/L	8260C
Trichloroethene (TCE)	12		0.10	0.50	ug/L	8260C

CLIENT ID: STM-1-20201211	Lab ID: K2011774-002					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Tetrachloroethene (PCE)	12		0.099	0.50	ug/L	8260C
Trichloroethene (TCE)	12		0.10	0.50	ug/L	8260C

CLIENT ID: W4-20201211	Lab ID: K2011774-003					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Tetrachloroethene (PCE)	0.20	J	0.099	0.50	ug/L	8260C
Trichloroethene (TCE)	0.52		0.10	0.50	ug/L	8260C

CLIENT ID: CB-1B-20201211	Lab ID: K2011774-004					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Trichloroethene (TCE)	0.31	J	0.10	0.50	ug/L	8260C

CLIENT ID: CB-1J-20201211	Lab ID: K2011774-005					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Trichloroethene (TCE)	0.21	J	0.10	0.50	ug/L	8260C

CLIENT ID: TB-20201211	Lab ID: K2011774-006					
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Trichloroethene (TCE)	0.21	J	0.10	0.50	ug/L	8260C

Sample Receipt Information

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SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2011774-001	DUP-20201211	12/11/2020	1440
K2011774-002	STM-1-20201211	12/11/2020	1440
K2011774-003	W4-20201211	12/11/2020	1430
K2011774-004	CB-1B-20201211	12/11/2020	1430
K2011774-005	CB-1J-20201211	12/11/2020	1415
K2011774-006	TB-20201211	12/11/2020	

ALS Environmental

CHAIN OF CUSTODY
113705

003

SR# 12011794

COC Set____of____

COC#_____

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www.alsglobal.com

Project Name: ONWAR SW
Project Number:
Project Manager: DYLAN STANKUS
Company: ERM
Address: 1650 SW 6th Ave Ste 1650
Phone #: 971 517 7034
email: emily.ponasik@erm.com
Sampler Signature: Scott + Emily
Sampler Printed Name:

CLIENT SAMPLE ID	LABID	SAMPLING Date	SAMPLING Time	Matrix	NUMBER OF CONTAINERS	14D 8260C / VOC FP	1	2	3	4	5	Remarks
1. DUP-20201211		12/11/20	1440	W		X						
2. SM-1-20201211		↓	1440	↓		↓						
3. W4-20201211		↓	1430	↓		↓						
4. LB-1B-20201211		↓	1430	↓		↓						
5. LB-1J-20201211		↓	1415	↓		↓						
6. TB-20201211		↓		↓		X						
7.												
8.												
9.												
10.												

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
X V. EDD

Invoice Information

P.O.#_____
Bill To:_____

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
X Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

PCE, TCE, CHLOROFORM, + VC
KELLEY LOVESCY IS LAB MANAGER

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other_____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature	Signature	Signature	Signature	Signature	Signature
Printed Name: Scott Terr	Printed Name	Printed Name	Printed Name	Printed Name	Printed Name
Firm: ERM	Firm	Firm	Firm	Firm	Firm
Date/Time: 12/14/20	Date/Time: 12/15/20 1145	Date/Time	Date/Time	Date/Time	Date/Time

PM KL

Cooler Receipt and Preservation Form

Client GRM Service Request K20 11774

Received: 12/15/20 Opened: 12/15/20 By: BR Unloaded: 12/15/20 By: BR

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
3.0	—	IR07		—		9410249268 95	

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

Miscellaneous Forms

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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: ERM West, Inc
Project: Univar SW/
Service Request: K2011774

Sample Name: DUP-20201211
Lab Code: K2011774-001
Sample Matrix: Storm Water
Date Collected: 12/11/20
Date Received: 12/15/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES

Sample Name: STM-1-20201211
Lab Code: K2011774-002
Sample Matrix: Storm Water
Date Collected: 12/11/20
Date Received: 12/15/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES

Sample Name: W4-20201211
Lab Code: K2011774-003
Sample Matrix: Storm Water
Date Collected: 12/11/20
Date Received: 12/15/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES

Sample Name: CB-1B-20201211
Lab Code: K2011774-004
Sample Matrix: Storm Water
Date Collected: 12/11/20
Date Received: 12/15/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES

Sample Name: CB-1J-20201211
Lab Code: K2011774-005
Sample Matrix: Storm Water
Date Collected: 12/11/20
Date Received: 12/15/20

Analysis Method	Extracted/Digested By	Analyzed By
8260C		JJAMES

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dba ALS Environmental

Analyst Summary report

Client:	ERM West, Inc	**Service Request:**	K2011774
Project:	Univar SW/		

Sample Name:	TB-20201211	**Date Collected:**	12/11/20
Lab Code:	K2011774-006	**Date Received:**	12/15/20
Sample Matrix:	Storm Water		

Analysis Method	**Extracted/Digested By**	**Analyzed By**
8260C		JJAMES

Sample Results

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Volatile Organic Compounds by GC/MS

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Phone (360) 577-7222 Fax (360) 425-9096
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ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2011774
Project:	Univar SW	**Date Collected:**	12/11/20 14:40
Sample Matrix:	Storm Water	**Date Received:**	12/15/20 11:45
Sample Name:	DUP-20201211	**Units:**	ug/L
Lab Code:	K2011774-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND U	0.50	0.072	1	12/16/20 17:47	
Tetrachloroethene (PCE)	**11**	0.50	0.099	1	12/16/20 17:47	
Trichloroethene (TCE)	**12**	0.50	0.10	1	12/16/20 17:47	
Vinyl Chloride	ND U	0.50	0.075	1	12/16/20 17:47	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	89	68 - 117	12/16/20 17:47	
Dibromofluoromethane	98	73 - 122	12/16/20 17:47	
Toluene-d8	98	65 - 144	12/16/20 17:47	

ALS Group USA, Corp.
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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2011774
Project:	Univar SW	**Date Collected:**	12/11/20 14:40
Sample Matrix:	Storm Water	**Date Received:**	12/15/20 11:45
Sample Name:	STM-1-20201211	**Units:**	ug/L
Lab Code:	K2011774-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND U	0.50	0.072	1	12/16/20 18:14	
Tetrachloroethene (PCE)	**12**	0.50	0.099	1	12/16/20 18:14	
Trichloroethene (TCE)	**12**	0.50	0.10	1	12/16/20 18:14	
Vinyl Chloride	ND U	0.50	0.075	1	12/16/20 18:14	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	94	68 - 117	12/16/20 18:14	
Dibromofluoromethane	99	73 - 122	12/16/20 18:14	
Toluene-d8	97	65 - 144	12/16/20 18:14	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2011774
Project:	Univar SW	**Date Collected:**	12/11/20 14:30
Sample Matrix:	Storm Water	**Date Received:**	12/15/20 11:45
Sample Name:	W4-20201211	**Units:**	ug/L
Lab Code:	K2011774-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	12/16/20 18:40	
Tetrachloroethene (PCE)	**0.20**	**J**	0.50	0.099	1	12/16/20 18:40	
Trichloroethene (TCE)	**0.52**		0.50	0.10	1	12/16/20 18:40	
Vinyl Chloride	ND	U	0.50	0.075	1	12/16/20 18:40	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	68 - 117	12/16/20 18:40	
Dibromofluoromethane	99	73 - 122	12/16/20 18:40	
Toluene-d8	100	65 - 144	12/16/20 18:40	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2011774
Project:	Univar SW	**Date Collected:**	12/11/20 14:30
Sample Matrix:	Storm Water	**Date Received:**	12/15/20 11:45
Sample Name:	CB-1B-20201211	**Units:**	ug/L
Lab Code:	K2011774-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	12/16/20 19:07	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	12/16/20 19:07	
Trichloroethene (TCE)	**0.31**	**J**	0.50	0.10	1	12/16/20 19:07	
Vinyl Chloride	ND	U	0.50	0.075	1	12/16/20 19:07	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	86	68 - 117	12/16/20 19:07	
Dibromofluoromethane	99	73 - 122	12/16/20 19:07	
Toluene-d8	98	65 - 144	12/16/20 19:07	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2011774
Project:	Univar SW	**Date Collected:**	12/11/20 14:15
Sample Matrix:	Storm Water	**Date Received:**	12/15/20 11:45
Sample Name:	CB-1J-20201211	**Units:**	ug/L
Lab Code:	K2011774-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	12/16/20 19:33	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	12/16/20 19:33	
Trichloroethene (TCE)	**0.21**	**J**	0.50	0.10	1	12/16/20 19:33	
Vinyl Chloride	ND	U	0.50	0.075	1	12/16/20 19:33	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	91	68 - 117	12/16/20 19:33	
Dibromofluoromethane	97	73 - 122	12/16/20 19:33	
Toluene-d8	100	65 - 144	12/16/20 19:33	

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2011774
Project:	Univar SW	**Date Collected:**	12/11/20
Sample Matrix:	Storm Water	**Date Received:**	12/15/20 11:45
Sample Name:	TB-20201211	**Units:**	ug/L
Lab Code:	K2011774-006	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	12/16/20 21:20	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	12/16/20 21:20	
Trichloroethene (TCE)	**0.21**	**J**	0.50	0.10	1	12/16/20 21:20	
Vinyl Chloride	ND	U	0.50	0.075	1	12/16/20 21:20	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	90	68 - 117	12/16/20 21:20	
Dibromofluoromethane	99	73 - 122	12/16/20 21:20	
Toluene-d8	98	65 - 144	12/16/20 21:20	

QC Summary Forms

ALS Environmental—Kelso Laboratory
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Volatile Organic Compounds by GC/MS

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www.alsglobal.com

Client: ERM West, Inc **Service Request:** K2011774
Project: Univar SW
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: None

Sample Name	Lab Code	4-Bromofluorobenzene 68-117	Dibromofluoromethane 73-122	Toluene-d8 65-144
DUP-20201211	K2011774-001	89	98	98
STM-1-20201211	K2011774-002	94	99	97
W4-20201211	K2011774-003	91	99	100
CB-1B-20201211	K2011774-004	86	99	98
CB-1J-20201211	K2011774-005	91	97	100
TB-20201211	K2011774-006	90	99	98
Method Blank	KQ2020225-07	87	98	98
Lab Control Sample	KQ2020225-05	91	99	98
Duplicate Lab Control Sample	KQ2020225-06	91	97	99
CB-1J-20201211	KQ2020225-01	91	100	98
CB-1J-20201211	KQ2020225-02	94	100	99

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2011774
Project:	Univar SW	**Date Collected:**	12/11/20
Sample Matrix:	Storm Water	**Date Received:**	12/15/20
		Date Analyzed:	12/16/20
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	CB-1J-20201211	**Units:**	ug/L
Lab Code:	K2011774-005	**Basis:**	NA
Analysis Method:	8260C		
Prep Method:	None		

		Matrix Spike KQ2020225-01			**Duplicate Matrix Spike** KQ2020225-02					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloroform	ND U	11.9	10.0	119	10.8	10.0	108	64-133	9	30
Tetrachloroethene (PCE)	ND U	11.1	10.0	111	10.6	10.0	106	61-131	5	30
Trichloroethene (TCE)	0.21 J	11.7	10.0	115	10.6	10.0	104	53-139	9	30
Vinyl Chloride	ND U	9.95	10.0	100	9.47	10.0	95	49-136	5	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

ALS Group USA, Corp.
dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2011774
Project:	Univar SW	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2020225-07	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	12/16/20 12:55	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	12/16/20 12:55	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	12/16/20 12:55	
Vinyl Chloride	ND	U	0.50	0.075	1	12/16/20 12:55	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	87	68 - 117	12/16/20 12:55	
Dibromofluoromethane	98	73 - 122	12/16/20 12:55	
Toluene-d8	98	65 - 144	12/16/20 12:55	

ALS Group USA, Corp.
dba ALS Environmental

QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2011774
Project:	Univar SW	**Date Analyzed:**	12/16/20
Sample Matrix:	Storm Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	707289

	Lab Control Sample KQ2020225-05			Duplicate Lab Control Sample KQ2020225-06					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloroform	10.4	10.0	104	10.3	10.0	103	70-129	1	30
Tetrachloroethene (PCE)	9.81	10.0	98	9.84	10.0	98	62-126	<1	30
Trichloroethene (TCE)	9.77	10.0	98	9.73	10.0	97	67-128	<1	30
Vinyl Chloride	8.54	10.0	85	8.28	10.0	83	55-123	3	30

February 28, 2021 Service Request No:K2101542

Dylan Stankus
ERM-West, Incorporated
1001 SW 5th Ave. #1010
Portland, OR 97204

Laboratory Results for: Univar Yeon SW

Dear Dylan,

Enclosed are the results of the sample(s) submitted to our laboratory February 19, 2021
For your reference, these analyses have been assigned our service request number **K2101542.**

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3350. You may also contact me via email at Kelley.Lovejoy@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Kelley Lovejoy

Kelley Lovejoy
Project Manager

ADDRESS 1317 S. 13th Avenue, Kelso, WA 98626
PHONE +1 360 577 7222 | FAX +1 360 636 1068
ALS Group USA, Corp.
dba ALS Environmental

Narrative Documents

ALS Environmental—Kelso Laboratory
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1317 South 13th Ave, Kelso, WA 98626 | 1-360-577-7222 | www.alsglobal.com

Client: ERM West, Inc
Project: Univar Yeon SW
Sample Matrix: Storm Water

Service Request: K2101542
Date Received: 02/19/2021

CASE NARRATIVE

All analyses were performed consistent with the quality assurance program of ALS Environmental. This report contains analytical results for samples for the Tier II level requested by the client.

Sample Receipt:

Five storm water samples were received for analysis at ALS Environmental on 02/19/2021. Any discrepancies upon initial sample inspection are annotated on the sample receipt and preservation form included within this report. The samples were stored at minimum in accordance with the analytical method requirements.

Volatiles by GC/MS:

No significant anomalies were noted with this analysis.

Approved by Kelley Lovejoy Date 02/28/2021

SAMPLE DETECTION SUMMARY

CLIENT ID: TB-SW-20210218			Lab ID: K2101542-001			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Chloroform	0.14	J	0.072	0.50	ug/L	8260C
Tetrachloroethene (PCE)	0.19	J	0.099	0.50	ug/L	8260C
Trichloroethene (TCE)	0.13	J	0.10	0.50	ug/L	8260C
Vinyl Chloride	0.090	J	0.075	0.50	ug/L	8260C

CLIENT ID: STM-1-SW-20210218			Lab ID: K2101542-002			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Chloroform	0.25	J	0.072	0.50	ug/L	8260C
Tetrachloroethene (PCE)	7.5		0.099	0.50	ug/L	8260C
Trichloroethene (TCE)	7.9		0.10	0.50	ug/L	8260C

CLIENT ID: STM-1A-SW-20210218			Lab ID: K2101542-003			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Chloroform	0.27	J	0.072	0.50	ug/L	8260C
Tetrachloroethene (PCE)	10		0.099	0.50	ug/L	8260C
Trichloroethene (TCE)	10		0.10	0.50	ug/L	8260C

CLIENT ID: CB-1C-SW-20210218			Lab ID: K2101542-004			
Analyte	**Results**	**Flag**	**MDL**	**MRL**	**Units**	**Method**
Tetrachloroethene (PCE)	0.13	J	0.099	0.50	ug/L	8260C

Sample Receipt Information

ALS Environmental—Kelso Laboratory
1317 South 13th Avenue, Kelso, WA 98626
Phone (360) 577-7222 Fax (360) 425-9096
www.alsglobal.com

Client: ERM West, Inc **Service Request:**K2101542
Project: Univar Yeon SW

SAMPLE CROSS-REFERENCE

SAMPLE #	CLIENT SAMPLE ID	DATE	TIME
K2101542-001	TB-SW-20210218	2/18/2021	
K2101542-002	STM-1-SW-20210218	2/18/2021	1415
K2101542-003	STM-1A-SW-20210218	2/18/2021	1422
K2101542-004	CB-1C-SW-20210218	2/18/2021	1340
K2101542-005	CB-1A-SW-20210218	2/18/2021	1405

ALS Environmental

CHAIN OF CUSTODY
114738

003

SR# K2101542
COC Set 1 of 1
COC#

1317 South 13th Ave, Kelso, WA 98626 Phone (360) 577-7222 / 800-695-7222 / FAX (360) 636-1068
www.alsglobal.com

Project Name: Univar Yeon SW
Project Number:
Project Manager: Dylan S.
Company: ERM
Address:
Phone #: 503-488-4282
email:
Sampler Signature: [signature]
Sampler Printed Name: Scott Terran

CLIENT SAMPLE ID	LABID	SAMPLING Date Time	Matrix	NUMBER OF CONTAINERS	8260C / VOC FP 14D	1 TCE, PCE, VC	2 Chloroform	3	4	5	Remarks
1. TB-SW-20210218		2/18/20	SW	2	X						
~~2. CB-5A-SW-20210218~~		~~1330~~		~~3~~	~~X~~						ST
3. STM-1-SW-20210218		1415		3	X						
4. STM-1A-SW-20210218		1422		3	X						
5. CB-1C-SW-20210218		1340		3	X						
6. CB-1A-SW-20210218		1405		3	X						
7.											
8.											
9.											
10.											

Report Requirements

___ I. Routine Report: Method Blank, Surrogate, as required
___ II. Report Dup., MS, MSD as required
___ III. CLP Like Summary (no raw data)
___ IV. Data Validation Report
___ V. EDD

Invoice Information

P.O.#
Bill To:

Turnaround Requirements

___ 24 hr. ___ 48 hr.
___ 5 Day
___ Standard

Requested Report Date

Circle which metals are to be analyzed

Total Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Dissolved Metals: Al As Sb Ba Be B Ca Cd Co Cr Cu Fe Pb Mg Mn Mo Ni K Ag Na Se Sr Tl Sn V Zn Hg

Special Instructions/Comments:

*Indicate State Hydrocarbon Procedure: AK CA WI Northwest Other____(Circle One)

Relinquished By:	Received By:	Relinquished By:	Received By:	Relinquished By:	Received By:
Signature [signature]	Signature [signature]	Signature	Signature	Signature	Signature
Printed Name Scott Terran	Printed Name [illegible]	Printed Name	Printed Name	Printed Name	Printed Name
Firm ERM	Firm 2/19/21 0940	Firm	Firm	Firm	Firm
Date/Time 2/18/21	Date/Time	Date/Time	Date/Time	Date/Time	Date/Time

PM KL

Cooler Receipt and Preservation Form

Client EPM Service Request K21 01542

Received: 2/19/21 Opened: 2/19/21 By: BR Unloaded: 2/19/21 By: BR

1. Samples were received via? *USPS* *Fed Ex* *UPS* *DHL* *PDX* *Courier* *Hand Delivered*
2. Samples were received in: (circle) *Cooler* *Box* *Envelope* *Other* _____ *NA*
3. Were custody seals on coolers? NA Y N If yes, how many and where? _____
   If present, were custody seals intact? Y N If present, were they signed and dated? Y N
4. Was a Temperature Blank present in cooler? NA Y N If yes, notate the temperature in the appropriate column below:
   If no, take the temperature of a representative sample bottle contained within the cooler; notate in the column "Sample Temp":
5. Were samples received within the method specified temperature ranges? NA Y N
   If no, were they received on ice and same day as collected? If not, notate the cooler # below and notify the PM. NA Y N

If applicable, tissue samples were received: *Frozen* *Partially Thawed* *Thawed*

Temp Blank	Sample Temp	IR Gun	Cooler #/COC ID / NA	Out of temp indicate with "X"	PM Notified If out of temp	Tracking Number NA	Filed
NA	2.0	IR01				9340249359600	

6. Packing material: *Inserts* *Baggies* *Bubble Wrap* *Gel Packs* *Wet Ice* *Dry Ice* *Sleeves* _____
7. Were custody papers properly filled out (ink, signed, etc.)? NA Y N
8. Were samples received in good condition (unbroken) NA Y N
9. Were all sample labels complete (ie, analysis, preservation, etc.)? NA Y N
10. Did all sample labels and tags agree with custody papers? NA Y N
11. Were appropriate bottles/containers and volumes received for the tests indicated? NA Y N
12. Were the pH-preserved bottles (*see SMO GEN SOP*) received at the appropriate pH? *Indicate in the table below* NA Y N
13. Were VOA vials received without headspace? *Indicate in the table below.* NA Y N
14. Was C12/Res negative? NA Y N

Sample ID on Bottle	Sample ID on COC	Identified by:

Sample ID	Bottle Count Bottle Type	Head-space	Broke	pH	Reagent	Volume added	Reagent Lot Number	Initials	Time

Notes, Discrepancies, Resolutions: _____

Miscellaneous Forms

ALS Environmental—Kelso Laboratory
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Phone (360) 577-7222 Fax (360) 425-9096
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Inorganic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
E	The result is an estimate amount because the value exceeded the instrument calibration range.
J	The result is an estimated value.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.
H	The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

Metals Data Qualifiers

#	The control limit criteria is not applicable. See case narrative.
J	The result is an estimated value.
E	The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
M	The duplicate injection precision was not met.
N	The Matrix Spike sample recovery is not within control limits. See case narrative.
S	The reported value was determined by the Method of Standard Additions (MSA).
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
W	The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
i	The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
X	See case narrative.
+	The correlation coefficient for the MSA is less than 0.995.
Q	See case narrative. One or more quality control criteria was outside the limits.

Organic Data Qualifiers

*	The result is an outlier. See case narrative.
#	The control limit criteria is not applicable. See case narrative.
A	A tentatively identified compound, a suspected aldol-condensation product.
B	The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
C	The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
D	The reported result is from a dilution.
E	The result is an estimated value.
J	The result is an estimated value.
N	The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
P	The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
U	The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. *DOD-QSM 4.2 definition* : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
i	The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
X	See case narrative.
Q	See case narrative. One or more quality control criteria was outside the limits.

Additional Petroleum Hydrocarbon Specific Qualifiers

F	The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
L	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
H	The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
O	The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
Y	The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
Z	The chromatographic fingerprint does not resemble a petroleum product.

ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso
State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEH	http://dec.alaska.gov/eh/lab/cs/csapproval.htm	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L16-58-R4
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	http://health.hawaii.gov/	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/page/la-lab-accreditation	03016
Maine DHS	http://www.maine.gov/dhhs/	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/enforcement/oqa.html	WA005
New York - DOH	https://www.wadsworth.org/regulatory/elap	12060
North Carolina DEQ	https://deq.nc.gov/about/divisions/water-resources/water-resources-data/water-sciences-home-page/laboratory-certification-branch/non-field-lab-certification	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaboratoryAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/EnvironmentalLabCertification/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	https://www.epa.gov/region8-waterops/epa-region-8-certified-drinking-water-	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.
Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH	Total Petroleum Hydrocarbons
tr	Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

Client: ERM West, Inc
Project: Univar Yeon SW/
Service Request: K2101542

Sample Name: TB-SW-20210218
Lab Code: K2101542-001
Sample Matrix: Storm Water
Date Collected: 02/18/21
Date Received: 02/19/21

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MKANALY

Sample Name: STM-1-SW-20210218
Lab Code: K2101542-002
Sample Matrix: Storm Water
Date Collected: 02/18/21
Date Received: 02/19/21

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MKANALY

Sample Name: STM-1A-SW-20210218
Lab Code: K2101542-003
Sample Matrix: Storm Water
Date Collected: 02/18/21
Date Received: 02/19/21

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MKANALY

Sample Name: CB-1C-SW-20210218
Lab Code: K2101542-004
Sample Matrix: Storm Water
Date Collected: 02/18/21
Date Received: 02/19/21

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MKANALY

Sample Name: CB-1A-SW-20210218
Lab Code: K2101542-005
Sample Matrix: Storm Water
Date Collected: 02/18/21
Date Received: 02/19/21

Analysis Method	Extracted/Digested By	Analyzed By
8260C		MKANALY

Sample Results

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Volatile Organic Compounds by GC/MS

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dba ALS Environmental

Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2101542
Project:	Univar Yeon SW	**Date Collected:**	02/18/21
Sample Matrix:	Storm Water	**Date Received:**	02/19/21 09:40
Sample Name:	TB-SW-20210218	**Units:**	ug/L
Lab Code:	K2101542-001	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	**0.14**	**J**	0.50	0.072	1	02/23/21 17:31	
Tetrachloroethene (PCE)	**0.19**	**J**	0.50	0.099	1	02/23/21 17:31	
Trichloroethene (TCE)	**0.13**	**J**	0.50	0.10	1	02/23/21 17:31	
Vinyl Chloride	**0.090**	**J**	0.50	0.075	1	02/23/21 17:31	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	86	68 - 117	02/23/21 17:31	
Dibromofluoromethane	94	73 - 122	02/23/21 17:31	
Toluene-d8	99	65 - 144	02/23/21 17:31	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2101542
Project:	Univar Yeon SW	**Date Collected:**	02/18/21 14:15
Sample Matrix:	Storm Water	**Date Received:**	02/19/21 09:40
Sample Name:	STM-1-SW-20210218	**Units:**	ug/L
Lab Code:	K2101542-002	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	**0.25**	**J**	0.50	0.072	1	02/23/21 17:57	
Tetrachloroethene (PCE)	**7.5**		0.50	0.099	1	02/23/21 17:57	
Trichloroethene (TCE)	**7.9**		0.50	0.10	1	02/23/21 17:57	
Vinyl Chloride	ND	U	0.50	0.075	1	02/23/21 17:57	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	86	68 - 117	02/23/21 17:57	
Dibromofluoromethane	100	73 - 122	02/23/21 17:57	
Toluene-d8	103	65 - 144	02/23/21 17:57	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2101542
Project:	Univar Yeon SW	**Date Collected:**	02/18/21 14:22
Sample Matrix:	Storm Water	**Date Received:**	02/19/21 09:40
Sample Name:	STM-1A-SW-20210218	**Units:**	ug/L
Lab Code:	K2101542-003	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	**0.27**	**J**	0.50	0.072	1	02/23/21 18:24	
Tetrachloroethene (PCE)	**10**		0.50	0.099	1	02/23/21 18:24	
Trichloroethene (TCE)	**10**		0.50	0.10	1	02/23/21 18:24	
Vinyl Chloride	ND	U	0.50	0.075	1	02/23/21 18:24	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	85	68 - 117	02/23/21 18:24	
Dibromofluoromethane	95	73 - 122	02/23/21 18:24	
Toluene-d8	97	65 - 144	02/23/21 18:24	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2101542
Project:	Univar Yeon SW	**Date Collected:**	02/18/21 13:40
Sample Matrix:	Storm Water	**Date Received:**	02/19/21 09:40
Sample Name:	CB-1C-SW-20210218	**Units:**	ug/L
Lab Code:	K2101542-004	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	02/23/21 18:50	
Tetrachloroethene (PCE)	**0.13**	**J**	0.50	0.099	1	02/23/21 18:50	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	02/23/21 18:50	
Vinyl Chloride	ND	U	0.50	0.075	1	02/23/21 18:50	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	85	68 - 117	02/23/21 18:50	
Dibromofluoromethane	98	73 - 122	02/23/21 18:50	
Toluene-d8	99	65 - 144	02/23/21 18:50	

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2101542
Project:	Univar Yeon SW	**Date Collected:**	02/18/21 14:05
Sample Matrix:	Storm Water	**Date Received:**	02/19/21 09:40
Sample Name:	CB-1A-SW-20210218	**Units:**	ug/L
Lab Code:	K2101542-005	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result	MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND U	0.50	0.072	1	02/23/21 19:16	
Tetrachloroethene (PCE)	ND U	0.50	0.099	1	02/23/21 19:16	
Trichloroethene (TCE)	ND U	0.50	0.10	1	02/23/21 19:16	
Vinyl Chloride	ND U	0.50	0.075	1	02/23/21 19:16	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	88	68 - 117	02/23/21 19:16	
Dibromofluoromethane	93	73 - 122	02/23/21 19:16	
Toluene-d8	99	65 - 144	02/23/21 19:16	

QC Summary Forms

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Volatile Organic Compounds by GC/MS

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Client: ERM West, Inc **Service Request:** K2101542
Project: Univar Yeon SW
Sample Matrix: Storm Water

SURROGATE RECOVERY SUMMARY
Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Extraction Method: None

Sample Name	Lab Code	4-Bromofluorobenzene 68-117	Dibromofluoromethane 73-122	Toluene-d8 65-144
TB-SW-20210218	K2101542-001	86	94	99
STM-1-SW-20210218	K2101542-002	86	100	103
STM-1A-SW-20210218	K2101542-003	85	95	97
CB-1C-SW-20210218	K2101542-004	85	98	99
CB-1A-SW-20210218	K2101542-005	88	93	99
Method Blank	KQ2102729-05	81	90	98
Lab Control Sample	KQ2102729-03	89	98	105
Duplicate Lab Control Sample	KQ2102729-04	94	100	101
STM-1-SW-20210218	KQ2102729-06	92	96	101
STM-1-SW-20210218	KQ2102729-07	92	100	99

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2101542
Project:	Univar Yeon SW	**Date Collected:**	02/18/21
Sample Matrix:	Storm Water	**Date Received:**	02/19/21
		Date Analyzed:	02/23/21
		Date Extracted:	NA

Duplicate Matrix Spike Summary
Volatile Organic Compounds by GC/MS

Sample Name:	STM-1-SW-20210218	**Units:**	ug/L
Lab Code:	K2101542-002	**Basis:**	NA
Analysis Method:	8260C		
Prep Method:	None		

		Matrix Spike KQ2102729-06			**Duplicate Matrix Spike** KQ2102729-07					
Analyte Name	**Sample Result**	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloroform	0.25 J	8.28	10.0	80	9.35	10.0	91	64-133	12	30
Tetrachloroethene (PCE)	7.5	14.4	10.0	69	16.6	10.0	92	61-131	14	30
Trichloroethene (TCE)	7.9	14.7	10.0	68	17.4	10.0	95	53-139	17	30
Vinyl Chloride	ND U	9.06	10.0	91	11.0	10.0	110	49-136	19	30

Results flagged with an asterisk (*) indicate values outside control criteria.

Results flagged with a pound (#) indicate the control criteria is not applicable.

Percent recoveries and relative percent differences (RPD) are determined by the software using values in the calculation which have not been rounded.

Matrix Spike and Matrix Spike Duplicate Data is presented for information purposes only. The matrix may or may not be relevant to samples reported in this report. The laboratory evaluates system performance based on the LCS and LCSD control limits.

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Analytical Report

Client:	ERM West, Inc	**Service Request:**	K2101542
Project:	Univar Yeon SW	**Date Collected:**	NA
Sample Matrix:	Storm Water	**Date Received:**	NA
Sample Name:	Method Blank	**Units:**	ug/L
Lab Code:	KQ2102729-05	**Basis:**	NA

Volatile Organic Compounds by GC/MS

Analysis Method: 8260C
Prep Method: None

Analyte Name	Result		MRL	MDL	Dil.	Date Analyzed	Q
Chloroform	ND	U	0.50	0.072	1	02/23/21 20:36	
Tetrachloroethene (PCE)	ND	U	0.50	0.099	1	02/23/21 20:36	
Trichloroethene (TCE)	ND	U	0.50	0.10	1	02/23/21 20:36	
Vinyl Chloride	ND	U	0.50	0.075	1	02/23/21 20:36	

Surrogate Name	% Rec	Control Limits	Date Analyzed	Q
4-Bromofluorobenzene	81	68 - 117	02/23/21 20:36	
Dibromofluoromethane	90	73 - 122	02/23/21 20:36	
Toluene-d8	98	65 - 144	02/23/21 20:36	

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QA/QC Report

Client:	ERM West, Inc	**Service Request:**	K2101542
Project:	Univar Yeon SW	**Date Analyzed:**	02/23/21
Sample Matrix:	Storm Water	**Date Extracted:**	NA

Duplicate Lab Control Sample Summary
Volatile Organic Compounds by GC/MS

Analysis Method:	8260C	**Units:**	ug/L
Prep Method:	None	**Basis:**	NA
		Analysis Lot:	713912

	Lab Control Sample KQ2102729-03			Duplicate Lab Control Sample KQ2102729-04					
Analyte Name	**Result**	**Spike Amount**	**% Rec**	**Result**	**Spike Amount**	**% Rec**	**% Rec Limits**	**RPD**	**RPD Limit**
Chloroform	9.01	10.0	90	9.60	10.0	96	70-129	6	30
Tetrachloroethene (PCE)	7.35	10.0	74	7.88	10.0	79	62-126	7	30
Trichloroethene (TCE)	8.40	10.0	84	8.51	10.0	85	67-128	1	30
Vinyl Chloride	9.36	10.0	94	9.90	10.0	99	55-123	6	30

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Memo

To	Dylan Stankus
From	Rachel James
Date	01 May 2019
Reference	0487089
Subject	Revised Data Review of Univar Yeon Wipe and Soil Samples Collected January 31, 2019: ALS Environmental Data Package K1900914.

The data quality was assessed and any necessary qualifiers were applied following the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review*, January 2017 and *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review*, January 2017.

REVISION

This memorandum was revised to remove the incorrectly applied J+ qualifier from the Aroclor 1260 result for sample DB4. The result was non-detected and was unaffected by the high MS/MSD recoveries.

CHAIN-OF-CUSTODY DISCREPANCIES

The laboratory received sample DB-4, but it was not listed on the chain of custody. The laboratory logged the sample in with the analyses indicated on the container label.

HOLDING TIME AND PRESERVATION EVALUATION

The samples were prepared and analyzed within the method-prescribed time period from the date of collection. The sample shipment was received at the laboratory above the method-prescribed temperature preservation requirements of less than 6°C at 14.6°C. The laboratory sample receipt form does not indicate that the samples were stored on ice. All results for methods 8270D and 8082A were qualified as estimates (J/UJ) due to the lack of thermal preservation. The exceeded preservation requirement is summarized in Table 1.

BLANK EVALUATION

The method blank sample results were nondetected for each of the target analytes with several exceptions. Results within ten times the blank concentration and greater than the reporting limit, as adjusted for dilution, were qualified as estimated with a high bias (J+). Results greater than ten times the blank concentration, as adjusted for dilution, were not qualified. The blank detections and associated data are presented in Table 2.

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BLANK SPIKE EVALUATION

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recoveries and RPDs were within the laboratory's limits of acceptance. The LCS recoveries and RPDs indicate acceptable laboratory accuracy and precision.

MATRIX SPIKE EVALUATION

The matrix spike (MS)/matrix spike duplicate (MSD) recoveries and RPDs were within laboratory limits of acceptance with several exceptions. bis(2-Ethylhexyl)phthalate, Aroclor 1260, lead, and zinc were recovered outside laboratory control limits in spiked sample DB4. The bis(2-ethylhexyl)phthalate and zinc parent sample results were not qualified as they were greater than four times the spike concentration and the Aroclor 1260 result was not qualified as it was non-detected and associated with high recoveries. The lead parent sample result was qualified as an estimate with a high bias (J+) due to the high MS/MSD recoveries. The outliers and associated qualifications can be found in Table 3.

SURROGATE SPIKE EVALUATION

The surrogate recoveries were within acceptable limits with two exceptions. PCB surrogate decachlorobiphenyl was recovered outside laboratory limits in two samples. Results were not qualified in sample DB1-5 as the dilution factor was greater than ten. The non-detected results in sample DB3-3B were qualified as estimates (UJ) due to the low surrogate recovery. Surrogate spikes outside control limits and associated data are provided in Table 4.

LABORATORY DUPLICATE EVALUATION

The laboratory prepared sample DB4 as a laboratory duplicate for metals analysis. The RPDs between the primary sample and the duplicate were within laboratory control limits, with the exceptions noted on Table 5. The primary results for cadmium and lead were qualified as estimates (J). The detections in the primary and duplicate sample were greater than five times the detection limit and the RPD was above the laboratory control limit.

FIELD DUPLICATE EVALUATION

No field duplicates were submitted.

OVERALL ASSESSMENT

None of the data required rejection. All of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically defensible documents.

Table 1
Samples with Exceeded Preservation Requirements
January 2019 Wipe Samples
Univar USA, Inc.
Portland, Oregon

Lab Package	Sample ID	Method	Preservation Condition	Limits	ERM Qualifier
K1900914	All	8270D 8082A	Cooler temp = 14.6°C	0 - 6°C	J/UJ

Lab package reviewed: K1900914

Notes:
°C = Degrees Celsius
J/UJ = Detected results are estimated; nondetected results are estimated at the report limit

Table 2
Blank and Associated Suspect Sample Detections
January 2019 Wipe Samples
Univar USA, Inc.
Portland, Oregon

Lab Package	Blank ID	Associated Sample	Detected Compound	Reported Concentration	Report Limit	Units	ERM Qualifier
K1900914	MB KQ1901460-03	--	Lead	0.016	0.050	mg/kg	--
		--	Zinc	0.58	0.50	mg/kg	--
	MB KQ1901505-01	See below	Lead	0.010	0.050	µg/sample	--
		--	Zinc	0.24	0.50	µg/sample	--
	--	DB1-3	Lead	0.384	0.050	µg/sample	J+

Lab package reviewed: K1900914

Notes:
MB = Method blank
mg/kg = Milligrams per kilogram
J+ = Detected results are estimated with a high bias
µg = Micrograms

Table 3
Spike Recoveries Outside of Acceptable Limits
January 2019 Wipe Samples
Univar USA, Inc.
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Compound	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
MS/MSD										
K1900914	DB4 MS/MSD	DB4	Bis(2-ethylhexyl) Phthalate	-35/-22	23-123	6	40	4X	--	--
			Aroclor 1260	156/166	70-130	1	40	ND	µg/kg	--
			Lead	139	75-125	--	--	59.1	mg/kg	J+
			Zinc	147	75-125	--	--	4X	--	--

Lab package reviewed: K1900914

Notes:

4X = The unspiked sample result was greater than four times the spike concentration

J+ = Detected results are estimated with a high bias

mg/kg = Milligrams per kilogram

MS/MSD - Matrix spike/matrix spike duplicate

ND = Not detected

RPD = Relative percent difference

µg/kg = Micrograms per kilogram

Table 4
Surrogate Recovery Results out of Acceptable Limits
January 2019 Wipe Samples
Univar USA, Inc.
Portland, Oregon

Lab Package	Sample ID	Method	Surrogate	Recovery (%)	Limit (%)	Affected Compound	Dilution Factor	ERM Qualifier
K1900914	DB3-3B	8082A	Decachlorobiphenyl	47	70-130	All	1	UJ
	DB1-5	8082A	Decachlorobiphenyl	83120	70-130	--	2000	--

Lab package reviewed: K1900914

Notes:

UJ = Nondetected, estimated report limit

Table 5
Lab Duplicate Results and Calculated Relative Percent Differences
January 2019 Wipe Samples
Univar USA, Inc.
Portland, Oregon

Lab Package	Sample ID	Compound	Concentration		Report Limit	Units	RPD	ERM Qualifier
			Sample	Duplicate				
K1900914	DB4	Cadmium	0.463	0.656	0.012	mg/kg	34	J
		Lead	59.1	89.2	0.031	mg/kg	41	J

Lab package reviewed: K1900914

Notes:
J = Estimated detected result
mg/kg = Milligrams per kilogram
RPD = Relative percent difference

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Memo

To	Dylan Stankus
From	Rachel James
Date	29 April 2019
Reference	0487089
Subject	Data Review of Univar Yeon Stormwater Samples Collected February 14, 2019: ALS Environmental Data Package K1901412.

The data quality was assessed and any necessary qualifiers were applied following the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review*, January 2017 and *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review*, January 2017.

CASE NARRATIVE COMMENTS

The laboratory case narrative describes that as of March 4, 2019, the laboratory's certification for Pesticides by Method 8081B has been suspended due to Performance Testing samples that failed with high recoveries. The lab analyzed these samples for Pesticides on February 21 and 22, which was prior to the certification suspension. All Pesticide sample results were non-detected with one exception. 4,4'-DDE was detected in sample CB5ASW20190214 below the MRL. The result was qualified because the results on both columns exceeded the column agreement criteria. All other quality control results associated with these samples were within acceptance criteria. No further action was taken.

HOLDING TIME AND PRESERVATION EVALUATION

The samples were prepared and analyzed within the method-prescribed time period from the date of collection. The sample shipments were received at the laboratory within the method-prescribed temperature preservation requirements of less than 6°C. No qualifications were necessary.

BLANK EVALUATION

The method blank sample results were nondetected for each of the target analytes with one exception. Di-n-butyl phthalate was detected at a concentration less than the reporting limit in a method blank sample. Associated results within five times the blank concentration and less than the reporting limit were qualified as non-detect (U) at the MRL. The blank detections and associated data are presented in Table 1.

The trip blank sample results were nondetected for each of the target analytes. The trip blank results indicate that no contaminants were introduced to the samples during shipment, handling, and storage.

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BLANK SPIKE EVALUATION

The laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) recoveries and RPDs were within the laboratory's limits of acceptance, with exceptions noted in Table 2. No data were qualified as the outliers could be verified by another in-control recovery.

MATRIX SPIKE EVALUATION

The matrix spike (MS)/matrix spike duplicate (MSD) recoveries and RPDs were within the laboratory's limits of acceptance, indicating acceptable laboratory accuracy and precision and minimal matrix interference.

SURROGATE SPIKE EVALUATION

The surrogate recoveries were within acceptable limits. No qualifications were required based on surrogate recoveries. The surrogate recoveries indicate minimal matrix interference in the samples.

COLUMN AGREEMENT

The laboratory noted that the agreement of results between the primary and confirmation columns for 4,4'-DDE exceeded 40 percent in sample DB5ASW20190214. The associated result was qualified as estimated (J). The result is presented in Table 3.

LABORATORY DUPLICATE EVALUATION

The laboratory prepared two project samples as laboratory duplicates for total suspended solids. The RPDs between the primary sample and the duplicate were within laboratory control limits, with the exception noted in Table 4. Data did not require qualification as the detections in the primary and duplicate sample were less than five times the reporting limit and the absolute difference between the primary and duplicate detections was less than the reporting limit.

FIELD DUPLICATE EVALUATION

No field duplicates were submitted.

OVERALL ASSESSMENT

None of the data required rejection. All of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically defensible documents.

Table 1
Blank and Associated Suspect Sample Detections
February 2019 Stormwater Samples
Univar USA, Inc.
Portland, Oregon

Lab Package	Blank ID	Associated Sample	Detected Compound	Reported Concentration	Report Limit	Units	ERM Qualifier
K1901412	MB KQ1902056-03	See below	Di-n-butyl Phthalate	0.023	0.19	µg/L	--
	--	CB6A_SW_20190214		0.061	0.19	µg/L	0.19 U

Lab package reviewed: K1901412

Notes:
MB = Method blank
U = Nondetected
µg/L = Micrograms per liter

Table 2
Spike Recoveries Outside of Acceptable Limits
February 2019 Stormwater Samples
Univar USA, Inc.
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Compound	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
LCS/LCSD										
K1901412	LCS KQ1902177-01 LCSD KQ1902177-02	--	Benzo(a)pyrene	74/82	75-131	10	30	--	--	--
		--	Pyrene	69/77	72-127	11	30	--	--	--
	LCS KWG1900811-1 LCSD KWG1900811-2	--	Aroclor 1260	132/122	70-130	8	30	--	--	--

Lab package reviewed: K1901412

Notes:
LCS/LCSD = Laboratory control sample/laboratory control sample duplicate
RPD = Relative percent difference

Table 3
Column Agreement
February 2019 Stormwater Samples
Univar USA, Inc.
Portland, Oregon

Lab Package	Sample ID	Method	Compound	Result	Units	ERM Qualifier
K1901412	CB5ASW20190214	8081B	4,4'-DDE	0.96	ng/L	J

Lab package reviewed: K1901412

Notes:
J = Estimated
ng/L = Nanograms per liter

Table 4
Lab Duplicate Results and Calculated Relative Percent Differences
February 2019 Stormwater Samples
Univar USA, Inc.
Portland, Oregon

Lab Package	Sample ID	Compound	Concentration		Report Limit	Units	RPD	ERM Qualifier
			Sample	Duplicate				
K1901412	STM-1_SW20190214 Lab Duplicate	Total Suspended Solids	9.0	7.5	5.0	mg/L	18	--

Lab package reviewed: K1901412

Notes:
mg/L = Milligrams per liter
RPD = Relative percent difference

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Memorandum

To	Dylan Stankus
From	Rachel James
Date	16 April 2020
Reference	0533016
Subject	Data Review of Univar NW Yeon Stormwater Samples Collected 13 March 2020: ALS Data Package K2002352.

The data quality was assessed and any necessary qualifiers were applied following the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review,* January 2017 and *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review*, January 2017.

CHAIN-OF-CUSTODY DISCREPANCIES

There was one issue between the chain-of-custody (COC) and the label on a sample container. The labels stated Dup_SW_20200313, but the COC stated STM_1_SW_20200313. The laboratory logged the sample in per the label ID. The laboratory identified the sample by matching the date and time on the COC. Data quality was not impacted.

HOLDING TIME AND PRESERVATION EVALUATION

The samples were prepared and analyzed within the method-prescribed time period from the date of collection. The sample shipments were received at the laboratory within the method-prescribed temperature preservation requirements of less than 6°C. The laboratory noted that all vials for the trip blank sample contained headspace. The non-detected results for the trip blank were rejected (R) due to the headspace and are displayed in Table 1.

BLANK EVALUATION

The method blank sample results were non-detected for each of the target analytes, with three exceptions. Benz(a)anthracene was detected in a method blank sample at a concentration less than the reporting limit. Associated sample results with benz(a)anthracene results within five times the blank concentration and less than the reporting limit were qualified as non-detect (U) at the reporting limit. Iron and manganese were detected in a method blank sample at concentrations less than and greater than the reporting limit, respectively. Associated sample results were greater than ten times the blank concentrations and qualifications were not necessary. The method blank detections and associated qualified data are presented in Table 2.

The trip blank sample results were non-detected for each of the target analytes. The trip blank sample results were rejected due to headspace. Therefore, the trip blank results cannot be used to evaluate whether or not contaminants were introduced to the samples during shipment, handling, and storage.

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INITIAL AND CONTINUING CALIBRATION VERIFICATION EVALUATION

The initial calibration verification (ICV) and continuing calibration verification (CCV) recoveries were within the laboratory's limits of acceptance, with limited exceptions. No qualifications were required based upon the high CCV recoveries if the associated project sample results were non-detected. The indeno(1,2,3-cd)pyrene results associated with the CCV analyzed on 3/19/20 were qualified as estimates with a high bias (J+) due to high CCV recovery. No qualifications were required based upon the out of control ICV recovery as the affected analyte was reported from a column with a passing recovery. The ICVs and CCV that did not meet control limits are presented in Table 3.

BLANK SPIKE EVALUATION

The laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) recoveries and relative percent differences (RPDs) were within the laboratory's limits of acceptance, with exceptions noted in Table 4. No data were qualified as the outlier could be verified by another in-control recovery.

MATRIX SPIKE EVALUATION

The laboratory prepared two project samples for matrix spike and matrix spike duplicate analysis. The recoveries and RPDs were within laboratory limits of acceptance with two exceptions. No data were qualified as the sample results were greater than four times the spike concentrations. The outliers can be found in Table 4.

SURROGATE SPIKE EVALUATION

The surrogate recoveries were within acceptable limits with two exceptions. PCB surrogate decachlorobiphenyl was recovered below laboratory limits in samples CB-5A_20200313 and CB-6A-SW_20200313. All PCB results in both samples were qualified as estimates (J-/UJ). The surrogate outliers are presented in Table 5.

COLUMN AGREEMENT

The laboratory noted that the agreement of results between the primary and confirmation columns exceeded 40 percent for heptachlor epoxide in sample STM-1-SW_20200313 and 4,4'-DDE in sample E-1-SW_20200313. The associated results were qualified as estimated (J). The results are presented in Table 6.

LABORATORY DUPLICATE EVALUATION

The laboratory prepared four project samples as laboratory duplicates. The RPDs for detected analytes were within the control limits. The acceptable RPDs indicate acceptable laboratory precision.

FIELD DUPLICATE EVALUATION

One sample collected and submitted had a duplicate sample taken in the field. ERM calculated the RPD between the parent and duplicate with detected results. National Functional Guidelines has not established control criteria for field duplicate samples; therefore, sample data are not qualified on the basis of field duplicate imprecision. A list of the field duplicate detections and the calculated RPDs is provided in Table 7.

OVERALL ASSESSMENT

The trip blank results were determined to be unusable due to headspace in the sample vial. With exception of the rejected results, all of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically-defensible documents.

Table 1
Samples with Exceeded Preservation Requirements
Stormwater Samples Collected at Univar NW Yeon Facility March 13, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Sample ID	Method	Preservation Condition	Limits	ERM Qualifier
K2002352	Trip Blank	8260C	Headspace in 2 of 2 vials	No headspace	R

Lab package reviewed: K2002352

Notes:
R = Result is rejected

Table 2
Blank and Associated Suspect Sample Detections
Stormwater Samples Collected at Univar NW Yeon Facility March 13, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Blank ID	Associated Sample	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
K2002352	MB KQ2003830-03	STM-1-SW_20200313	Benz(a)anthracene	0.0019	0.020	0.0031	0.020	µg/L	0.020 U
		E-1-SW_20200313				0.0026			0.020 U
		DUP-SW_20200313-STM1				0.0026			0.020 U
		CB-5A_20200313				0.0027			0.020 U
		CB-2E-SW_20200313				0.0026			0.020 U
		CB-4A_20200313				0.0018			0.020 U
		CB-6A-SW_20200313				0.0031			0.020 U
	MB KQ2003850-01	None for qualification	Iron	1.0	2.0	--	--	µg/L	--
		None for qualification	Manganese	0.22	0.20	--	--	µg/L	--

Lab package reviewed: K2002352

Notes:
MB = Method blank
U = Nondetected
µg/L = Micrograms per liter

Table 3
Calibration Verification Recoveries Outside of Acceptable Limits
Stormwater Samples Collected at Univar NW Yeon Facility March 13, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	CCV Sample ID	Analyte	CCV Recovery (%)	CCV Limits (%)	Associated Sample	Reported Concentration	Units	ERM Qualifier
K2002352	CCV MS29\0324F002.D	Di-n-octyl Phthalate	High	NR	None for qualification	--	--	--
	CCV on 3/19/2020	Dibenz(a,h)anthracene	High	NR	None for qualification	--	--	--
		Indeno(1,2,3-cd)pyrene	High	NR	STM-1-SW_20200313	0.0010	µg/L	J+
					E-1-SW_20200313	0.0015	µg/L	J+
					DUP-SW_20200313-STM1	0.00093	µg/L	J+
					CB-5A_20200313	0.0024	µg/L	J+
	ICV on 4/8/2020 (confirmation column)	4,4'-DDD	Out	NR	None for qualification	--	--	--

Lab package reviewed: K2002352

Notes:
CCV = Continuing calibration verification
High = Recovery above maximum acceptable limit
ICV = Initial calibration verification
J+ = Detected results are estimated with a high bias
NR = Not reported
µg/L = Micrograms per liter

Table 4
Spike Recoveries Outside of Acceptable Limits
Stormwater Samples Collected at Univar NW Yeon Facility March 13, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
LCS/LCSD										
K2002352	LCS KQ2003830-01/ LCSD KQ2003830-02	None for qualification	Dibenz(a,h)anthracene	128/138	59-135	8	30	--	--	--
MS/MSD										
K2002352	E-1-SW_20200313 MS/MSD	E-1-SW_20200313	Iron	168	75-125	--	--	4X	--	--
			Zinc	124	75-125	--	--	4X	--	--

Lab package reviewed: K2002352

Notes:
4X = The unspiked sample result was greater than four times the spike concentration
LCS/LCSD = Laboratory control sample/laboratory control sample duplicate
MS/MSD - Matrix spike/matrix spike duplicate
RPD = Relative percent difference

Table 5
Surrogate Recovery Results out of Acceptable Limits
Stormwater Samples Collected at Univar NW Yeon Facility March 13, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Sample ID	Method	Surrogate	Recovery (%)	Limit (%)	Affected Analyte	Dilution Factor	ERM Qualifier
K2002352	CB-5A_20200313	8082A	Decachlorobiphenyl	66	70-130	All	1	J-/UJ
	CB-6A-SW_20200313	8082A	Decachlorobiphenyl	64	70-130	All	1	UJ

Lab package reviewed: K2002352

Notes:
J-/UJ = Detected results are estimated with low bias; nondetected results are estimated at the report limit
UJ = Nondetected, estimated report limit

Table 6
Column Agreement
Stormwater Samples Collected at Univar NW Yeon Facility March 13, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Sample ID	Method	Analyte	Result	Units	ERM Qualifier
K2002352	STM-1-SW_20200313	8081B	Heptachlor Epoxide	0.97	ng/L	J
	E-1-SW_20200313	8081B	4,4'-DDE	0.58	ng/L	J

Lab package reviewed: K2002352

Notes:
J = Estimated
ng/L = Nanograms per liter

Table 7
Field Duplicate Results and Calculated Relative Percent Differences
Stormwater Samples Collected at Univar NW Yeon Facility March 13, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Primary/Duplicate Sample ID	Analyte	Concentration		Report Limit		Units	RPD
			Sample	Duplicate	Sample	Duplicate		
K2002352	STM-1-SW_20200313/ DUP-SW_20200313-STM1	Solids, Total Suspended	7.0	6.5	5.0	5.0	mg/L	7.4
		Arsenic	0.40	0.38	0.50	0.50	µg/L	5.1
		Cadmium	0.150	0.135	0.020	0.020	µg/L	11
		Copper	13.0	14.8	0.10	0.10	µg/L	13
		Iron	728	617	2.0	2.0	µg/L	17
		Lead	1.44	1.22	0.020	0.020	µg/L	17
		Manganese	56.2	50.9	0.20	0.20	µg/L	10
		Nickel	5.75	6.59	0.20	0.20	µg/L	14
		Zinc	156	160	2.0	2.0	µg/L	2.5
		Acenaphthene	ND	0.0013	0.020	0.020	µg/L	NC
		Benz(a)anthracene	0.0031	0.0026	0.020	0.020	µg/L	18
		Benzo(a)pyrene	0.0022	0.0012	0.020	0.020	µg/L	59
		Benzo(b)fluoranthene	0.0016	ND	0.020	0.020	µg/L	NC
		Chrysene	0.0016	0.0016	0.020	0.020	µg/L	0.0
		Fluoranthene	0.0055	0.0056	0.020	0.020	µg/L	1.8
		Fluorene	0.0023	0.0022	0.020	0.020	µg/L	4.4
		Indeno(1,2,3-cd)pyrene	0.0010	0.00093	0.020	0.020	µg/L	7.3
		Pyrene	0.0096	0.0092	0.020	0.020	µg/L	4.3
		Bis(2-ethylhexyl) Phthalate	0.76	0.44	1.0	0.98	µg/L	53
		Diethyl Phthalate	0.082	0.081	0.20	0.20	µg/L	1.2

Table 7
Field Duplicate Results and Calculated Relative Percent Differences
Stormwater Samples Collected at Univar NW Yeon Facility March 13, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Primary/Duplicate Sample ID	Analyte	Concentration		Report Limit		Units	RPD
			Sample	Duplicate	Sample	Duplicate		
K2002352	STM-1-SW_20200313/ DUP-SW_20200313-STM1	Dimethyl Phthalate	0.87	1.1	0.20	0.20	µg/L	23
		Di-n-butyl Phthalate	0.30	0.29	0.20	0.20	µg/L	3.4
		4,4'-DDD	ND	0.75	2.0	2.0	ng/L	NC
		Heptachlor Epoxide	0.97	1.2	1.0	1.0	ng/L	21
		Aroclor 1268	0.038	0.037	0.0050	0.0050	µg/L	2.7

Lab package reviewed: K2002352

Notes:
mg/L = Milligrams per liter
ND = Not detected
NC = Not calculated, one result not detected
ng/L = Nanograms per liter
RPD = Relative percent difference
µg/L = Micrograms per liter

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Memorandum

To	Dylan Stankus
From	Rachel James
Date	19 October 2020
Reference	0533016
Subject	Data Review of Univar NW Yeon Stormwater Samples Collected 23 September 2020: ALS Data Package K2008424.

The data quality was assessed and any necessary qualifiers were applied following the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review,* January 2017 and *USEPA National Functional Guidelines for Inorganic Superfund Methods Data Review*, January 2017.

CHAIN-OF-CUSTODY DISCREPANCIES

The laboratory noted that sample vials for the trip blank were received, but the sample was not listed on the chain of custody (COC). The laboratory logged the trip blank sample for volatile organic compounds (VOCs) by Method 8260C. Data quality was not impacted.

NON-PREFERRED (DUPLICATE) RESULTS

The laboratory reported two sets of chlordane results for all samples due to chlordane not being spiked in the laboratory control samples from the original batch. The reanalysis batch results were reported out of hold. The reanalysis results were all non-detected, which confirmed the original results. The original results are considered non-preferred since they are missing required quality control samples. These non-preferred results were not reviewed in this validation effort and are presented in Table 1.

HOLDING TIME AND PRESERVATION EVALUATION

The sample shipments were received at the laboratory within the method-prescribed temperature preservation requirements of less than 6°C. The samples were prepared and analyzed within the method-prescribed time period from the date of collection with the exception of pesticides analyte chlordane. The samples were extracted one day past the seven day holding time due to chlordane not being spiked in the laboratory control samples from the original batch. The out of hold results were non-detected and were qualified as estimates (UJ). The out of hold results are displayed in Table 2.

BLANK EVALUATION

The method blank sample results were non-detected for each of the target analytes, with three exceptions. Bis(2-ethylhexyl) phthalate, di-n-butyl phthalate, and hexachlorobenzene were detected in method blank samples at concentrations less than the reporting limit. Associated sample results with results for these analytes within five times the blank concentration and less

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than the reporting limit were qualified as non-detect (U) at the reporting limit. The method blank detections and associated qualified data are presented in Table 3.

The trip blank sample results were non-detected for each of the target analytes. The trip blank results indicate that no contaminants were introduced to the samples during shipment, handling, and storage.

BLANK SPIKE EVALUATION

The laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) recoveries and relative percent differences (RPDs) were within the laboratory's limits of acceptance, with exceptions noted in Table 4. No data were qualified as the outlier could be verified by another in-control recovery. Diethyl phthalate and dimethyl phthalate results in project samples associated with high recoveries in LCS/LCSD samples were qualified as estimates with a high bias (J+).

MATRIX SPIKE EVALUATION

The laboratory prepared one project sample for matrix spike and matrix spike duplicate analysis. The recoveries and RPDs were within laboratory limits of acceptance with one exception. No data were qualified as the sample result was greater than four times the spike concentration. The MS/MSD outlier can be found in Table 4.

SURROGATE SPIKE EVALUATION

The surrogate recoveries were within acceptable limits with two exceptions. Low level semivolatile organic compound (SVOC) surrogate p-terphenyl-d14 was recovered above laboratory limits in samples a method blank and an LCS sample. Data were not qualified for surrogates recovered out of acceptance criteria in method blank or LCS/LCSD samples. These samples were instead assessed based upon the recovery of target analytes. The surrogate outliers can be found in Table 5.

COLUMN AGREEMENT

The laboratory noted that the agreement of results between the primary and confirmation columns exceeded 40 percent for select pesticides in samples DUP_SW_20200923, CB_5A_SW_20200923, STM-1_SW_20200923, CB-2E_SW_20200923, and E-1_SW_20200923. The associated results were qualified as estimated (J), with the exception of the hexachlorobenzene result for sample CB_5A_SW_20200923, which was qualified (U) at the reporting limit due to blank contamination. The results are presented in Table 6.

SAMPLES WITH INACCURATE QUANTIFICATION

Several sample results were qualified by the laboratory for inaccurate quantification issues. Select polycyclic aromatic hydrocarbons (PAHs) results in samples DUP_SW_20200923, CB_5A_SW_20200923, CB-2E_SW_20200923, and E-1_SW-20200923 could not be accurately quantified due to the presence of non-target components. The matrix interference may have resulted in a slight high bias. These data were qualified as estimates with a high bias (J+) and are presented in Table 7.

LABORATORY DUPLICATE EVALUATION

The laboratory prepared one project sample as a laboratory duplicate. The RPDs for detected analytes were within the control limits. The acceptable RPDs indicate acceptable laboratory precision.

FIELD DUPLICATE EVALUATION

One sample collected and submitted had a duplicate sample taken in the field. ERM calculated the RPD between the parent and duplicate with detected results. National Functional Guidelines has not established control criteria for field duplicate samples; therefore, sample data are not qualified on the basis of field duplicate imprecision. A list of the field duplicate detections and the calculated RPDs is provided in Table 8.

OVERALL ASSESSMENT

None of the data required rejection. All of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically defensible documents.

Table 1
Samples with Non-Preferred Results
Stormwater Samples Collected at Univar NW Yeon Facility September 23, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Sample ID	Method	Analysis Date/Time	Reason	Analyte	Result	Units
K2008424	DUP_SW_20200923	8081B	10/2/2020 1:35	LCS/LCSD samples not spiked for chlordane	Chlordane	ND	µg/L
	CB_5A_SW_20200923		10/2/2020 2:04				
	STM-1_SW_20200923		10/2/2020 2:34				
	CB-2E_SW_20200923		10/2/2020 3:03				
	E-1_SW_20200923		10/2/2020 3:33				
	CB-4A_SW_20200923		10/2/2020 4:02				
	CB-6A_SW_20200923		10/2/2020 4:32				

Lab package reviewed: K2008424

Notes:
LCS/LCSD = Laboratory control sample/laboratory control sample duplicate
ND = Not detected
µg/L = Micrograms per liter

Table 2
Samples with Exceeded Holding Times
Stormwater Samples Collected at Univar NW Yeon Facility September 23, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Sample ID	Method	Extraction Holding Time	Time Exceeded	Analysis Holding Time	Time Exceeded	Affected Analyte	ERM Qualifier
K2008424	DUP_SW_20200923	8081B (Analyzed 10/5/2020)	7 days	1 day	40 days	--	Chlordane	UJ
	CB_5A_SW_20200923							
	STM-1_SW_20200923							
	CB-2E_SW_20200923							
	E-1_SW_20200923							
	CB-4A_SW_20200923							
	CB-6A_SW_20200923							

Lab package reviewed: K2008424

Notes:
UJ = Nondetected, estimated report limit

Table 3
Blank and Associated Suspect Sample Detections
Stormwater Samples Collected at Univar NW Yeon Facility September 23, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Blank ID	Associated Sample	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
K2008424	MB KQ2014398-03	DUP_SW_20200923	Bis(2-ethylhexyl) Phthalate	0.23	0.94	0.72	1.0	µg/L	1.0 U
		CB_5A_SW_20200923				0.69	1.0	µg/L	1.0 U
		STM-1_SW_20200923				0.87	0.94	µg/L	0.94 U
		E-1_SW_20200923				0.61	1.0	µg/L	1.0 U
		CB-4A_SW_20200923				0.34	1.0	µg/L	1.0 U
		CB-6A_SW_20200923				0.70	0.99	µg/L	0.99 U
		DUP_SW_20200923	Di-n-butyl Phthalate	0.049	0.19	0.13	0.20	µg/L	0.20 U
		CB_5A_SW_20200923				0.16	0.20	µg/L	0.20 U
		CB-2E_SW_20200923				0.092	0.20	µg/L	0.20 U
		CB-4A_SW_20200923				0.056	0.20	µg/L	0.20 U
		CB-6A_SW_20200923				0.066	0.20	µg/L	0.20 U
	MB KQ2014320-05	CB_5A_SW_20200923	Hexachlorobenzene	0.32	1.0	0.34	1.0	ng/L	1.0 U
		STM-1_SW_20200923				0.51	1.0	ng/L	1.0 U

Lab package reviewed: K2008424

Notes:
MB = Method blank
ng/L = Nanograms per liter
U = Nondetected
µg/L = Micrograms per liter

Table 4
Spike Recoveries Outside of Acceptable Limits
Stormwater Samples Collected at Univar NW Yeon Facility September 23, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
LCS/LCSD										
K2008424	LCS KQ2014398-01/ LCSD KQ2014398-02	None for qualification	Butyl Benzyl Phthalate	122/118	59-119	3	30	--	--	--
		DUP_SW_20200923	Diethyl Phthalate	117/116	58-114	2	30	0.062	µg/L	J+
		CB_5A_SW_20200923						0.084	µg/L	J+
		STM-1_SW_20200923						0.078	µg/L	J+
		CB-2E_SW_20200923						0.088	µg/L	J+
		E-1_SW_20200923						0.051	µg/L	J+
		CB-4A_SW_20200923						0.091	µg/L	J+
		CB-6A_SW_20200923						0.045	µg/L	J+
		DUP_SW_20200923	Dimethyl Phthalate	110/110	58-109	<1	30	0.16	µg/L	J+
		CB_5A_SW_20200923						0.17	µg/L	J+
		STM-1_SW_20200923						0.14	µg/L	J+
		CB-2E_SW_20200923						0.11	µg/L	J+
		E-1_SW_20200923						0.049	µg/L	J+
		CB-4A_SW_20200923						0.14	µg/L	J+
		CB-6A_SW_20200923						0.068	µg/L	J+
		None for qualification	Di-n-octyl Phthalate	137/131	50-125	4	30	--	--	--

Table 4
Spike Recoveries Outside of Acceptable Limits
Stormwater Samples Collected at Univar NW Yeon Facility September 23, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Spike Sample ID	Associated Sample	Analyte	Recovery (%)	Limit (%)	RPD	RPD Limit	Result	Units	ERM Qualifier
			MS							
K2008424	DUP_SW_20200923 MS/MSD	DUP_SW_20200923	Iron	162	75-125	--	--	4X	--	--

Lab package reviewed: K2008424

Notes:
4X = The unspiked sample result was greater than four times the spike concentration
J+ = Detected results are estimated with a high bias
LCS/LCSD = Laboratory control sample/laboratory control sample duplicate
MS - Matrix spike
RPD = Relative percent difference
µg/L = Micrograms per liter

Table 5
Surrogate Recovery Results out of Acceptable Limits
Stormwater Samples Collected at Univar NW Yeon Facility September 23, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Sample ID	Method	Surrogate	Recovery (%)	Limit (%)	Affected Analyte	Dilution Factor	ERM Qualifier
K2008424	MB KQ2014398-03	8270D	p-Terphenyl-d14	112	48-109	None for qualification	1	--
	LCS KQ2014398-01			110				

Lab package reviewed: K2008424

Notes:
LCS = Laboratory control sample
MB = Method blank

Table 6
Column Agreement
Stormwater Samples Collected at Univar NW Yeon Facility September 23, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Sample ID	Method	Analyte	Result	Units	ERM Qualifier
K2008424	DUP_SW_20200923	8081B	4,4'-DDD	0.82	ng/L	J
			4,4'-DDT	4.0	ng/L	J
	CB_5A_SW_20200923		4,4'-DDD	0.82	ng/L	J
			4,4'-DDE	1.2	ng/L	J
			Heptachlor Epoxide	0.42	ng/L	J
			Hexachlorobenzene	0.34	ng/L	1.0 U[1]
	STM-1_SW_20200923		Heptachlor Epoxide	0.58	ng/L	J
	CB-2E_SW_20200923		4,4'-DDD	0.66	ng/L	J
	E-1_SW_20200923		4,4'-DDD	2.2	ng/L	J

Lab package reviewed: K2008424

Notes:
1 = Result qualified as estimated at the reporting limit due to blank contamination
J = Estimated
ng/L = Nanograms per liter
U = Nondetected

Table 7
Samples with Inaccurate Quantification
Stormwater Samples Collected at Univar NW Yeon Facility September 23, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Sample ID	Method	Analyte	Result	Units	Comment	ERM Qualifier
K2008424	DUP_SW_20200923	8270D	Acenaphthene	0.0073	µg/L	The chromatogram indicated the presence of non-target components. The matrix interference may have resulted in a slight high bias.	J+
	CB_5A_SW_20200923		Acenaphthene	0.0067	µg/L		J+
			Anthracene	0.0063	µg/L		J+
			Benz(a)anthracene	0.0054	µg/L		J+
			Chrysene	0.0086	µg/L		J+
	CB-2E_SW_20200923		Fluorene	0.0061	µg/L		J+
	E-1_SW_20200923		Benz(a)anthracene	0.012	µg/L		J+

Lab package reviewed: K2008424

Notes:
J+ = Detected results are estimated with a high bias
µg/L = Micrograms per liter

Table 8
Field Duplicate Results and Calculated Relative Percent Differences
Stormwater Samples Collected at Univar NW Yeon Facility September 23, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Primary/Duplicate Sample ID	Analyte	Concentration		Report Limit		Units	RPD
			Sample	Duplicate	Sample	Duplicate		
K2008424	CB_5A_SW_20200923/ DUP_SW_20200923	Solids, Total Suspended	18.0	21.5	5.0	5.0	mg/L	18
		Arsenic	0.43	0.39	0.50	0.50	µg/L	9.8
		Cadmium	0.072	0.069	0.040	0.040	µg/L	4.3
		Copper	13.1	13.1	0.10	0.10	µg/L	0.0
		Iron	657	628	2.0	2.0	µg/L	4.5
		Lead	1.64	1.56	0.020	0.020	µg/L	5.0
		Manganese	25.3	24.8	0.20	0.20	µg/L	2.0
		Nickel	2.24	2.13	0.20	0.20	µg/L	5.0
		Zinc	136	132	2.0	2.0	µg/L	3.0
		Tetrachloroethene	ND	0.10	0.50	0.50	µg/L	NC
		Acenaphthene	0.0067	0.0073	0.023	0.023	µg/L	8.6
		Anthracene	0.0063	0.016	0.023	0.023	µg/L	87
		Benz(a)anthracene	0.0054	ND	0.023	0.023	µg/L	NC
		Benzo(a)pyrene	0.0087	0.0051	0.023	0.023	µg/L	52
		Benzo(b)fluoranthene	0.010	0.0056	0.023	0.023	µg/L	56
		Chrysene	0.0086	0.0061	0.023	0.023	µg/L	34
		Fluoranthene	0.030	0.020	0.023	0.023	µg/L	40
		Indeno(1,2,3-cd)pyrene	0.0065	0.0038	0.023	0.023	µg/L	52
		Pyrene	0.043	0.032	0.023	0.023	µg/L	29
		Bis(2-ethylhexyl) Phthalate	0.69	0.72	1.0	1.0	µg/L	4.3
		Diethyl Phthalate	0.084	0.062	0.20	0.20	µg/L	30
		Dimethyl Phthalate	0.17	0.16	0.20	0.20	µg/L	6.1

Table 8
Field Duplicate Results and Calculated Relative Percent Differences
Stormwater Samples Collected at Univar NW Yeon Facility September 23, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Primary/Duplicate Sample ID	Analyte	Concentration		Report Limit		Units	RPD
			Sample	Duplicate	Sample	Duplicate		
K2008424	CB_5A_SW_20200923/ DUP_SW_20200923	Di-n-butyl Phthalate	0.16	0.13	0.20	0.20	µg/L	21
		4,4'-DDD	0.82	0.82	2.0	2.0	ng/L	0.0
		4,4'-DDT	1.2	4.0	1.0	2.0	ng/L	108
		Dieldrin	0.90	ND	1.0	1.0	ng/L	NC
		Heptachlor Epoxide	0.42	ND	1.0	1.0	ng/L	NC
		Hexachlorobenzene	0.34	ND	1.0	1.0	ng/L	NC

Lab package reviewed: K2008424

Notes:
mg/L = Milligrams per liter
ND = Not detected
NC = Not calculated, one result not detected
ng/L = Nanograms per liter
RPD = Relative percent difference
µg/L = Micrograms per liter

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Memorandum

To	Dylan Stankus
From	Rachel James
Date	12 January 2021
Reference	0577667
Subject	Data Review of Univar NW Yeon Stormwater Samples Collected 11 December 2020: ALS Data Package K2011774.

The data quality was assessed and any necessary qualifiers were applied following the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review,* January 2017. Field duplicates were assessed following *Environmental Data Review Supplement for Region 1 Data Review Elements and Superfund Specific Guidance/Procedures*, June 2018.

HOLDING TIME AND PRESERVATION EVALUATION

The samples were prepared and analyzed within the method-prescribed time period from the date of collection. The sample shipments were received at the laboratory within the method-prescribed temperature preservation requirements of less than 6°C. No qualifications were necessary.

BLANK EVALUATION

The method blank sample results were non-detected for each of the target analytes. The method blank results indicate that no contaminants were introduced to the samples during processing or analysis in the laboratory.

Trichloroethene was detected at a concentration below the reporting limit in trip blank sample TB-20201211. Trichloroethene results within five times the blank concentration and less than the reporting limit were qualified as non-detect (U) at the reporting limit. Trichloroethene results within five times the blank concentration and greater than the reporting limit were qualified as estimated with a high bias (J+). The blank detections and associated data are presented in Table 1.

BLANK SPIKE EVALUATION

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recoveries and relative percent differences (RPDs) were within the laboratory's limits of acceptance. The LCS/LCSD recoveries and RPDs indicate acceptable laboratory accuracy and precision.

MATRIX SPIKE EVALUATION

The laboratory prepared one project sample for matrix spike (MS) and matrix spike duplicate (MSD) analysis. The recoveries and RPDs were within laboratory limits of acceptance, indicating acceptable laboratory accuracy and precision and minimal matrix interference.

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SURROGATE SPIKE EVALUATION

The surrogate recoveries were within acceptable limits. No qualifications were required based on surrogate recoveries. The surrogate recoveries indicate minimal matrix interference in the samples.

FIELD DUPLICATE EVALUATION

One sample was submitted in duplicate. ERM calculated the differences or RPDs between detected results in Table 2. An RPD control limit of 30 was used when both the sample and the field duplicate results were greater than or equal to five times the reporting limit. A control limit of ± two times the reporting limit was used when at least one of the results was less than five times the reporting limit. All analytes in the parent sample/field duplicate pair met the control limits.

OVERALL ASSESSMENT

None of the data required rejection. All of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically defensible documents.

Table 1
Blank and Associated Suspect Sample Detections
Stormwater Samples Collected at Univar NW Yeon Facility December 11, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Blank ID	Associated Sample	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
K2011774	TB-20201211	W4-20201211	Trichloroethene	0.21	0.50	0.52	0.50	µg/L	J+
		CB-1B-20201211				0.31	0.50	µg/L	0.50 U
		CB-1J-20201211				0.21	0.50	µg/L	0.50 U

Lab package reviewed: K2011774

Notes:
J+ = Detected results are estimated with a high bias
TB = Trip blank
U = Nondetected
µg/L = Micrograms per liter

Table 2
Field Duplicate Assessment
Stormwater Samples Collected at Univar NW Yeon Facility December 11, 2020
Univar USA, Inc.
Portland, Oregon

Lab Package	Primary/Duplicate Sample ID	Analyte	Concentration		Report Limit		Difference	Difference Limit	Units	RPD	RPD Limit	ERM Qualifier
			Sample	Duplicate	Sample	Duplicate						
K2011774	STM-1-20201211/ DUP-20201211	Tetrachloroethene	12	11	0.50	0.50	--	--	µg/L	8.7	30	--
		Trichloroethene	12	12	0.50	0.50	--	--	µg/L	0.0	30	--

Lab package reviewed: K2011774

Notes:
RPD = Relative percent difference
µg/L = Micrograms per liter

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Memorandum

To	Dylan Stankus
From	Rachel James
Date	2 March 2021
Reference	0577667
Subject	Data Review of Univar NW Yeon Stormwater Samples Collected in February 2021: ALS Environmental data package K2101542.

The data quality was assessed and any necessary qualifiers were applied following the *USEPA National Functional Guidelines for Organic Superfund Methods Data Review*, January 2017.

HOLDING TIME AND PRESERVATION EVALUATION

The samples were prepared and analyzed within the method-prescribed time period from the date of collection. The sample shipments were received at the laboratory within the method-prescribed temperature preservation requirements of less than 6°C. No qualifications were necessary.

BLANK EVALUATION

The method blank sample results were non-detected for each of the target analytes. No data were qualified on the basis of the blank evaluation. The blank results indicate that no contaminants were introduced to the samples during processing or analysis in the laboratory.

Several analytes were detected in the trip blank sample at concentrations below the reporting limit. Results within five times the blank concentration and less than the reporting limit were qualified as non-detect (U) at the reporting limit. The blank detections and associated data are presented in Table 1.

BLANK SPIKE EVALUATION

The laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) recoveries and relative percent differences (RPDs) were within the laboratory's limits of acceptance. The LCS/LCSD recoveries and RPDs indicate acceptable laboratory accuracy and precision.

MATRIX SPIKE EVALUATION

The laboratory prepared one project sample for matrix spike (MS) and matrix spike duplicate (MSD) analysis. The MS/MSD recoveries and RPDs were within the laboratory's limits of acceptance, indicating acceptable laboratory accuracy and precision and minimal matrix interference.

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SURROGATE SPIKE EVALUATION

The surrogate recoveries were within acceptable limits. No qualifications were required based on surrogate recoveries. The surrogate recoveries indicate minimal matrix interference in the samples.

FIELD DUPLICATE EVALUATION

No field duplicates were submitted.

OVERALL ASSESSMENT

None of the data required rejection. All of the data, including qualified data, can be used for decision-making purposes; however, the limitations indicated by the applied qualifiers should be considered when using the data. The quality of the data generated during this investigation is acceptable for the preparation of technically defensible documents.

Table 1
Blank and Associated Suspect Sample Detections
Stormwater Samples Collected at Univar NW Yeon Facility, February 2021
Univar USA, Inc.
Portland, Oregon

Lab Package	Blank ID	Detected Analyte	Reported Blank Concentration	Blank Report Limit	Associated Sample	Associated Sample Result	Associated Sample Report Limit	Units	ERM Qualifier
K2101542	TB-SW-20210218	Chloroform	0.14	0.50	STM-1-SW-20210218	0.25	0.50	µg/L	0.50 U
					STM-1A-SW-20210218	0.27	0.50	µg/L	0.50 U
		Tetrachloroethene	0.19	0.50	CB-1C-SW-20210218	0.13	0.50	µg/L	0.50 U
		Trichloroethene	0.13	0.50	None for qualification	--	--	µg/L	--
		Vinyl Chloride	0.090	0.50	None for qualification	--	--	µg/L	--

Lab package reviewed: K2101542

Notes:
TB = Trip blank
U = Nondetected
µg/L = Micrograms per liter

APPENDIX G METHOD DETECTION LIMITS AND SLV COMPARISON

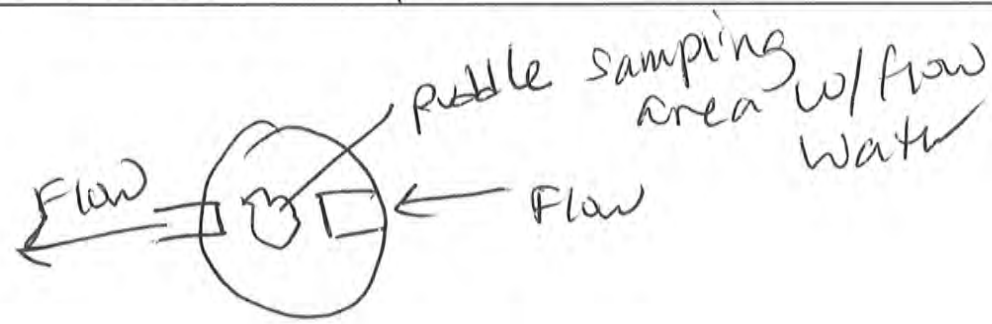
Appendix G Table #1
Stormwater Analytes
Univar Solutions
Portland, OR (NW Yeon)

Parameter Group	Constituent	CAS No.	Stormwater Source Control Plan		ALS	ALS
			Analytical Method	Screening Level	Method Reporting Limit	Method Detection Limit
				µg/L	µg/L	µg/L
Metals	Arsenic	7440-38-2	EPA 6020_LL	0.018	0.5	0.09
	Cadmium	7440-43-9	EPA 6020_LL	0.094	0.02	0.008
	Copper	7440-50-8	EPA 6020_LL	2.74	0.1	0.05
	Lead	7439-92-1	EPA 6020_LL	0.54	0.02	0.006
	Manganese	7439-96-5	EPA 6020_LL	100	0.2	0.006
	Nickel	7440-02-0	EPA 6020_LL	16	0.2	0.04
	Zinc	7440-66-6	EPA 6020_LL	36.5	2	0.5
PCBs Aroclors	Aroclor 1016	12674-11-2	EPA 8082A	0.96	0.005	0.0028
	Aroclor 1221	11104-28-2	EPA 8082A	0.034	0.01	0.0028
	Aroclor 1232	11141-16-5	EPA 8082A	0.034	0.005	0.0028
	Aroclor 1242	53469-21-9	EPA 8082A	0.034	0.005	0.0028
	Aroclor 1248	12672-29-6	EPA 8082A	0.034	0.005	0.0028
	Aroclor 1254	11097-69-1	EPA 8082A	0.033	0.005	0.0028
	Aroclor 1260	11096-82-5	EPA 8082A	0.034	0.005	0.0028
	Aroclor 1262	37324-23-5	EPA 8082A	--	0.005	0.0028
	Aroclor 1268	11100-14-4	EPA 8082A	--	0.005	0.0028
	Total PCBs	1336-36-3	EPA 8082A	0.0000064	0.005	N/A
Organochlorine Pesticides	4,4'-DDE	72-55-9	EPA 8081A_LL	0.000018	0.001	0.00046
	4,4-DDT	50-29-3	EPA 8081A_LL	0.000022	0.001	0.00075
	Dieldrin	60-57-1	EPA 8081A_LL	0.0000054	0.001	0.00044
	Heptachlor epoxide	1024-57-3	EPA 8081A_LL	0.0000079	0.001	0.00029
Volatile Organic Compounds	Chloroform	67-66-3	EPA 8260C_LL	0.17	0.5	0.072
	Tetrachloroethene (PCE)	127-18-4	EPA 8260C_LL	0.12	0.5	0.099
	Trichloroethene (TCE)	79-01-6	EPA 8260C_LL	0.17	0.5	0.1
	Vinyl Chloride	75-01-4	EPA 8260C_LL	0.02	0.5	0.075
Phthalate Esters	Bis(2-ethylhexyl)phthalate	117-81-7	EPA 8270D	0.2	1	0.13
	Butylbenzylphthalate	85-68-7	EPA 8270D	3.0	0.2	0.021
	Dibutyl phthalate	84-74-2	EPA 8270D	3.0	0.2	0.023
	Diethyl phthalate	84-66-2	EPA 8270D	3.0	0.2	0.015
	Dimethyl phthalate	131-11-3	EPA 8270D	3.0	0.2	0.015
	Di-n-octyl phthalate	117-84-0	EPA 8270D	3.0	0.2	0.033
Polycyclic Aromatic Hydrocarbons	Benzo(a)anthracene	56-55-3	EPA 8270D_SIM	0.0012	0.02	0.00097
	Benzo(a)pyrene	50-32-8	EPA 8270D_SIM	0.00012	0.02	0.0011
	Benzo(b)fluoranthene	205-99-2	EPA 8270D_SIM	0.0012	0.02	0.00083
	Chrysene	218-01-9	EPA 8270D_SIM	0.0013	0.02	0.00076
	Fluoranthene	206-44-0	EPA 8270D	0.2	0.02	0.00082
	Indeno(1,2,3-cd)pyrene	193-39-5	EPA 8270D_SIM	0.0012	0.02	0.00089
	Pyrene	129-00-0	EPA 8270D	0.2	0.02	0.001
General Chemistry	pH	--	EPA 9040	--	--	--
	Total Suspended Solids	--	EPA 2540D	--	5000	5000

Limits less than the Screening Level
Lowest of values if none under screening level
N/A - means not listed on Project Limit Sheets provided by labs

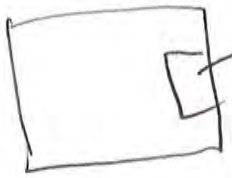
APPENDIX H FIELD NOTES

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name: Melody K / Scott T		Date: 2/14/18
Location ID	E1	
Visual Observations	☐ Odor ☐ Floating Materials ☐ Sheen	☐ Sheen ☑ Suspended Solids, describe: ☒ Other: Slightly cloudy turbid water
Potential Metal Sources	☒ Metal Storage ☒ Roof drains ☒ Other: Parking lot	☐ Exposed Soil ☐ Solids accumulation
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:
Storm Water observations	☐ No Flow ☒ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate: Slightly Raining, storm event.
Time (no flow)	10	Notes: event began @ 10Am
Time (discharge)	1015	Notes: discharge @ 1015Am
Time Sampled	1225	Notes: Sampled w/ peripump @ 1225P
BMP Evaluation	Are BMPs in place and are they maintained? no, manhole. Sampled from the manhole w/ peri.	
Location Sketch for new locations		
Sample Location	Does the location match the map?	☒ Yes ☐ No

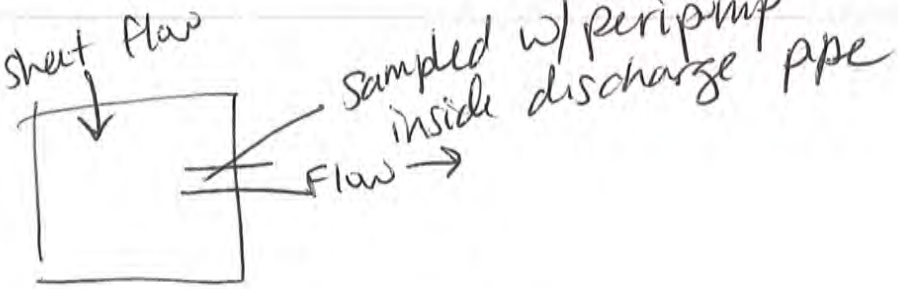
pH 6.7 3pt cal

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name:	Melodyk / Scott T.	Date:	2/14/19
Location ID	CB 4A		
Visual Observations	☐ Odor ☐ Floating Materials ☐ Sheen	☐ Sheen ☑ Suspended Solids, describe: ☑ Other: Slightly Cloudy / tur bid water	
Potential Metal Sources	☒ Metal Storage ☒ Roof drains ☒ Other: parking lot	☐ Exposed Soil ☐ Solids accumulation	
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:	
Storm Water observations	☒ No Flow ☐ Flowing Water ☒ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate: lightly Raining, no flow into CB at sample time sampled in output discharge event started @ 10am	
Time (no flow)	10	Notes:	
Time (discharge)	1015	Notes: discharge @ 1015	
Time Sampled	1255	Notes: sampled w/ peripump @ 1255	
BMP Evaluation	Are BMPs in place and are they maintained? yes, CB filter in place. Sampled from w/in lynch style CB discharge		
Location Sketch for new locations	~~First flush~~ sample NPV  lynch discharge sample spot		
Sample Location	Does the location match the map?	☒ Yes ☐ No	

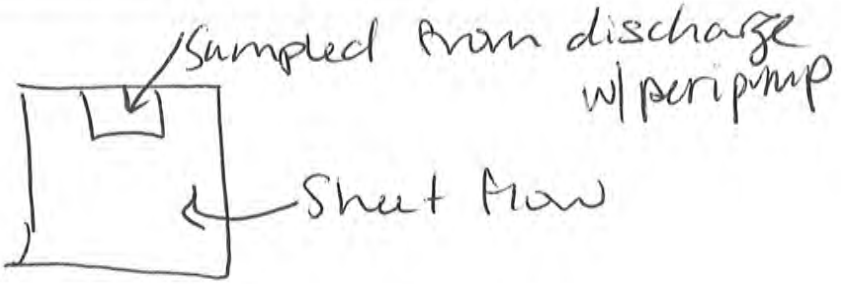
PH 7.4 3pt cal

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name:	Melody K Scott T	Date:	2/14/19
Location ID	CA		
Visual Observations	☐ Odor ☐ Floating Materials ☐ Sheen	☐ Sheen ☒ Suspended Solids, describe: ☒ Other: Slightly turbid cloudy water	
Potential Metal Sources	☐ Metal Storage ☐ Roof drains ☒ Other: Parking lot	☐ Exposed Soil ☐ Solids accumulation	
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:	
Storm Water observations	☐ No Flow ☒ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate: Very light rain, small amount entering CB.	
Time (no flow)	10	Notes: event started @ 10 am	
Time (discharge)	1015	Notes: discharge at 1015	
Time Sampled	1320	Notes: collected from discharge pipe @ 1320 after 1st flush	
BMP Evaluation	Are BMPs in place and are they maintained? No insert. pipe direct discharge. ↳ open straight pipe to discharge		
Location Sketch for new locations			
Sample Location	Does the location match the map?	☒ Yes ☐ No	

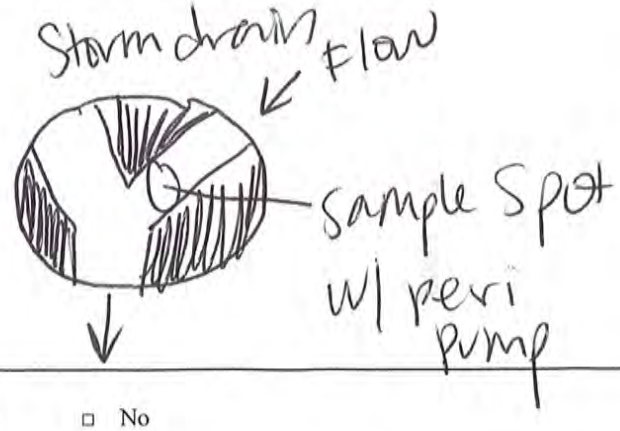
pH 7.4 3pt cal.

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name:	Melody K Scott	Date:	2/14/19
Location ID	SA		
Visual Observations	☐ Odor ☐ Floating Materials ☐ Sheen	☐ Sheen ☒ Suspended Solids, describe: ☒ Other: Slightly cloudy/turbid	
Potential Metal Sources	☐ Metal Storage ☒ Roof drains ☒ Other:	☐ Exposed Soil ☐ Solids accumulation	
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible: Metal CB sample point rusty	
Storm Water observations	☐ No Flow ☒ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate: heavy rain occurring	
Time (no flow)	10AM	Notes: event began @ 10AM	
Time (discharge)	1015	Notes: discharge @ 1015AM	
Time Sampled	1145	Notes:	
BMP Evaluation	Are BMPs in place and are they maintained? Catch basin had no insert, but does have J-style lynch CB. sampled from inside lynch.		
Location Sketch for new locations			
Sample Location	Does the location match the map?	☒ Yes ☐ No	

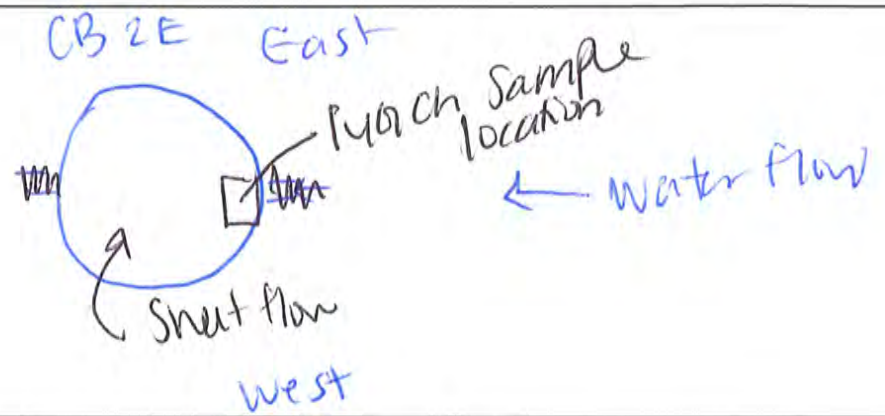
PH 8.0 3pt cal.

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name:	melody K / scott T.	Date: 2/14/19	
Location ID	Stm-1		
Visual Observations	□ Odor □ Floating Materials □ Sheen	□ Sheen ☒ Suspended Solids, describe: ☒ Other: cloudy, slightly turbid	
Potential Metal Sources	☒ Metal Storage ☒ Roof drains ☒ Other:	□ Exposed Soil □ Solids accumulation	
Access to Location	Was location safe to sample for storm water? ☒ Yes □ No	If no, describe alternative locations or methods to make area accessible: heavy rain occurring	
Storm Water observations	□ No Flow ☒ Flowing Water □ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate:	
Time (no flow)	10AM	Notes: Rain event began @ approx 10AM	
Time (discharge)	1015	Notes: discharge at 1015	
Time Sampled	1205	Notes: sample collected w/ peripump	
BMP Evaluation	Are BMPs in place and are they maintained? manhole, no BMPs in place, Sampled w/ peri		
Location Sketch for new locations			
Sample Location	Does the location match the map?	☒ Yes □ No	

PH 7.8 3pt cal.

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name: Melody Kenerer Scott Terranova		Date: 2/14/~~18~~ 19 (MK)
Location ID	CB 2E	
Visual Observations	☐ Odor ☐ Floating Materials ☐ Sheen	☐ Sheen ☒ Suspended Solids, describe: ☐ Other: cloudy water, slightly turbid. no large material
Potential Metal Sources	☐ Metal Storage ☒ Roof drains ☐ Other:	☐ Exposed Soil ☐ Solids accumulation
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible: heavy Rain, lifted grate w/ fork lift.
Storm Water observations	☐ No Flow ☒ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate:
Time (no flow)	10 AM	Notes: Rain event began at approx 10 AM.
Time (discharge)	10 15 AM	Notes: Discharging upon arrival at 10:15 AM
Time Sampled	11 10	Notes: Sample collected w/ ken pump
BMP Evaluation	Are BMPs in place and are they maintained? Catch basin insert within the CB, and functioning.	
Location Sketch for new locations		
Sample Location	Does the location match the map?	☒ Yes ☐ No

pH 3pt calibrated, Sample: 6.9 pH SU

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name: Emily Ponasol Date: 3/13/20

Location ID	STM-1	
Visual Observations	☐ Odor ☒ Floating Materials ☐ Sheen	☐ Sheen ☒ Suspended Solids, describe: ☒ Other: SLIGHT TINT SMALL DARK PARTICLES, FLOATING + SETTLED
Potential Metal Sources	☐ Metal Storage ☒ Roof drains ☐ Other:	☐ Exposed Soil ☐ Solids accumulation
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:
Storm Water observations	☐ No Flow ☒ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate:
Time (no flow)	10:00	Notes:
Time (discharge)	11:00	Notes:
Time Sampled	12:00	Notes:
BMP Evaluation	Are BMPs in place and are they maintained? YES, CB FILTER INSERTS UPSTREAM	
Location Sketch for new locations	pH 8.5	
Sample Location	Does the location match the map?	☐ Yes ☐ No

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name: S Terrau Date: 3/13/20

Location ID	2E	
Visual Observations	☐ Odor ☒ Floating Materials ☐ Sheen	☐ Sheen ☒ Suspended Solids, describe: ☐ Other: DARK, SAND-SIZE, FINE
Potential Metal Sources	☐ Metal Storage ☐ Roof drains ☐ Other:	☐ Exposed Soil ☐ Solids accumulation
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:
Storm Water observations	☐ No Flow ☒ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate: 1200
Time (no flow)	11:00	Notes:
Time (discharge)	12:00	Notes:
Time Sampled	12:55	Notes:
BMP Evaluation	Are BMPs in place and are they maintained? Yes, FILTER INSERT + SORBENT PILLOW IN PLACE	
Field pH 6.54 No Color **Location Sketch for new locations**		
Sample Location	Does the location match the map?	☒ Yes ☐ No

CB-2E-SW-20200313 @ 1255

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name: S Terranova		Date: 3/13/20
Location ID	E-1	
Visual Observations	☐ Odor ☐ Floating Materials ☐ Sheen	☐ Sheen ☐ Suspended Solids, describe: ☒ Other: SLIGHT TINT
Potential Metal Sources	☐ Metal Storage ☑ Roof drains ☐ Other:	☐ Exposed Soil ☐ Solids accumulation
Access to Location	Was location safe to sample for storm water? ☑ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:
Storm Water observations	☐ No Flow ☑ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate: 1100
Time (no flow)	10:00	Notes:
Time (discharge)	11:00	Notes:
Time Sampled	12:05	Notes:
BMP Evaluation Field pH 6.79 No Color (Strips)	Are BMPs in place and are they maintained? N/A	
Location Sketch for new locations		
Sample Location	Does the location match the map?	☒ Yes ☐ No

Sampled @ 1205
E-1-SW-20200313

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name: Emily Parsons		Date: 3/13/20
Location ID	CB-4A	
Visual Observations	☐ Odor ☒ Floating Materials ☐ Sheen	☐ Sheen ☐ Suspended Solids, describe: ☐ Other:
Potential Metal Sources	☐ Metal Storage ☒ Roof drains ☐ Other:	☒ Exposed Soil/DETERIORATING ASPHALT ☐ Solids accumulation
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:
Storm Water observations	☐ No Flow ☒ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate:
Time (no flow)	11:00	Notes:
Time (discharge)	12:30	Notes:
Time Sampled	13:20	Notes:
BMP Evaluation	Are BMPs in place and are they maintained? YES, FILTER INSERT, SORBENT PILLOW, ~~& MEDIA PRESENT~~ EP	
pH 7.9 **Location Sketch for new locations**		
Sample Location	Does the location match the map?	☒ Yes ☐ No

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name:	EMILY PONASSOL	Date: ~~3/5~~ 3/13/20
Location ID	CB - 5A	
Visual Observations	☐ Odor ☐ Floating Materials ☐ Sheen	☐ Sheen ☒ Suspended Solids, describe: ☐ Other: SMALL SAND SIZED PARTICLES
Potential Metal Sources	☐ Metal Storage ☐ Roof drains ☐ Other:	☐ Exposed Soil ☐ Solids accumulation
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:
Storm Water observations	☐ No Flow ☒ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate:
Time (no flow)	10:00	Notes:
Time (discharge)	11:00	Notes:
Time Sampled	12:50	Notes: ~~pH 7.4~~ EP 7.3
BMP Evaluation	Are BMPs in place and are they maintained? YES, FILTER INSERT PRESENT + ABSORBENT PILLOW ~~+ MEDIA~~ EP	
Location Sketch for new locations		
Sample Location	Does the location match the map?	☒ Yes ☐ No

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name: S Terrown / BP		Date: 3/13/20
Location ID CB-6A		
Visual Observations	☐ Odor ☒ Floating Materials EP ☐ Sheen	☐ Sheen ☒ Suspended Solids, describe: ☒ Other: SLIGHT TINT SMALL - ORGANIC, PLANT MATERIAL
Potential Metal Sources	☐ Metal Storage ☐ Roof drains ☐ Other:	☐ Exposed Soil ☐ Solids accumulation
Access to Location	Was location safe to sample for storm water? ☑ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:
Storm Water observations	☐ No Flow ☑ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate: 1245
Time (no flow)	11:00	Notes:
Time (discharge)	12:45	Notes:
Time Sampled	13:30	Notes:
BMP Evaluation	Are BMPs in place and are they maintained? Yes, ABSORBENT PILLOW IN CB.	
Field pH 6.48 **Location Sketch for new locations**		
Sample Location	Does the location match the map?	☑ Yes ☐ No

CB-6A-SW-20200313@ 1330

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name: EMILY		Date: 9/23/20	
Location ID	STM - 1		
Visual Observations	☐ Odor ☐ Floating Materials ☐ Sheen	☐ Sheen ☒ Suspended Solids, describe: COUPLE DARK BROWN SUSPENDED SAND-SIZE PARTICLES ☒ Other: SLIGHT YELLOW/BROWN TINT	
Potential Metal Sources	☒ Metal Storage ☒ Roof drains ☐ Other:	☐ Exposed Soil ☐ Solids accumulation	
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:	
Storm Water observations	☐ No Flow ☒ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate: 500 mL/min	
Time (no flow)	1430	Notes:	
Time (discharge)	1445	Notes:	
Time Sampled	1610	Notes: pH 7.8	
BMP Evaluation	Are BMPs in place and are they maintained? ~~INSERP~~ INSERTS IN CBS UPSTREAM OF THE LOCATION, INSERTS CLEAN, REPLACED 7/30/20		
Location Sketch for new locations	NA		
Sample Location	Does the location match the map?	☒ Yes ☐ No	

BOTH CYANIDE PAPERS NO COLOR

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name:	EMILY	Date:	9/23/20
Location ID	CB-2E		
Visual Observations	☐ Odor ☒ Floating Materials ☐ Sheen	☐ Sheen ☐ Suspended Solids, describe: 5 FLOATING PARTICLES ☒ Other: VERY SLIGHTLY YELLOW TINT MORE SETTLED SOLIDS THAN STM-1	
Potential Metal Sources	☒ Metal Storage ☒ Roof drains ☐ Other:	☐ Exposed Soil ☐ Solids accumulation	
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:	
Storm Water observations	☐ No Flow ☒ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate: 1L/min	
Time (no flow)	1430	Notes:	
Time (discharge)	1500	Notes:	
Time Sampled	1640	Notes: pH 8.3	
BMP Evaluation	Are BMPs in place and are they maintained? CB INSERT IN PLACE + CLEAN		
Location Sketch for new locations	NA		
Sample Location	Does the location match the map?	☒ Yes ☐ No	

BOTH CYANIDE PAPERS NO COLOR

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name: EMILY Date: 9/23/20

Location ID	E-1	
Visual Observations	☐ Odor ☐ Floating Materials ☐ Sheen	☐ Sheen ☐ Suspended Solids, describe: ☐ Other: CLEAR
Potential Metal Sources	☒ Metal Storage ☒ Roof drains ☐ Other:	☐ Exposed Soil ☐ Solids accumulation
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:
Storm Water observations	☐ No Flow ☒ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate: 1.5 L/min
Time (no flow)	1430	Notes:
Time (discharge)	1500	Notes:
Time Sampled	1720	Notes: pH 8.3
BMP Evaluation	Are BMPs in place and are they maintained? CB INSERTS UPSTREAM OF LOCATION CLEAN & RECENTLY REPLACED ON 7/20/20	
Location Sketch for new locations		
Sample Location	Does the location match the map?	☒ Yes ☐ No

BOTH CYANIDE NO COLOR

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name: EMILY		Date: 9/23/13
Location ID	CB-4A	
Visual Observations	☐ Odor ☐ Floating Materials ☐ Sheen	☐ Sheen ☐ Suspended Solids, describe: ☒ Other: VERY SLIGHT YELLOW TINT
Potential Metal Sources	☒ Metal Storage ☒ Roof drains ☐ Other:	☐ Exposed Soil ☒ Solids accumulation
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:
Storm Water observations	☐ No Flow ☒ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate: 100 mL/min
Time (no flow)	1600	Notes:
Time (discharge)	1700	Notes:
Time Sampled	1755	Notes: pH 7.5
BMP Evaluation	Are BMPs in place and are they maintained? INSERT IN PLACE & CLEAN, BOOMS AROUND CB TO CATCH SEDIMENT	
Location Sketch for new locations		
Sample Location	Does the location match the map?	☒ Yes ☐ No

BOTH CYANIDE NO COLOR

Univar Portland (NW Yeon) - Storm Water Sampling Form

Sampler name: EMILY PONASIK Date: 9/23/20

Location ID	LB-5A	
Visual Observations	☐ Odor ☐ Floating Materials ☐ Sheen	☐ Sheen ☐ Suspended Solids, describe: ☐ Other: NOTE BROWN/GREEN TINT
Potential Metal Sources	☒ Metal Storage ☒ Roof drains ☐ Other:	☐ Exposed Soil ☐ Solids accumulation
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:
Storm Water observations	☐ No Flow ☒ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate: SUSTAINED FLOW 100ML/MIN
Time (no flow)	1430	Notes: DUP_SW_20200923
Time (discharge)	1445	Notes:
Time Sampled	1515	Notes: pH 7.5
BMP Evaluation	Are BMPs in place and are they maintained? YES, FILTER INSERTS IN PLACE + CLEAN, NO SEDIMENT ACCUMULATION AROUND LB	
Location Sketch for new locations	NA	
Sample Location	Does the location match the map?	☒ Yes ☐ No

BOTH CYANIDE PAPERS NO COLOR

Univar Portland (NW Yeon) - Storm Water Sampling Form

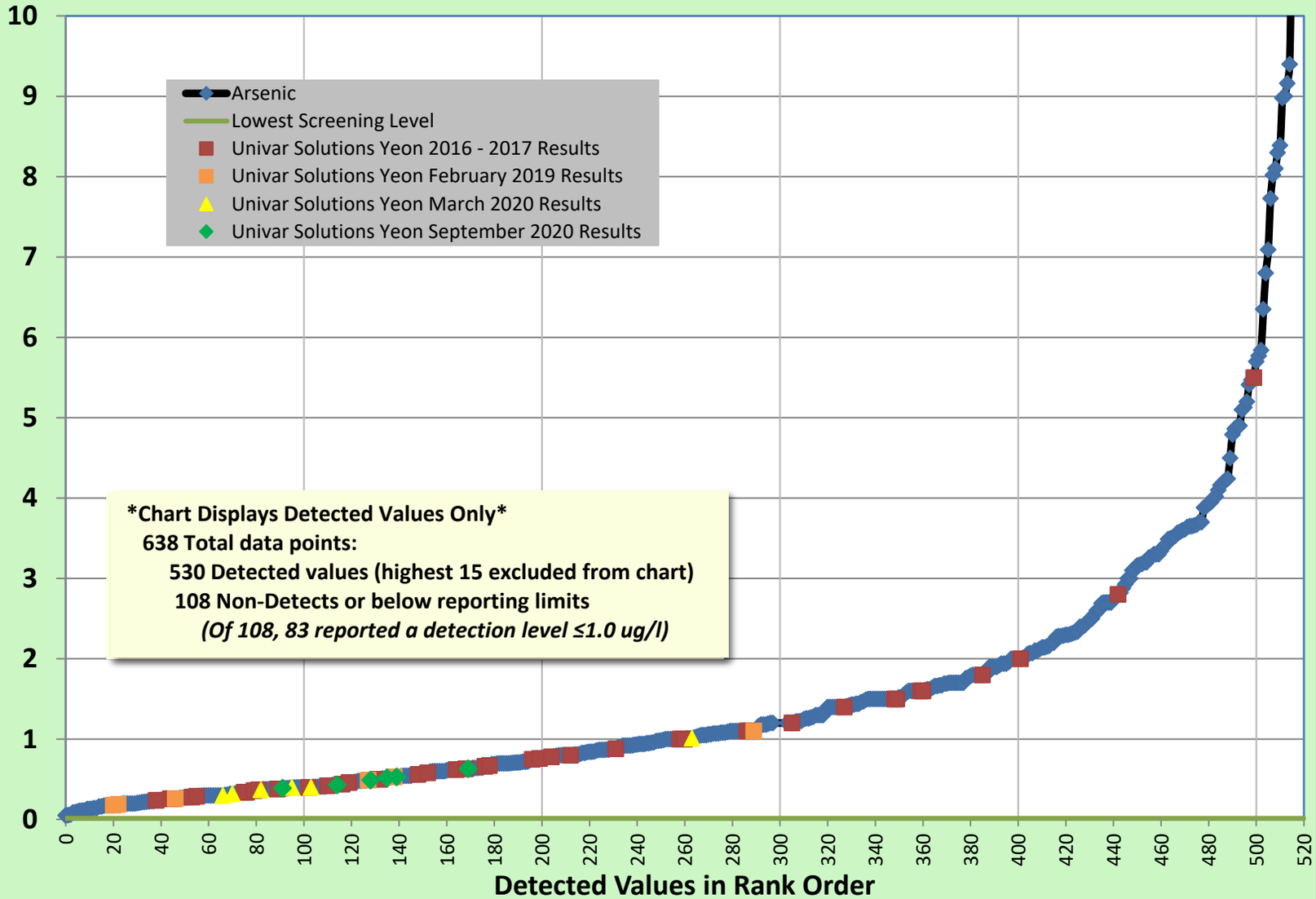
Sampler name: EMILY Date: 9/23/20

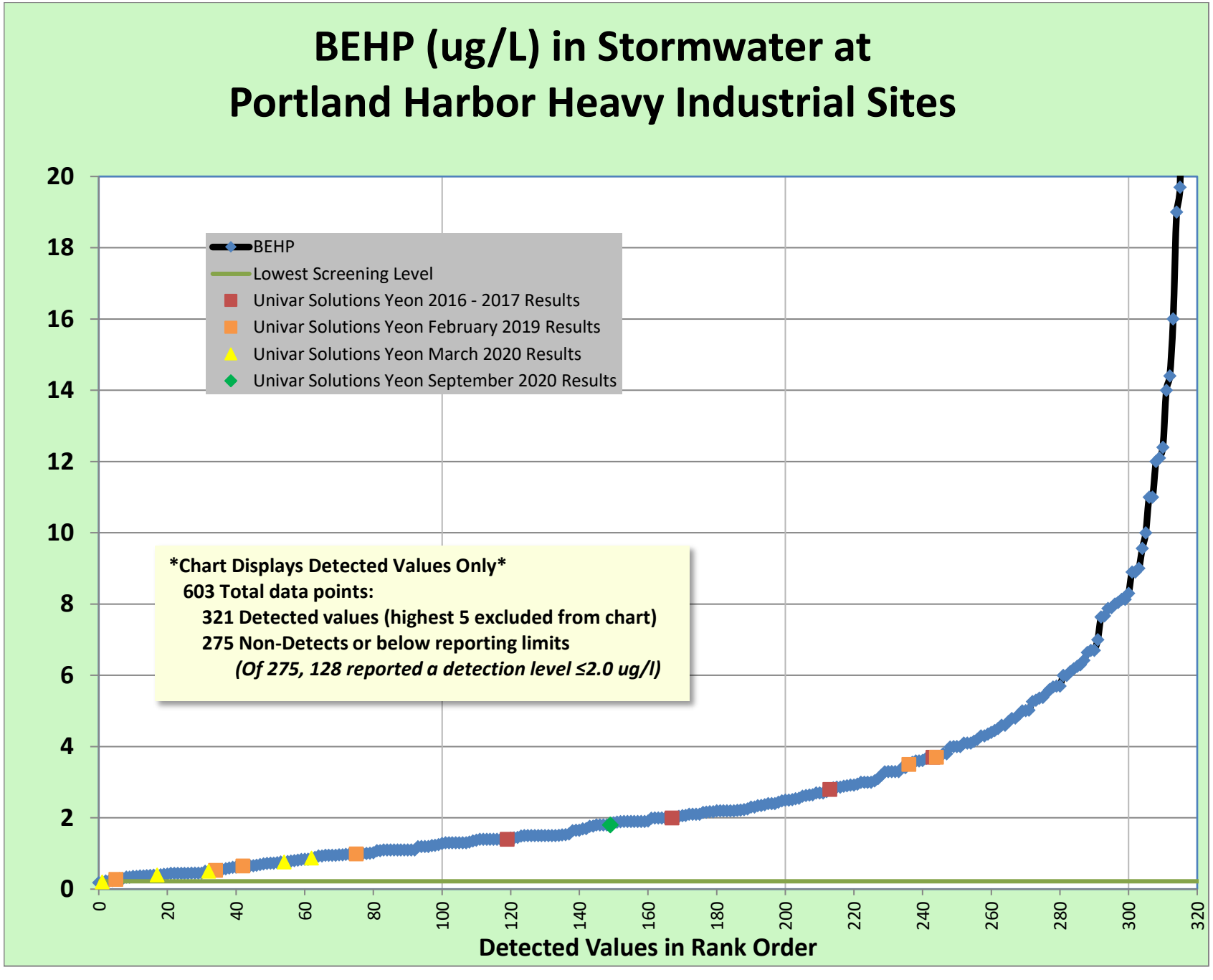
Location ID	LS-6A	
Visual Observations	☐ Odor ☒ Floating Materials ☐ Sheen	☒ Sheen POSSIBLE BIOSHEEN? ☐ Suspended Solids, describe: ☒ Other: FOAM BROWNISH TINT
Potential Metal Sources	☒ Metal Storage ☒ Roof drains ☐ Other:	☐ Exposed Soil ☐ Solids accumulation
Access to Location	Was location safe to sample for storm water? ☒ Yes ☐ No	If no, describe alternative locations or methods to make area accessible:
Storm Water observations	☐ No Flow ☒ Flowing Water ☐ Stagnant Water	If water is flowing, descibe time of discharge, direction, and approximate flow rate: 250 mL/min
Time (no flow)	1430	Notes:
Time (discharge)	1700	Notes:
Time Sampled	1840	Notes: pH 8.2
BMP Evaluation	Are BMPs in place and are they maintained? PARKING LOT CLEAN, RECENTLY SWEPT	
Location Sketch for new locations		
Sample Location	Does the location match the map?	☒ Yes ☐ No

APPENDIX I STORMWATER J CURVES

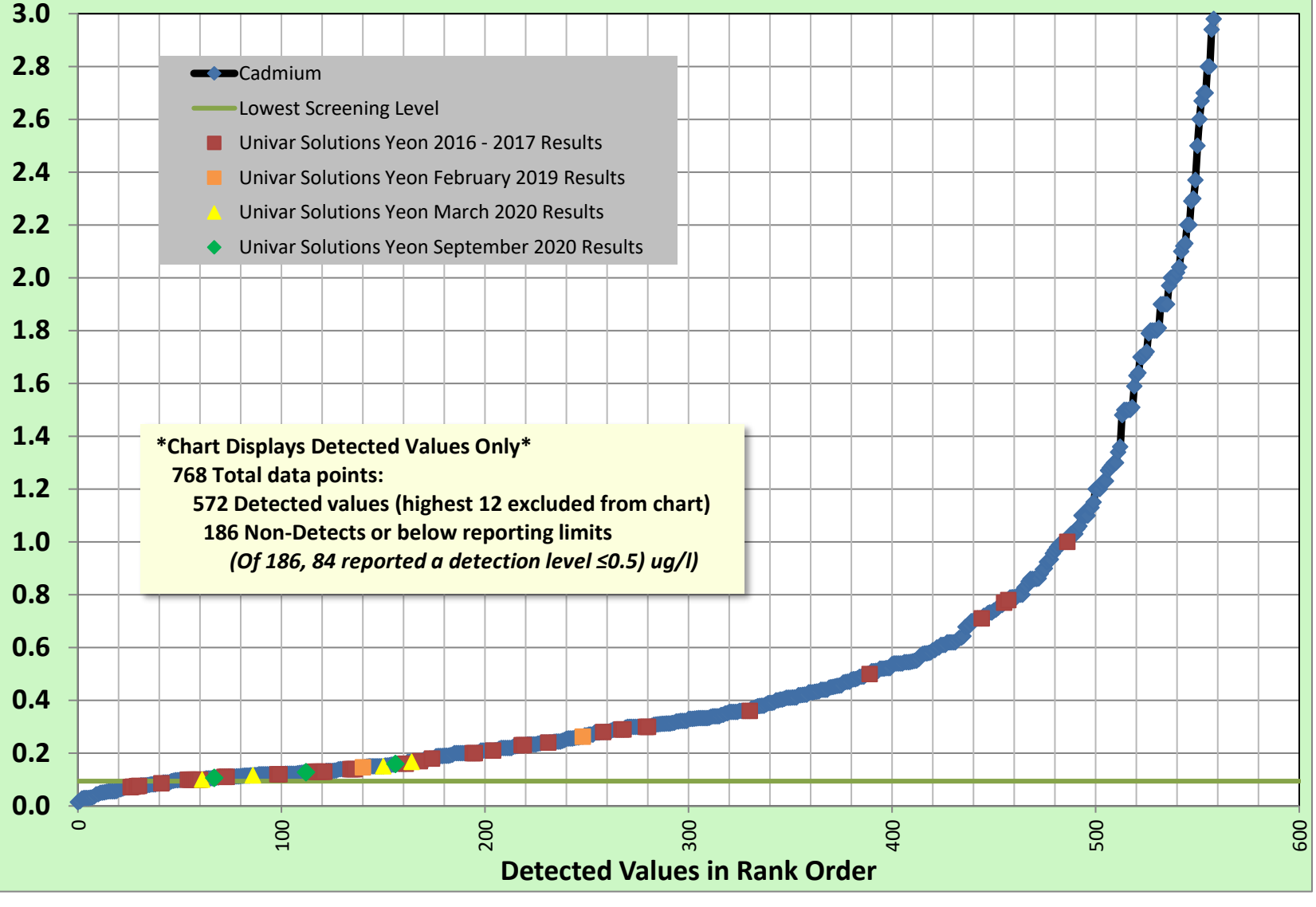
State of Oregon Department of Environmental Quality

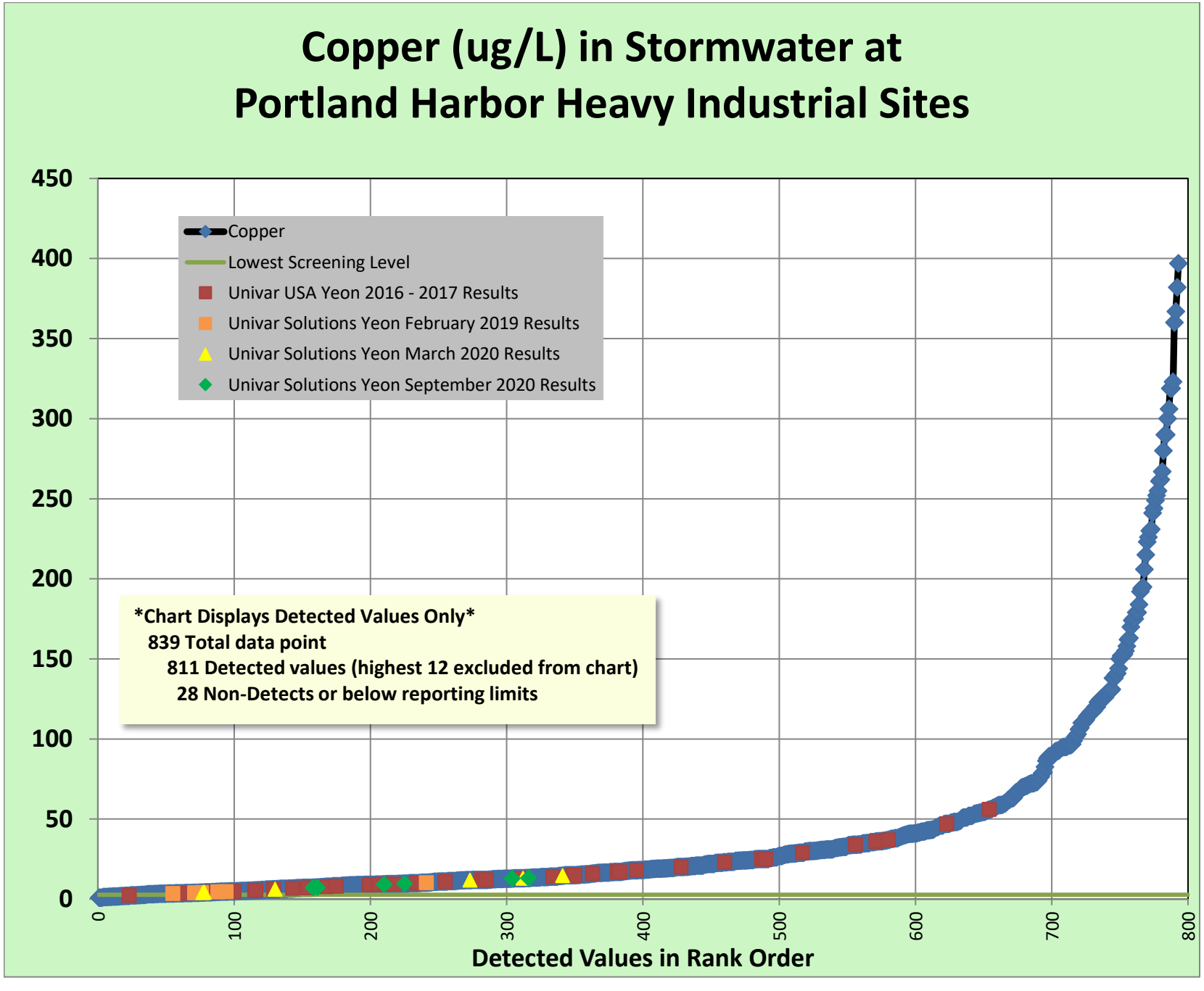
Arsenic (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites

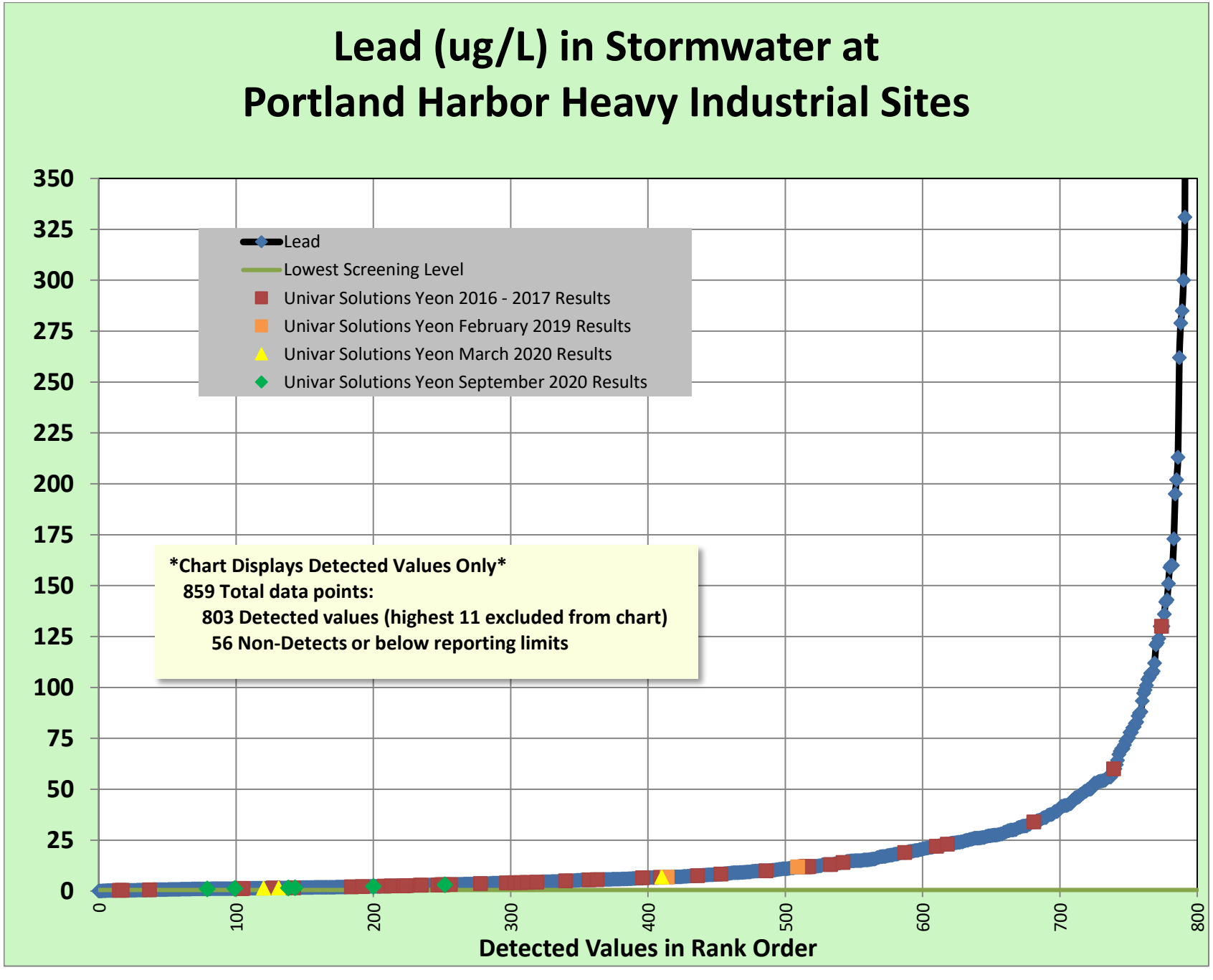


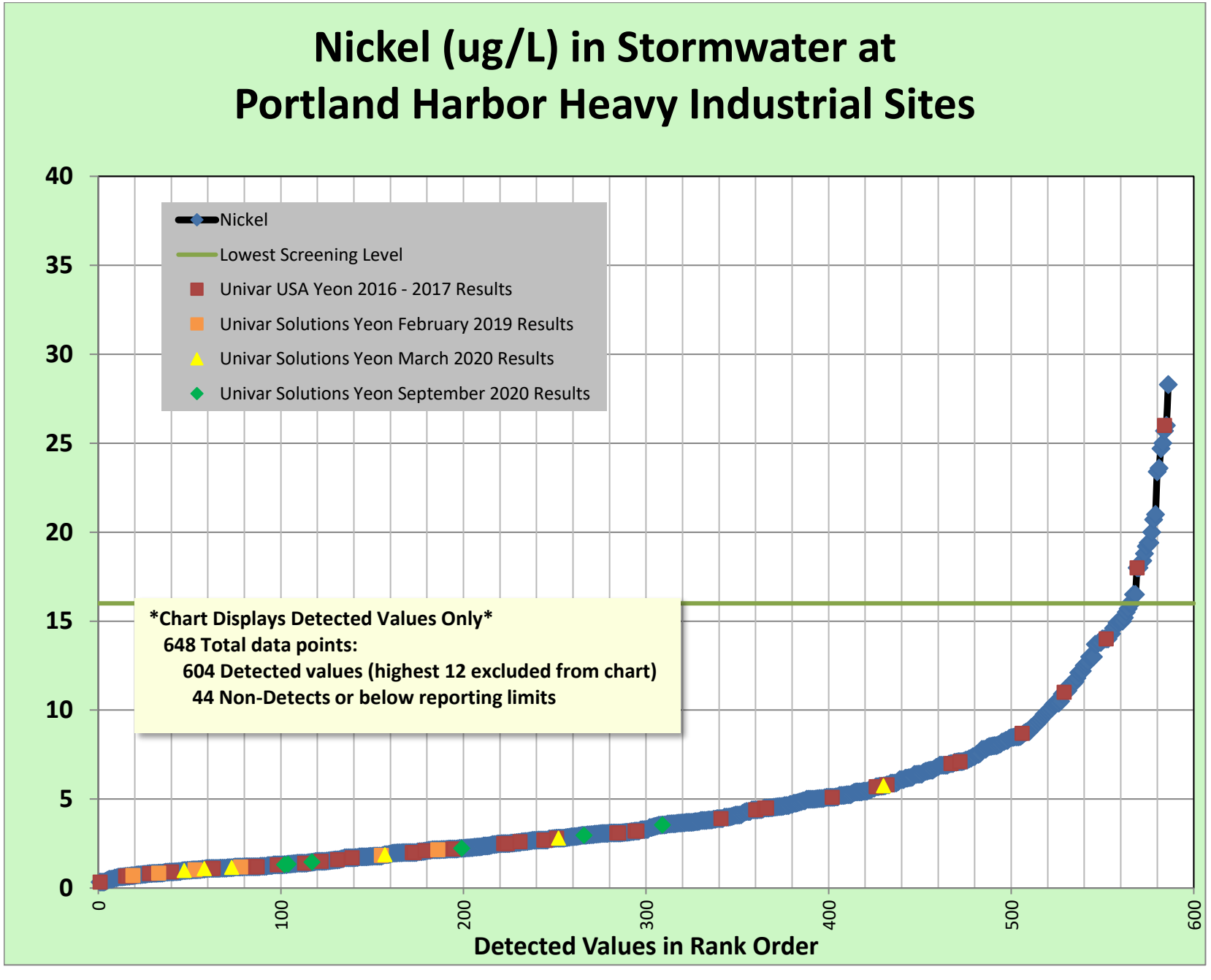

BEHP (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
BEHP
Lowest Screening Level
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon February 2019 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Chart Displays Detected Values Only
603 Total data points:
321 Detected values (highest 5 excluded from chart)
275 Non-Detects or below reporting limits
(Of 275, 128 reported a detection level ≤2.0 ug/l)
0
2
4
6
8
10
12
14
16
18
20
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
300
320
Detected Values in Rank Order

Cadmium (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites

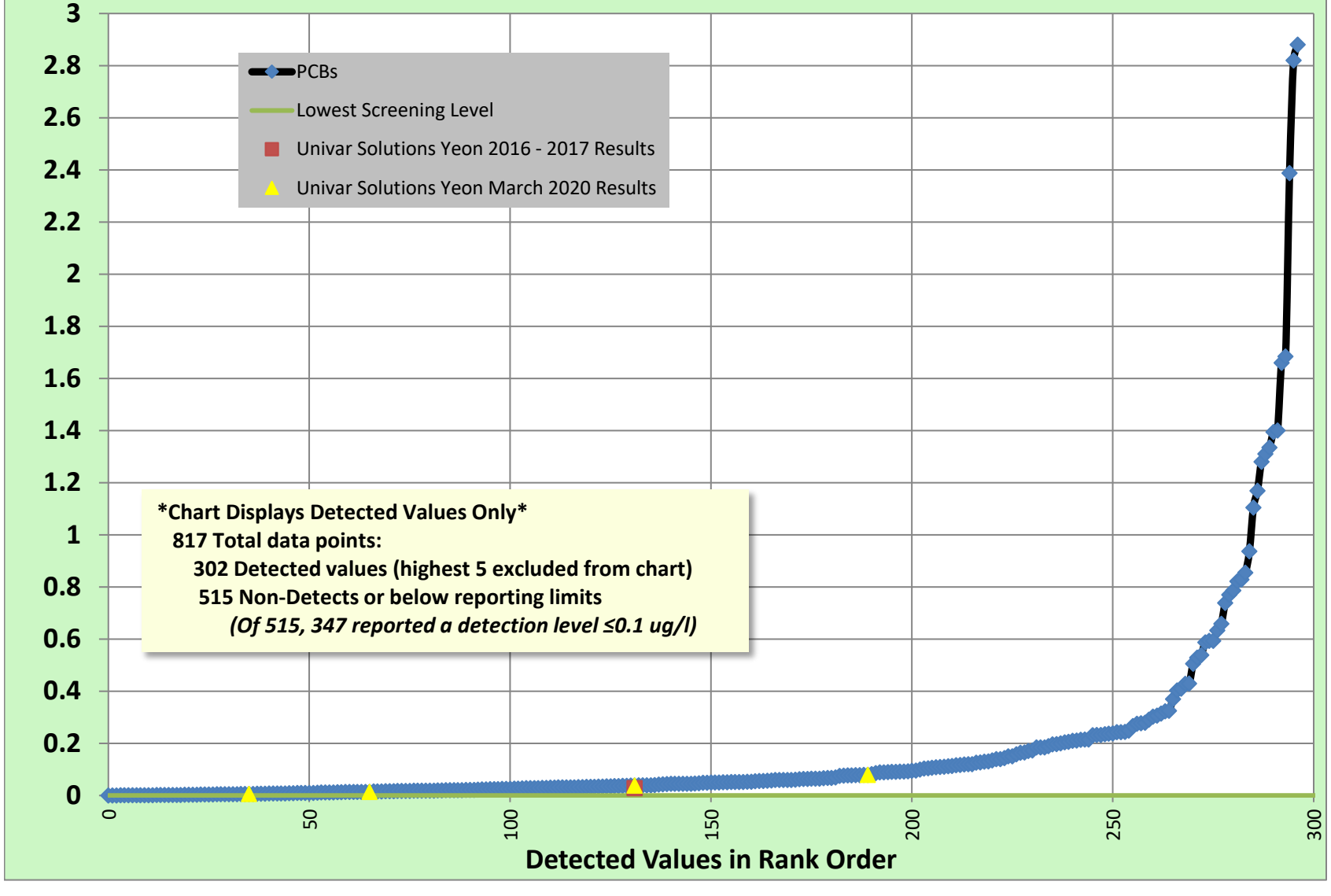


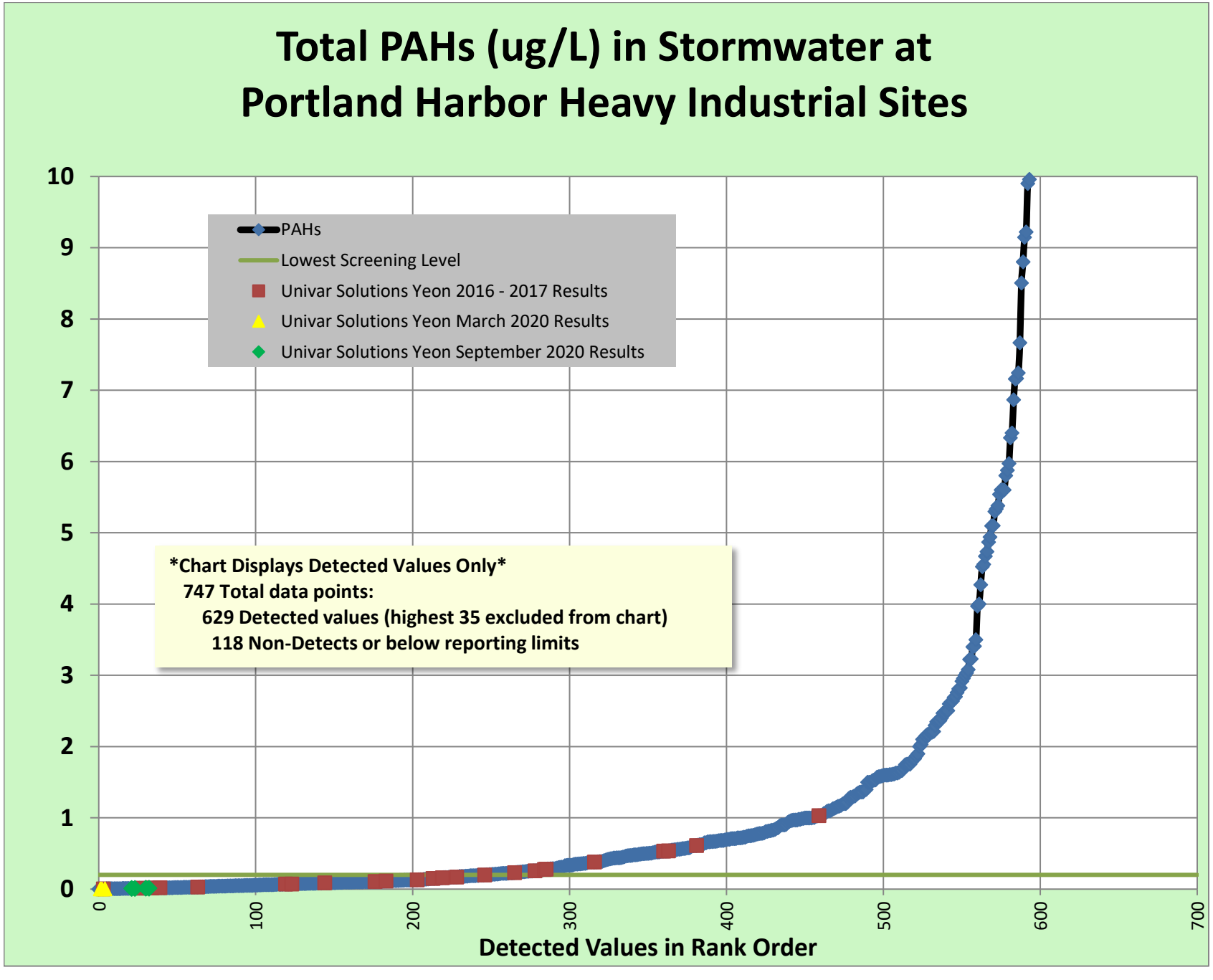

Copper (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
450
400
350
300
250
200
150
100
50
0
Copper
Lowest Screening Level
Univar USA Yeon 2016 - 2017 Results
Univar Solutions Yeon February 2019 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Chart Displays Detected Values Only
839 Total data point
811 Detected values (highest 12 excluded from chart)
28 Non-Detects or below reporting limits
0
100
200
300
400
500
600
700
800
Detected Values in Rank Order

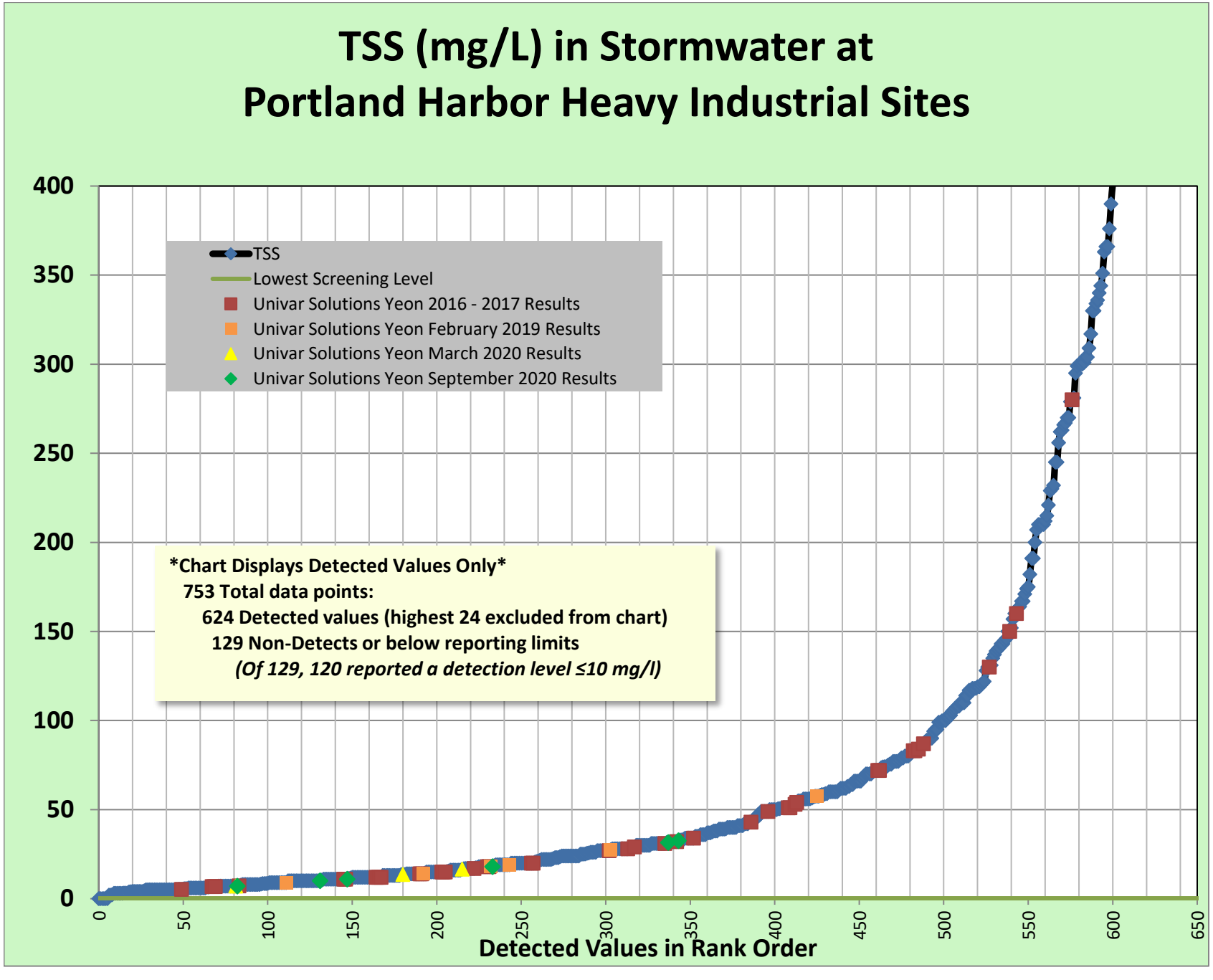

Lead (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
350
325
300
275
250
225
200
175
150
125
100
75
50
25
0
Lead
Lowest Screening Level
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon February 2019 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Chart Displays Detected Values Only
859 Total data points:
803 Detected values (highest 11 excluded from chart)
56 Non-Detects or below reporting limits
0
100
200
300
400
500
600
700
800
Detected Values in Rank Order

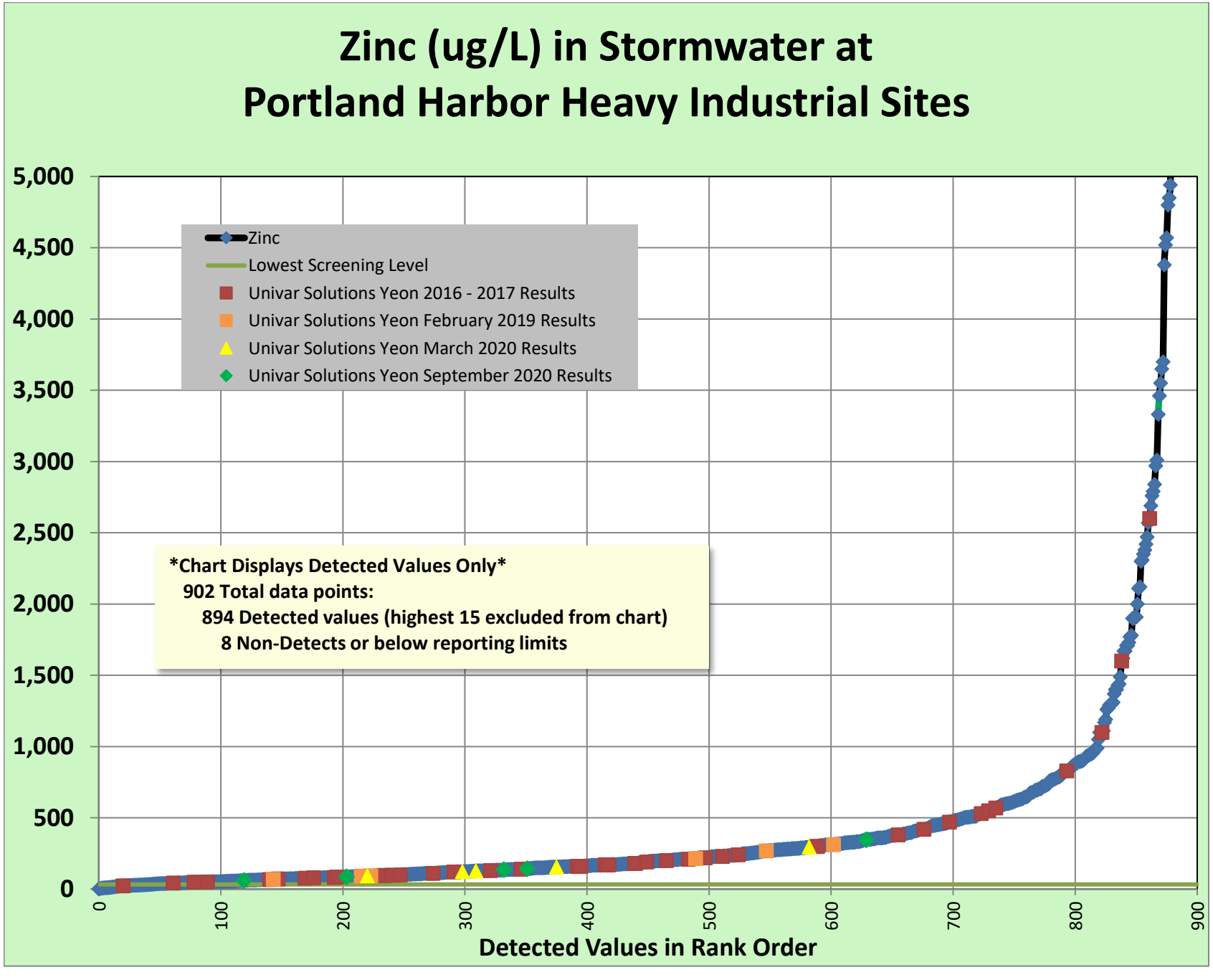

Nickel (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
Nickel
Lowest Screening Level
Univar USA Yeon 2016 - 2017 Results
Univar Solutions Yeon February 2019 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Chart Displays Detected Values Only
648 Total data points:
604 Detected values (highest 12 excluded from chart)
44 Non-Detects or below reporting limits
40
35
30
25
20
15
10
5
0
0
100
200
300
400
500
600
Detected Values in Rank Order

Total PCBs (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites




Total PAHs (ug/L) in Stormwater at Portland Harbor Heavy Industrial Sites
PAHs
Lowest Screening Level
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Chart Displays Detected Values Only
747 Total data points:
629 Detected values (highest 35 excluded from chart)
118 Non-Detects or below reporting limits
10
9
8
7
6
5
4
3
2
1
0
0
100
200
300
400
500
600
700
Detected Values in Rank Order


TSS (mg/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
TSS
Lowest Screening Level
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon February 2019 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Chart Displays Detected Values Only
753 Total data points:
624 Detected values (highest 24 excluded from chart)
129 Non-Detects or below reporting limits
(Of 129, 120 reported a detection level ≤10 mg/l)
400
350
300
250
200
150
100
50
0
0
50
100
150
200
250
300
350
400
450
500
550
600
650
Detected Values in Rank Order


Zinc (ug/L) in Stormwater at
Portland Harbor Heavy Industrial Sites
5,000
4,500
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Zinc
Lowest Screening Level
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon February 2019 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Chart Displays Detected Values Only
902 Total data points:
894 Detected values (highest 15 excluded from chart)
8 Non-Detects or below reporting limits
0
100
200
300
400
500
600
700
800
900
Detected Values in Rank Order

APPENDIX J LOADING CALCULATIONS

Table 1
Rainfall Concentration Calculation Data
2020 SWSCEE
Univar Solutions USA Inc.
3950 NW Yeon Avenue

Outfall-18 Drainage Area

Rainfall Data

Low	25	inches
High	60	inches
Average	45	inches
mid	36	inches

Total Pervious	717	Acres
Total Impervious	446.4	Acres
Total Area	1163.4	Acres
Ia	0.38370294	Acres

Rv Calculation

Rv=	0.39533265

Annual Runoff Calculation

Rlow=	8.89498453	inches
Rhigh=	21.3479629	inches
Raverage=	16.0109722	inches
mid	12.8087777	inches

Average RM-9W 2012-2017 Concentrations

Total Zinc	0.34542	mg/l
Total PAHs	0.00119	mg/l
TSS	48.45799	mg/l
BEHP	0.00661	mg/l
Total PCBs	0.00007	mg/l

Load (lbs/year)

	Zinc	PAHS	TSS	BEHP	Total PCBs
Low	807.855732	2.78207262	113330.825	15.4693577	0.15766886
High	1938.85376	6.67697429	271993.98	37.1264585	0.37840525
Average	1454.14032	5.00773072	203995.485	27.8448439	0.28380394

Univar Yeon Property

2016-2017 Rainfall Data

Low	45.8	inches
High	52.82	inches
Average	49.31	inches

Total Pervious	0	Acres
Total Impervious	9.69	Acres
Total Area	9.69	Acres
Ia	1	Acres

Rv Calculation

Rv=	0.95

Annual Runoff Calculation

Rlow=	39.159	inches
Rhigh=	45.1611	inches
Raverage=	42.16005	inches

Average Univar 2016-2017 Concentrations

Total Zinc	1.12593	mg/l
Total PAHs	0.00046	mg/l
TSS	83.12889	mg/l
BEHP	0.01929	mg/l
Total PCBs	0.00003	mg/l

Load (lbs/year)

	Zinc	PAHS	TSS	BEHP	Total PCBs
Low	96.5720449	0.03946858	7130.01965	1.65457587	0.00287236
High	111.374136	0.04551813	Table	1.90818116	0.00331263
Average	103.97309	0.04249335	7676.44692	1.78137852	0.0030925

Univar Yeon Property

Yeon 2019-2020 Rainfall Data

Low	30.23	inches
High	37.74	inches
Average	33.985	inches

Total Pervious	0	Acres
Total Impervious	9.69	Acres
Total Area	9.69	Acres
Ia	1	Acres

Rv Calculation

Rv=	0.95

Annual Runoff Calculation

Rlow=	25.84665	inches
Rhigh=	32.2677	inches
Raverage=	29.057175	inches

Average Univar 2019-2020 Concentrations

Total Zinc	0.15964	mg/l
Total PAHs	0.00012	mg/l
TSS	17.05556	mg/l
BEHP	0.00107	mg/l
Total PCBs	0.00002	mg/l

Load (lbs/year)

	Zinc	PAHS	TSS	BEHP	Total PCBs
Low	9.0378521	0.00655194	965.555608	0.06048089	0.00109828
High	11.2831141	0.00817963	1205.42735	0.07550608	0.00137112
Average	10.1604831	0.00736578	1085.49148	0.06799349	0.0012347

ECSI #	Site Name		Completion
2426	Christenson Oil-Plant Number 1		
169	Texaco Portland Terminal		
4784	Container Management Services		
330	Univar		
69	Wilhelm Trucking		
1405	Carson Oil-NW 35th Avenue		
29	Columbia American Planting Co.		
4015	Container Recovery/OBRC		
1155	Gunderson Inc.		
100	BNSF Guilds Lake Yard		
5437	ODOT-	No additional outfalls	
None	City of Portland	Outfall 18, 19, 19a	
2454	Calbag/BDC NW Front		
1239	Front LP Properties – 5200 NW FRONT AVE		
4655	Greenway Recycling		

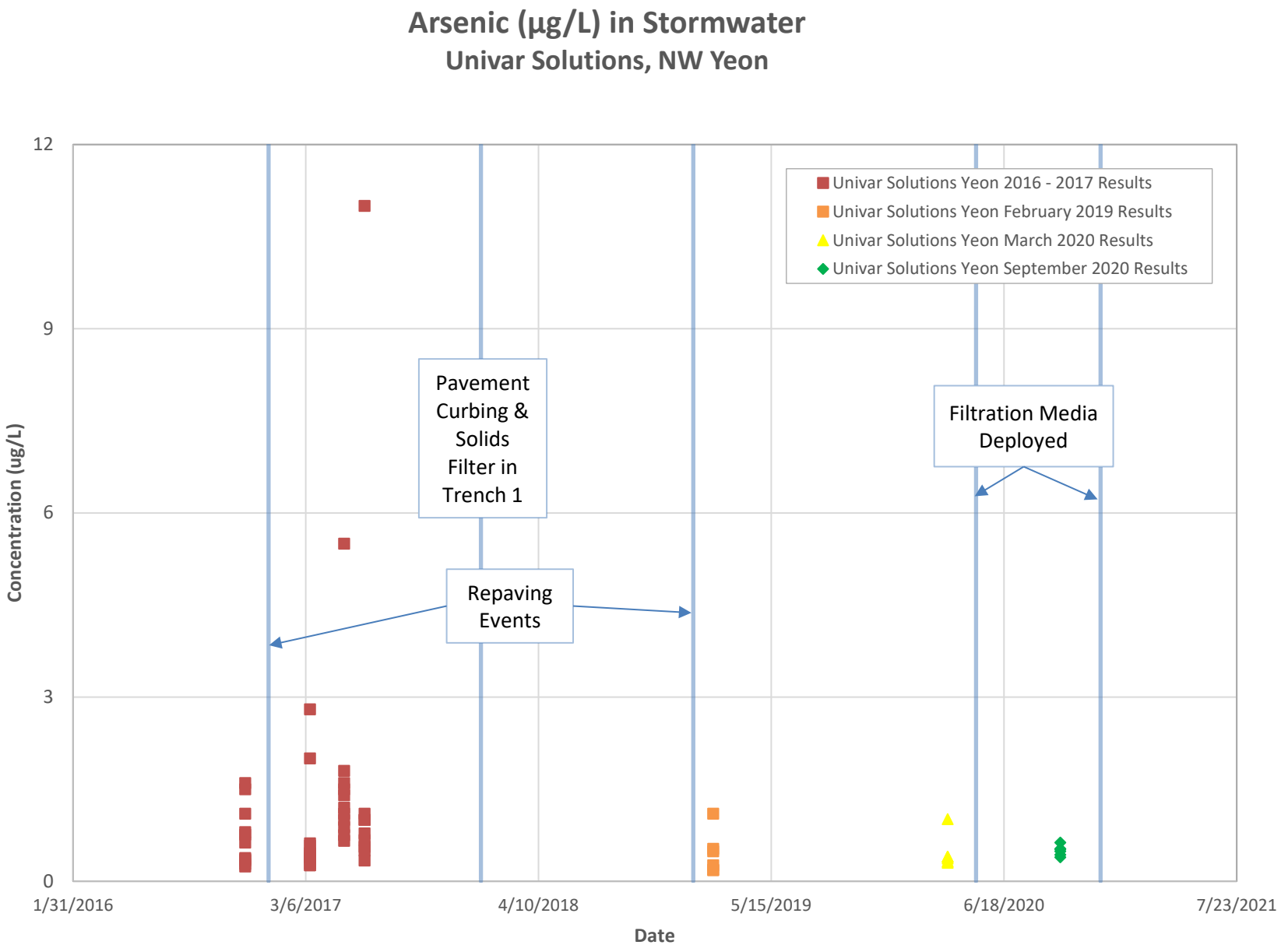
Table 2
Rainfall Loading Summary
2020 SWSCEE
Univar Solutions USA Inc.
3950 NW Yeon Avenue

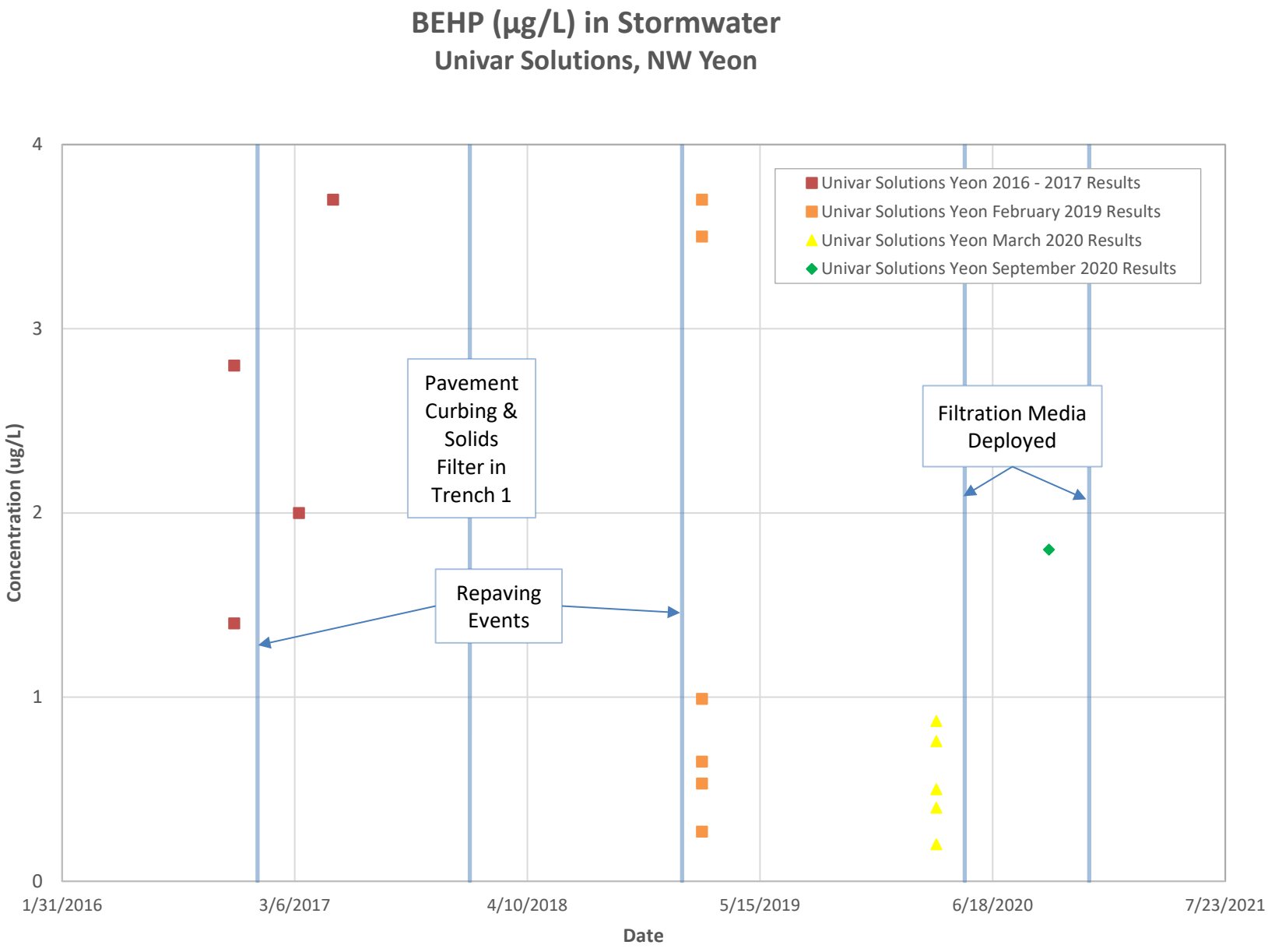
Constituent	Average RM-9W 2012-2017 Concentrations (mg/L)	Average Univar 2016-2017 Concentrations (mg/L)	Average Univar 2019-2020 Concentrations (mg/L)
Total Zinc	0.34542	1.12593	0.15964
Total PAHs	0.00119	0.00046	0.00012
TSS	48.45799	83.12889	17.05556
BEHP	0.00661	0.01929	0.00107
Total PCBs	0.00007	0.00003	0.00002

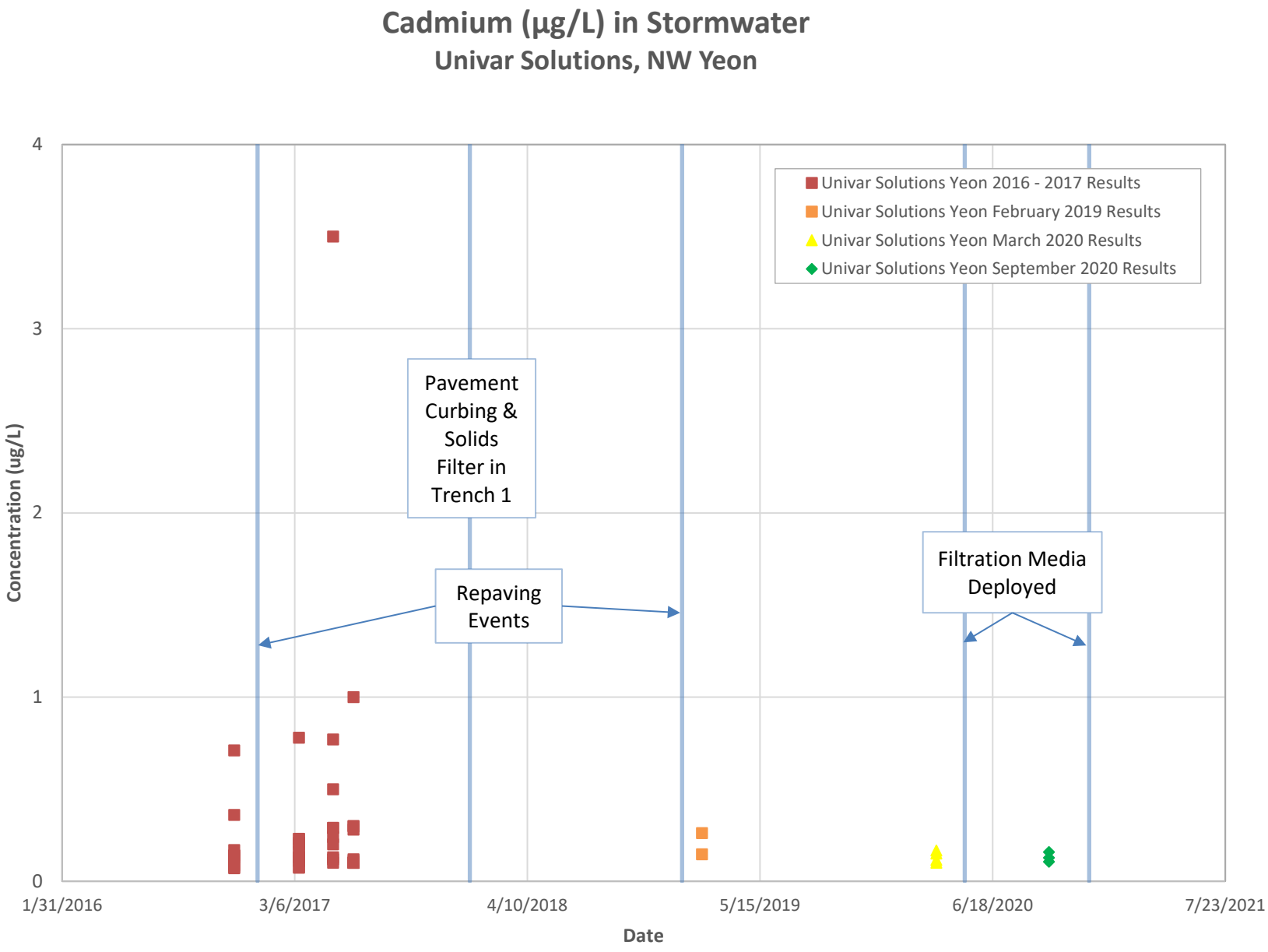
Load (lbs/year)

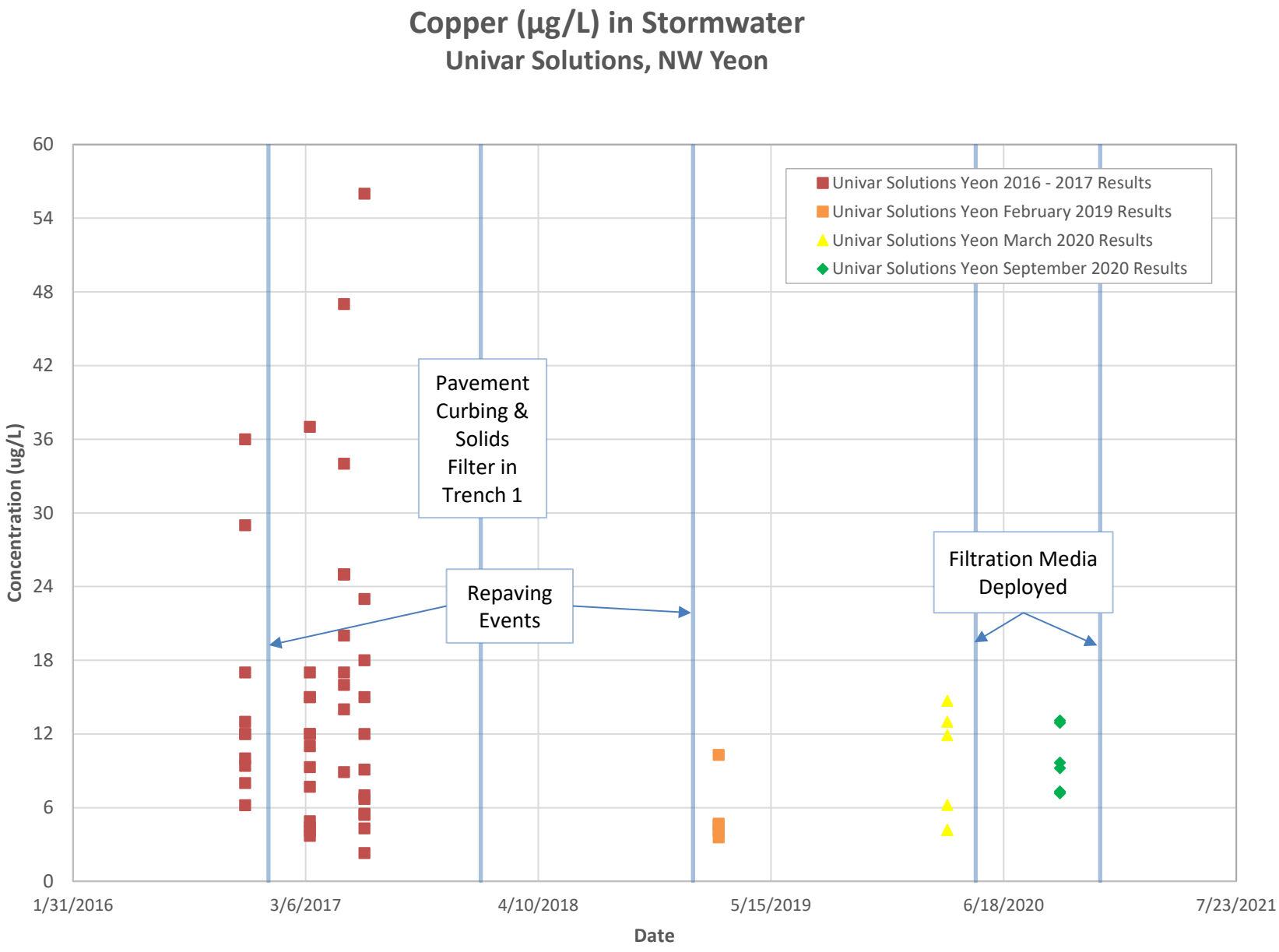
	Zinc	PAHS	TSS	BEHP	Total PCBs
Yeon 2016 - 2017 Average	103.9731	0.0425	7676.4469	1.7814	0.0031
Yeon 2019 - 2020 Average	10.1605	0.0074	1085.4915	0.0680	0.0012

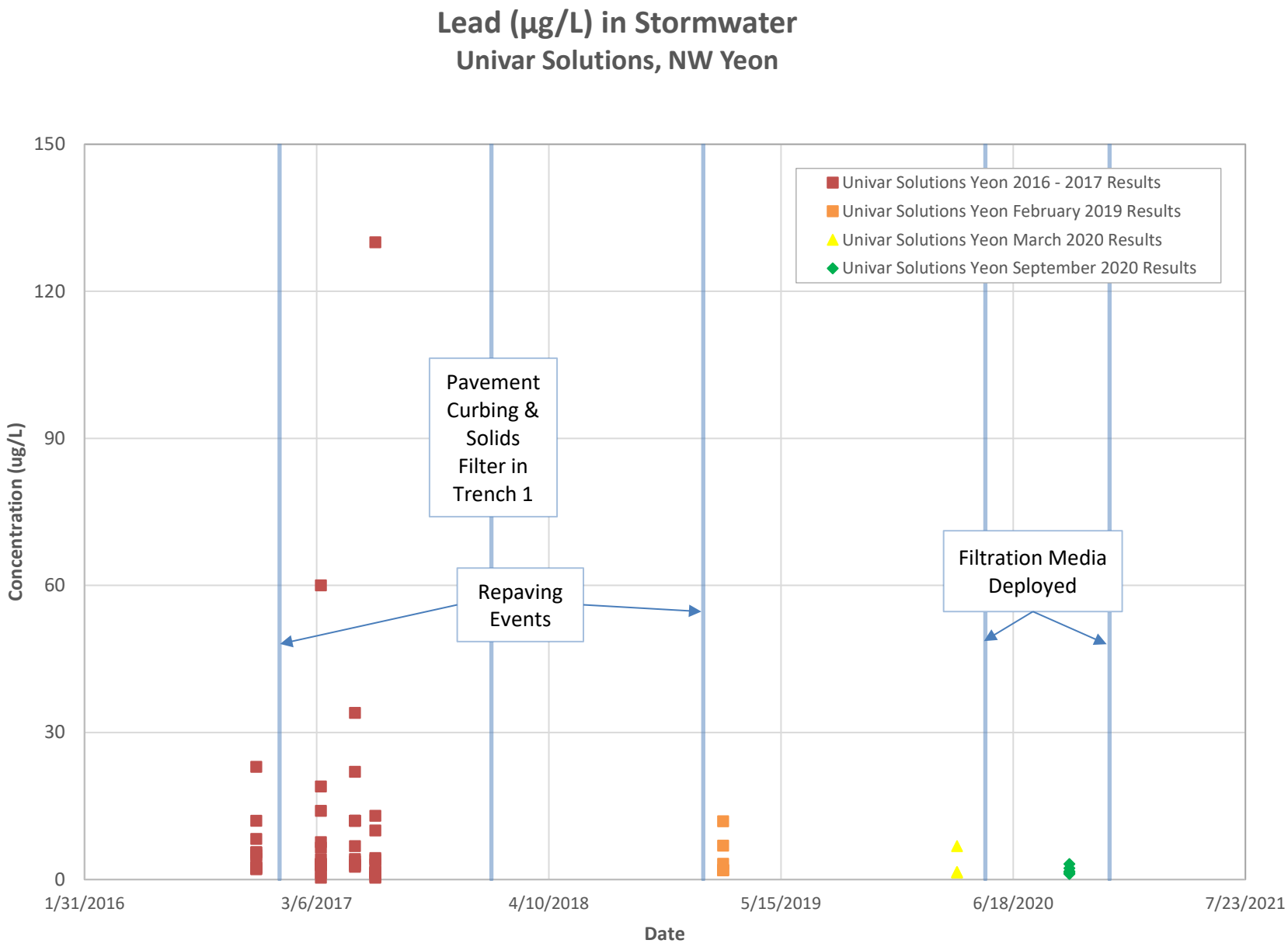
APPENDIX K STORMWATER TIMELINES

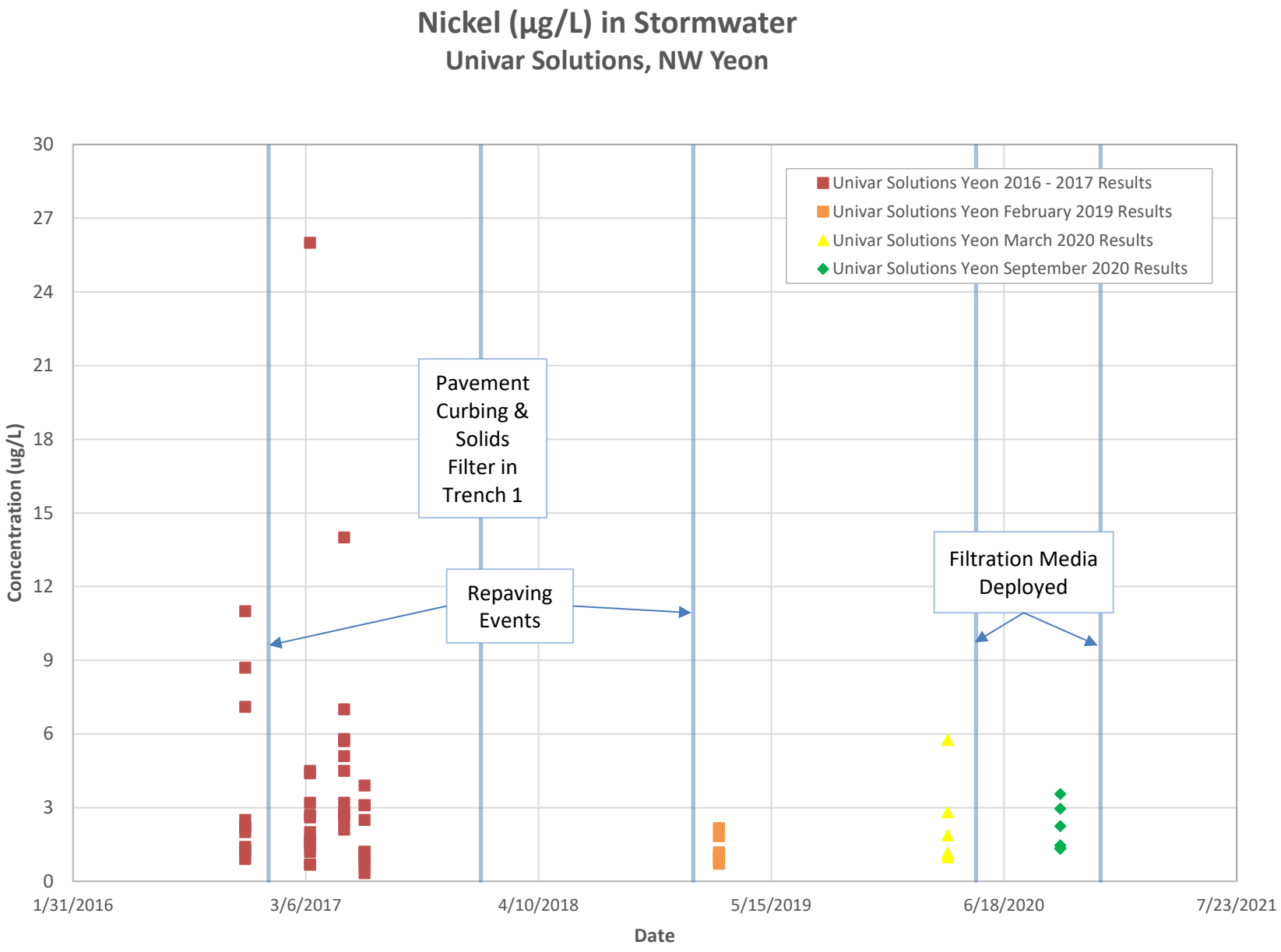

Arsenic (µg/L) in Stormwater
Univar Solutions, NW Yeon
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon February 2019 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Pavement Curbing & Solids Filter in Trench 1
Repaving Events
Filtration Media Deployed
Concentration (ug/L)
12
9
6
3
0
1/31/2016
3/6/2017
4/10/2018
5/15/2019
6/18/2020
7/23/2021
Date

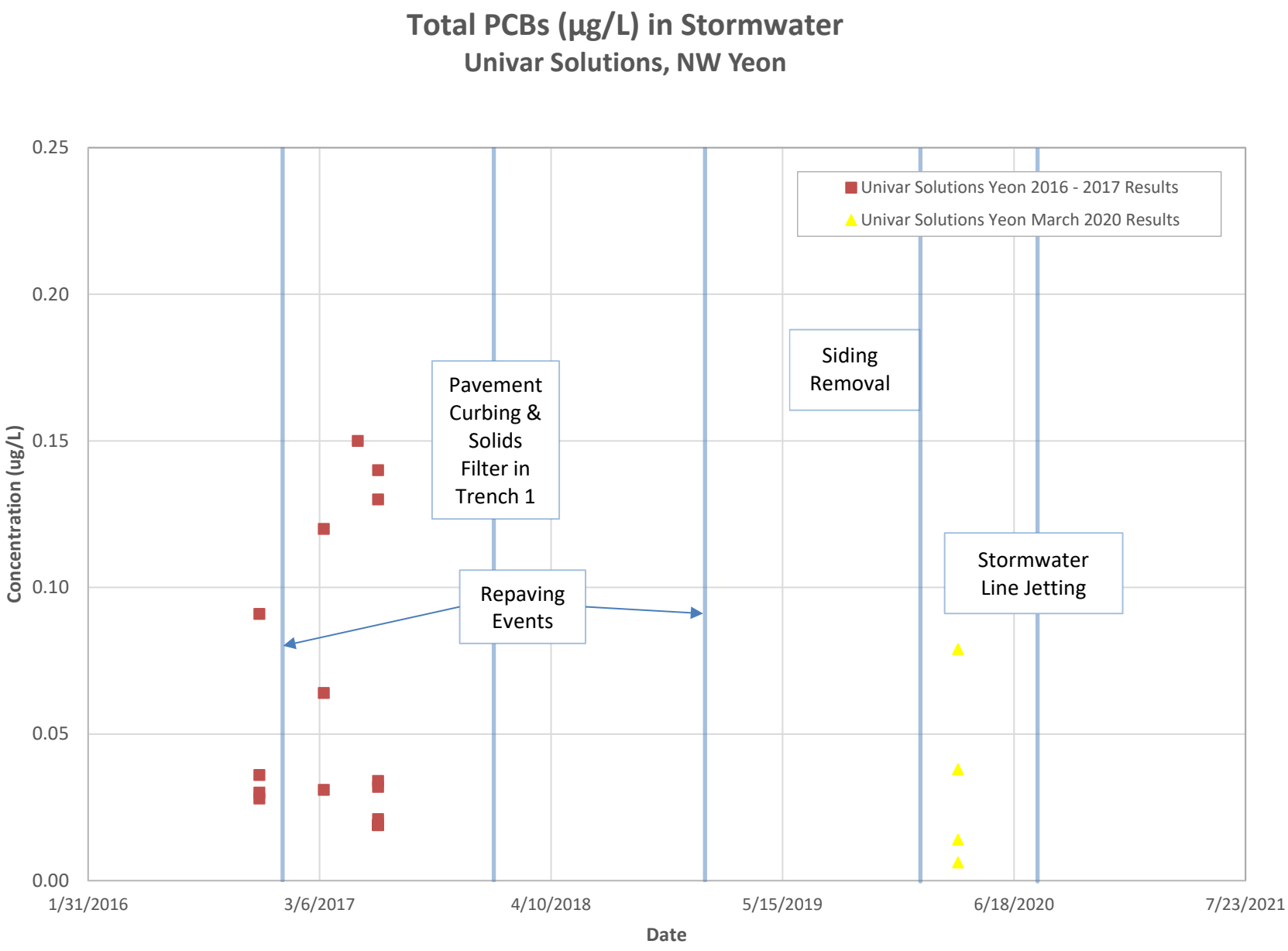

BEHP (µg/L) in Stormwater
Univar Solutions, NW Yeon
Concentration (ug/L)
4
3
2
1
0
1/31/2016
3/6/2017
4/10/2018
5/15/2019
6/18/2020
7/23/2021
Date
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon February 2019 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Pavement Curbing & Solids Filter in Trench 1
Repaving Events
Filtration Media Deployed

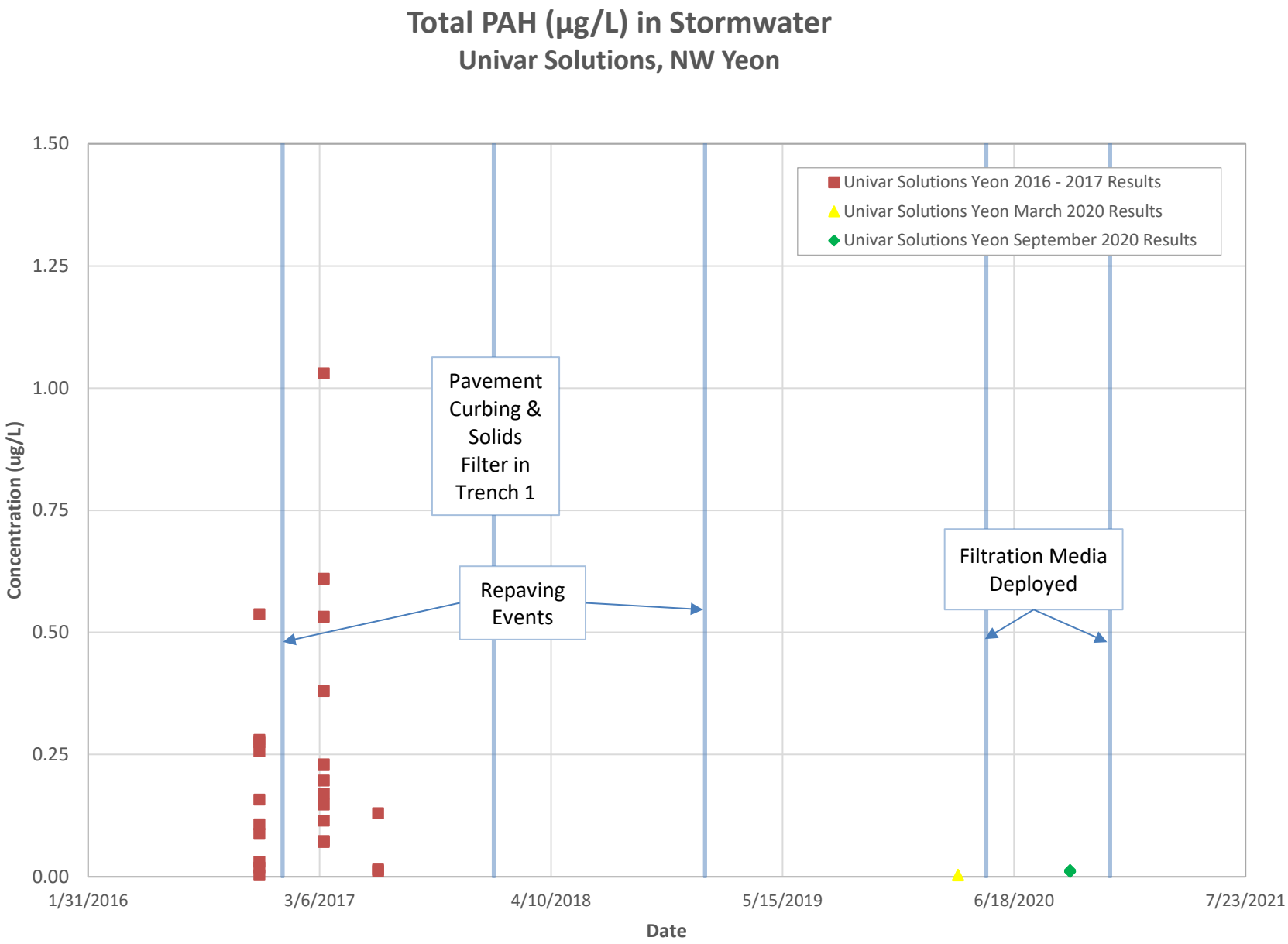

Cadmium (µg/L) in Stormwater
Univar Solutions, NW Yeon
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon February 2019 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Pavement Curbing & Solids Filter in Trench 1
Repaving Events
Filtration Media Deployed
Concentration (ug/L)
0
1
2
3
4
1/31/2016
3/6/2017
4/10/2018
5/15/2019
6/18/2020
7/23/2021
Date

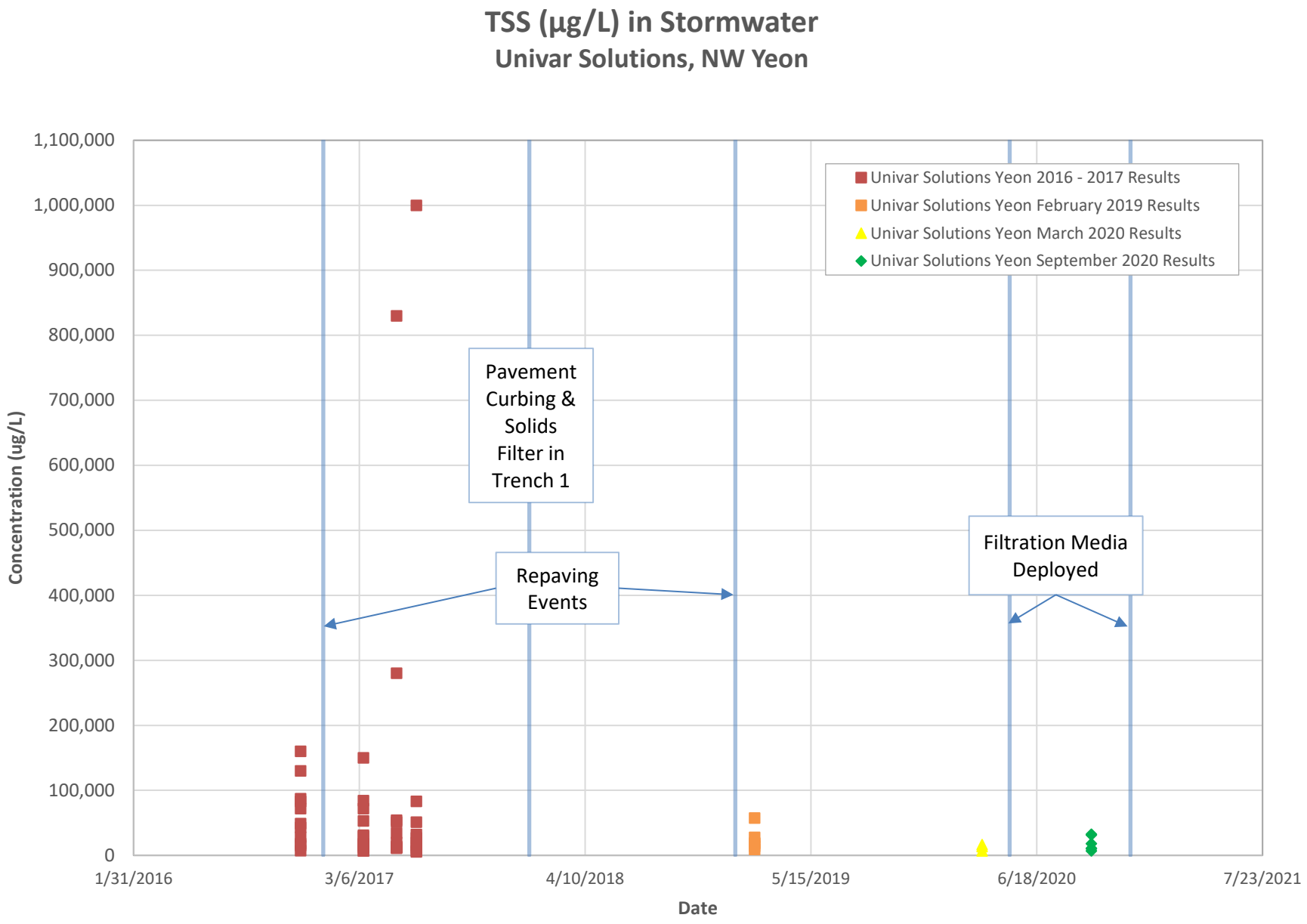

Copper (µg/L) in Stormwater
Univar Solutions, NW Yeon
Concentration (ug/L)
60
54
48
42
36
30
24
18
12
6
0
1/31/2016
3/6/2017
4/10/2018
5/15/2019
6/18/2020
7/23/2021
Date
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon February 2019 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Pavement Curbing & Solids Filter in Trench 1
Repaving Events
Filtration Media Deployed

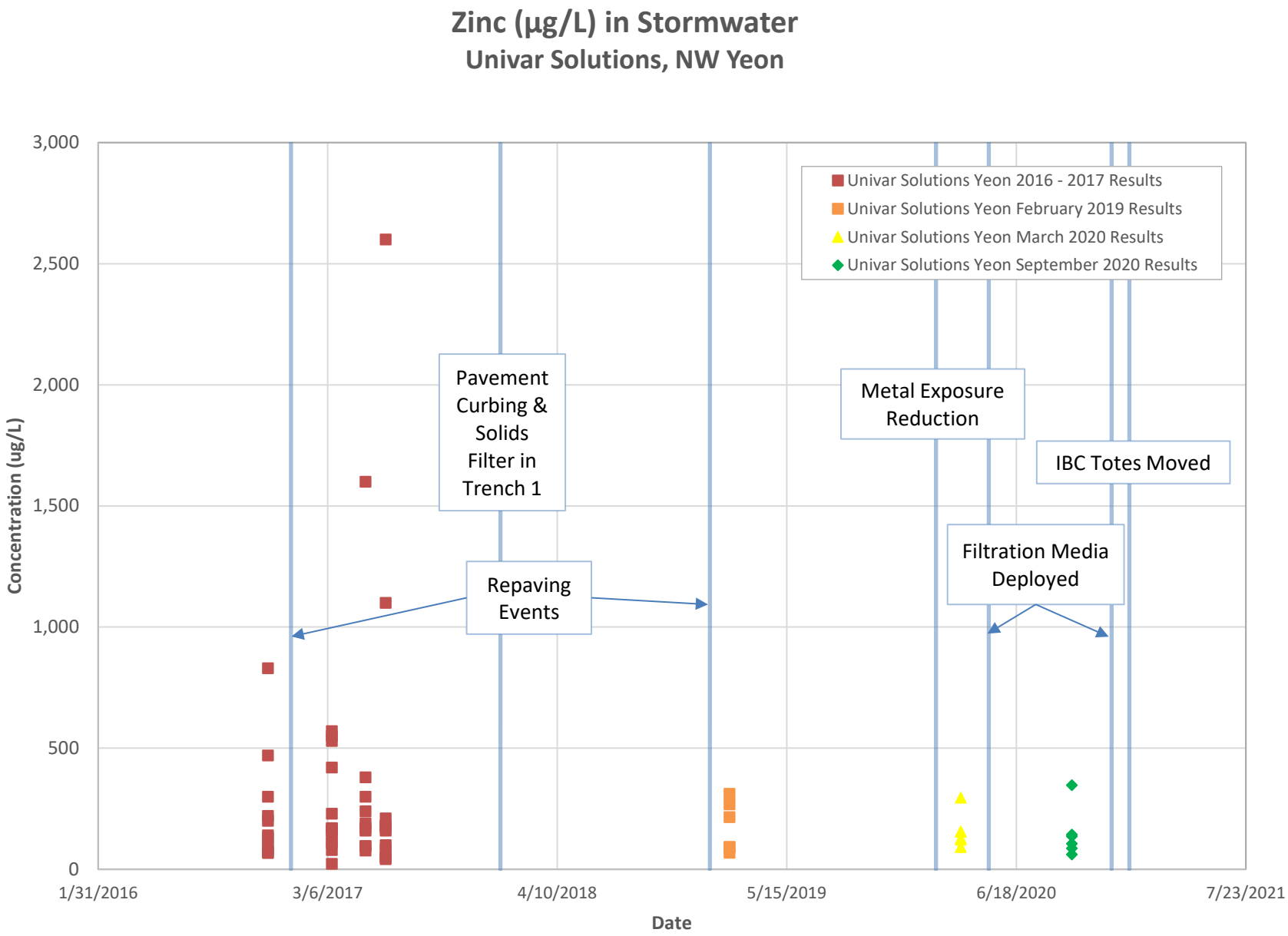

Lead (µg/L) in Stormwater
Univar Solutions, NW Yeon
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon February 2019 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Pavement Curbing & Solids Filter in Trench 1
Repaving Events
Filtration Media Deployed
Concentration (ug/L)
150
120
90
60
30
0
1/31/2016
3/6/2017
4/10/2018
5/15/2019
6/18/2020
7/23/2021
Date


Nickel (µg/L) in Stormwater
Univar Solutions, NW Yeon
Concentration (ug/L)
30
27
24
21
18
15
12
9
6
3
0
1/31/2016
3/6/2017
4/10/2018
5/15/2019
6/18/2020
7/23/2021
Date
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon February 2019 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Pavement Curbing & Solids Filter in Trench 1
Repaving Events
Filtration Media Deployed


Total PCBs (µg/L) in Stormwater
Univar Solutions, NW Yeon
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon March 2020 Results
Pavement Curbing & Solids Filter in Trench 1
Repaving Events
Siding Removal
Stormwater Line Jetting
Concentration (ug/L)
0.25
0.20
0.15
0.10
0.05
0.00
1/31/2016
3/6/2017
4/10/2018
5/15/2019
6/18/2020
7/23/2021
Date


Total PAH (µg/L) in Stormwater
Univar Solutions, NW Yeon
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Pavement Curbing & Solids Filter in Trench 1
Repaving Events
Filtration Media Deployed
Concentration (ug/L)
1.50
1.25
1.00
0.75
0.50
0.25
0.00
1/31/2016
3/6/2017
4/10/2018
5/15/2019
6/18/2020
7/23/2021
Date


TSS (µg/L) in Stormwater
Univar Solutions, NW Yeon
Concentration (ug/L)
1,100,000
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
1/31/2016
3/6/2017
4/10/2018
5/15/2019
6/18/2020
7/23/2021
Date
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon February 2019 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Pavement Curbing & Solids Filter in Trench 1
Repaving Events
Filtration Media Deployed


Zinc (µg/L) in Stormwater
Univar Solutions, NW Yeon
Concentration (ug/L)
3,000
2,500
2,000
1,500
1,000
500
0
1/31/2016
3/6/2017
4/10/2018
5/15/2019
6/18/2020
7/23/2021
Date
Univar Solutions Yeon 2016 - 2017 Results
Univar Solutions Yeon February 2019 Results
Univar Solutions Yeon March 2020 Results
Univar Solutions Yeon September 2020 Results
Pavement Curbing & Solids Filter in Trench 1
Repaving Events
Metal Exposure Reduction
IBC Totes Moved
Filtration Media Deployed

APPENDIX L OUTFALL 18 ANALYTICAL DATA

Table A-1. Basin Stormwater Data Summary

	Metals (µg/L)[1]									SVOCs (µg/L)[1]				
Basin	**As**	**Cd**	**Cr**	**Cu**	**Pb**	**Hg**	**Ni**	**Ag**	**Zn**	**BEHP**	**Total PAHs[2]**	**Total PCBs (µg/L)[1][2]**	**Data Source[3]**	**Notes**
Green: Significant sources not present in basin; basin not a significant current or future pathway														
10A	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	None	
11	NA	0.16	NA	7.30	2.85	0.04	NA	NA	32.2	1.09	0.710	0.00257	Tanner Creek WQ Char. Rpt	Geomean of 5 grab samples except for Cd, BEHP, PAHs, and PCBs (3 samples).
13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	None	
14	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	None	
19A	1.94	0.57	**11.6**	48.2	27.1	0.067	8.48	0.139	247	1.61	1.16	0.03188	OF Basin 19A Tech Memo	Geomean of 4 grab samples.
22D	0.43	0.14	2.58	5.35	3.05	0.007	1.47	0.1 U	35.4	1.32	0.30	0.0037	Stormwater Eval. Report	Geomean of 4 grab samples.
42	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	None	
44A	0.91	0.44	4.18	25.3	10.8	0.017	4.3	0.161	192	1.92	0.60	0.0091	OF Basin 44A Report	Geomean of 4 grab samples.
47	1.09	0.44	8.97	24.4	17.0	0.012	6.6	0.1 U	178	3.18	1.28	0.0097	Stormwater Eval. Report	Geomean of 4 grab samples.
48	0.50	0.1 U	0.76	7.72	1.65	0.005	5.31	0.1 U	26.1	1.27	0.15	0.0049	Stormwater Eval. Report	Geomean of 4 grab samples.
49	0.33	0.08	1.23	8.03	2.42	0.03 U	1.4	0.026	39.2	1.76	0.09	0.0014	Stormwater Eval. Report	Geomean of 4 composite samples for metals, BEHP and PAHs. For PCBs, geomean of 3 composite samples.
50	0.90	0.13	1.02	6.04	2.06	0.006	1.6	0.1 U	99.8	1.32	0.09	0.0051	Stormwater Eval. Report	Geomean of 4 grab samples.
52A	1.08	0.14	1.38	9.4	3.94	0.010	1.68	0.1 U	118	1.3	1.19	0.0080	Stormwater Eval. Report	Geomean of 4 grab samples.
M-2	1.89	0.32	2.17	13.9	4.25	0.009	2.53	0.16	129	0.88	0.18	0.0051	Stormwater Eval. Report	Geomean of 4 grab samples.
M-3	0.63	0.22	1.74	16.2	3.25	0.005	1.67	0.1 U	175	1.22	0.21	0.0032	Stormwater Eval. Report	Geomean of 4 grab samples.
S-2	0.52	0.27	2.83	14.5	2.58	0.005	1.9	0.1 U	248	2.08	0.16	0.0084	Stormwater Eval. Report	Geomean of 4 grab samples.
S-5	0.84	0.22	2.61	19.1	4.1	0.008	2.33	0.1 U	284	1.00	0.39	0.0037	Stormwater Eval. Report	Geomean of 3 grab samples.
Blue: Significant sources determined to be present in basin and referred to programs for control														
15	1.03	0.747	1.78	6.49	2.10	0.121 U	2.76	**0.796 U**	19.1	1.57	0.0663	0.033 U	Source Control Evaluation, Sulzer Pumps Facility	Geomean of 3 grab samples for As. Geomean of 5 grab samples for Cd, Hg, Ni, Ag, PCB Aroclors and BEHP. Geomean of 6 grab samples for Cr, Cu, Pb, Zn and PAHs.
16	0.60	0.65	6.1	**50.4**	26.9	0.046	5.27	0.068	183	NA	0.75	**0.134**	Stormwater Eval. Report	Geomean of 5 composite samples for metals and PAHs. For PCBs, geomean of 3 composite samples.
17	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	None	Basin stormwater data collection not feasible.
18	1.63	0.92	8.02	28.5	37.0	0.040	6.77	0.075	245	**4.3**	0.49	0.0511	Stormwater Eval. Report	Geomean of 3 composite and one grab sample for PAHs, PCBs and BEHP. For metals, geomean of 4 composite samples.
19	1.27	0.32	5.56	18.3	18.8	0.034	4.58	0.087	204	**6.86**	0.49	0.0280	Stormwater Eval. Report	Geomean of 15 composite samples.
22	**3.24**	0.39	4.98	22.8	15.2	0.046	4.31	0.036	213	NA	1.25	0.0203	Stormwater Eval. Report	Geomean of 3 composite samples for metals. Geomean of 3 composite and one grab sample for PAHs, BEHP and PCBs.
22 - Post SCM	1.28	0.23	1.58	1.47	2.31	0.05 U	1.63	**2.3 U**	82.1	2.6	0.66	**0.21 U**	NW Doane Avenue Stormwater Evaluation Report	Geomean of 5 grab samples.
22B	**3.64**	**1.60**	7.36	31.4	**81.7**	0.185	7.94	0.175	293	NA	**1.96**	0.0829	Stormwater Eval. Report	Geomean of 4 composite samples for metals. Geomean of 4 composite and one grab sample for PAHs, BEHP and PCBs.
22B - Post SCM	1.6	0.40	3.0	12.9	11.3	0.05	4.1	0.07	141	3.9	0.22	0.0083	Stormwater Source Control Evaluation Report (Air Liquide Portland Facility)	Geomean of 2 grab samples.
22C	1.25	0.1 U	0.8	1.63	0.69	0.004	0.83	0.1 U	4.5	0.85	1.01	0.0025 U	Stormwater Eval. Report	Geomean of 4 grab samples.
43	1.01	0.56	3.19	18.6	8.93	0.011	2.97	0.1 U	118	1.51	0.43	0.016	OF Basin 43 Report	Geomean of 4 grab samples (Western Branch only).
43 - Post SCM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0603	OF Basins 43 and 44 Tech Memo	Geomean of 3 grab samples.
44	1.85	0.57	6.27	22	17.9	0.021	4.8	0.108 U	173	1.67	0.73	**0.249**	OF Basin 44 Report	PCB geomean of 6 stormwater grab events; other geomeans from 5 stormwater events.
44 - Post SCM	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0604	OF Basins 43 and 44 Tech Memo	Value is an arithmetic mean of the concentrations for samples from the three main incoming laterals into the sample location.
45	1.42	0.58	**15.2**	29.4	23.2	0.021	**11.8**	0.122	327	3.27	1.02	0.0227	Stormwater Eval. Report	Geomean of 4 grab samples.
52	0.94	0.18	2.11	32.8	5.04	0.011	3.15	0.1 U	147	2.41	0.34	0.0489	Stormwater Eval. Report	Geomean of 4 grab samples.
52C	0.28	0.20	4.68	9.6	18.1	0.055	1.79	0.033	58.9	1.7	0.52	0.045	Stormwater Eval. Report OF Basins 52C and 53 Report	Geomean of 4 composite samples. Note: value shown for PCBs reflect correction to data used in SW Eval. Report.
52D	1.38	0.69	**80.92**	35.3	25.2	0.05 U	6.93	**0.39 U**	225	**5.00**	1.13	0.062	Schnitzer Burgard Industrial Park Basin 21 Tech Memo	Geomean of 3 grab samples. Geomean for PCBs is congener data
53	0.77	0.28	5.88	17.0	28.8	0.030	3.48	0.081	109	5.8	0.73	0.0370	Stormwater Eval. Report	Geomean of 6 composite samples.
53A	**4.46**	0.36	**42.0**	23.1	16.2	0.033	5.82	0.128	459	1.04	0.65	0.0373	Stormwater Eval. Report	Geomean of 4 grab samples.
53A - Post SCM	0.69	0.14	**12**	7.97	4.24	0.0069	2.13	0.1 U	337	NA	NA	0.000278	OF Basin 53A Report	One stormwater grab sample at MH AAA170.
M-1	0.80	0.39	2.28	12.8	6.69	0.007	2.1	0.1 U	186	2.11	0.26	0.0249	Stormwater Eval. Report	Geomean of 4 grab samples.
S-1	0.88	0.36	3.01	34.0	9.84	0.013	3.82	0.1 U	354	1.8	**8.72**	0.0206	Stormwater Eval. Report	Geomean of 9 grab samples. Geomean for total PCBs is from 4 samples analyzed for PCB congeners and 5 samples analyzed for PCB Aroclors.
S-6	0.85	0.24	2.16	34.1	6.32	0.009	3.58	0.1 U	385	1.35	0.78	0.00496	Stormwater Eval. Report	Geomean of 4 grab samples.
Comparison Values (values selected for Weight-of-Evidence evaluation are highlighted)														
DEQ Background	2	<1	1	9	13.3	<.1	5.5	<1	38	--	--	--		From DEQ Human Health Risk Assessment Guidance, Table 1, October 2010
JSCS SLV	0.045	0.094	100	2.7	0.54	0.77	16	0.12	36	2.2	--	0.000064		DEQ/EPA Portland Harbor Joint Source Control Strategy Table 3-1. Dec. 2005, amended July 16, 2007.
Current NPDES Benchmark	--	--	--	20	40	--	--	--	120	--	--	--		DEQ NPDES General Permit 1200-Z for Stornwater Discharge. Effective July 1, 2012.
Former NPDES Benchmark	--	--	--	100	400	--	--	--	600	--	--	--		DEQ NPDES General Permit 1200-Z for Stornwater Discharge. Effective July 1, 2007.
Approx. Knee of DEQ Curve	**2.0**	**1.0**	**10.0**	**50.0**	**40.0**	**0.2**	**10.0**	**0.2**	**500.0**	**4.0**	**1.5**	**0.1**		DEQ Guidance for Evaluating the Stormwater Pathway at Upland Sites, 2009 (amended 2010).

Refers to Figure 3-5 of the Municipal Stormwater Source Control Report for Portland Harbor. City of Portland, Bureau of Environmental Services (BES). December 2013.
Refers to Figure 3-5 of the Municipal Stormwater Source Control Report for Portland Harbor (BES, December 2013).
Indicates geomean exceeds selected comparison value.
bold Indicates geomean is above the approximate knee of respective DEQ guidance curve.

Notes:

U= undetected -- = not available
NA= not analyzed < = less than

(1) For the purpose of calculating the geomean concentrations, non-detect results are set to the value of the MRL, except as noted in Note 2. Duplicate samples from a single storm event were first averaged (each duplicate sample averaged together with its corresponding primary sample), and the average concentration was then included as a single value in the basin geomean calculations.

(2) Total PCB and total PAH geomean concentrations for results including one or more detections of an individual constituent were calculated by assigning a value of zero to non-detected concentrations. For results in which no individual constituents were detected, the total concentration is reported as the highest MRL among the individual constituents.

(3) Additional reference information provided below as needed, in order of appearance.

Sources:

Outfall Basin 19A Stormwater and Solids Investigation. Technical Memorandum No. OF 19A-1. BES. November 22, 2011.
Stormwater Evaluation Report. BES. February 2010.
Outfall Basin 44A Source Investigation Report. BES. March 2011.
Source Control Evaluation, Sulzer Pumps Facility. Prepared for Sulzer Pumps (US) Inc by GeoDesign, Inc. June 1, 2012.
NW Doane Avenue Stormwater Evaluation Report. Prepared for the Chevron Environmental Management Company by ARCADIS. January 2012.
Stormwater Source Control Evaluation Report. Portland Facility (ECSI #395). Prepared for Air Liquide America Specialty Gases LLC by CH2M HILL. December 2012.
Outfall Basin 43 Source Investigation Report. BES. December 2011.
Outfall Basins 43 and 44 Stormwater Investigations. Technical Memorandum No. OF43/44-1. BES. October 2012.
Outfall Basins 52C and 53 North Lombard Street PCB Source Investigation Report. BES. September 2012.
Outfall Basin 44 Source Investigation Report. BES. June 2011.
Basin 21 Storm Water and Storm Water Solids Sampling and Analysis Data. March/April Sampling Events. Source Control Evaluation. Burgard Industrial Park. Bridgewater Group, Inc. June 6, 2014.
Outfall Basin 53A Source Investigation Report. BES. May 2012.

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