example of proposed revisions

QAPP Worksheet #12-11
Measurement Performance Criteria (SVOCs - Soil)

Matrix: Soil
Analytical Group: SVOCs
Concentration Level: All

SAMPLING PROCEDURE[1]	ANALYTICAL METHOD/SOP[2]	DATA QUALITY INDICATORS (DQIs)	MEASUREMENT PERFORMANCE CRITERIA[3]	QC SAMPLE AND/OR ACTIVITY USED TO ASSESS MEASUREMENT PERFORMANCE	QC SAMPLE ASSESSES ERROR FOR SAMPLING(S), ANALYTICAL(A), OR BOTH (S&A)
F-5, F-6	~~WATS~~, C-20, A-11	Precision-Overall	RPD < 100%	Field duplicate	S&A
	remove WATS SOP reference	Accuracy/Bias Contamination	< RL	Blanks (field, equipment, method)	S&A
		Accuracy/Bias	%R, Laboratory-generated limits[(*)]	LCS	A
		Accuracy/Bias	%R, Laboratory-generated limits[(*)]	MS[4]	A
		Accuracy/Bias	%R, Laboratory-generated limits[(*)]	MSD or LCSD[4]	A
		Precision	%RPD laboratory-generated limits[3][(*)]	MS/MSD or LCS/LCSD[4]	A
		Accuracy/Bias	%R, Laboratory-generated limits[(*)]	Surrogates	A
		Accuracy/Bias	+100%, -50% of ICAL	Internal standards	A
		Accuracy/Bias	Established mass limits	DFTPP Tuning	A

Footnotes:

(1) Reference number from QAPP Worksheet #21. See the project-specific Field Sampling Plan for sampling procedures.

(2) Reference number from QAPP Worksheet #23.

(3) Measurement performance criteria listed are current criteria at the time this document was created, but are subject to change as control limits are updated.

(4) MS and MSD must be client-provided. LCS/LCSD performed when no MS/MSD is supplied.

(*) See Attachments ~~1-1, 1-2~~ and 1-7. (Tables 7-4 and 7-8)

RPD = relative percent difference.

remove reference to WATS

Table 7-4

ALS - Kelso Laboratories (Formerly CAS)
Laboratory Accuracy and Precision Objectives
for SVOCs in Groundwater and Soil
Multi-Area QAPP
Weyerhaeuser Company
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site

								LCS[1]		MS/MSD[1]			Surrogate Recovery[1]	
SOP ID	Method	Matrix	Analyte	Type	MDL[1]	RL	Units	LCL	UCL	LCL	UCL	%RPD	LCL	UCL
C-20	8270D/3520C	Water	2,4,5-Trichlorophenol	A	0.38	10	µg/L	62	117	50	109	30	–	–
C-20	8270D/3520C	Water	2,4,6-Trichlorophenol	A	0.2	10	µg/L	63	117	59	104	30	–	–
C-20	8270D/3520C	Water	2,4-Dichlorophenol	A	0.3	10	µg/L	59	107	55	101	30	–	–
C-20	8270D/3520C	Water	2,4-Dimethylphenol	A	0.26	10	µg/L	32	100	13	122	30	–	–
C-20	8270D/3520C	Water	2,4-Dinitrotoluene	A	0.27	10	µg/L	61	126	54	119	30	–	–
C-20	8270D/3520C	Water	2-Chlorophenol	A	0.31	10	µg/L	59	101	43	103	30	–	–
C-20	8270D/3520C	Water	2-Methylnaphthalene	A	0.24	10	µg/L	57	106	49	99	30	–	–
C-20	8270D/3520C	Water	2-Methylphenol	A	0.33	10	µg/L	51	108	36	117	30	–	–
C-20	8270D/3520C	Water	2-Nitrophenol	A	0.37	10	µg/L	58	108	41	117	30	–	–
C-20	8270D/3520C	Water	3,3'-Dichlorobenzidine	A	0.27	25	µg/L	43	116	12	120	30	–	–
C-20	8270D/3520C	Water	2-Methyl-4,6-dinitrophenol	A	2.1	25	µg/L	51	127	52	118	30	–	–
C-20	8270D/3520C	Water	4-Chloro-3-methylphenol	A	0.49	10	µg/L	65	111	32	124	30	–	–
C-20	8270D/3520C	Water	4-Methylphenol	A	0.48	10	µg/L	47	118	47	118	30	–	–
C-20	8270D/3520C	Water	Acenaphthene	A	0.28	10	µg/L	61	110	37	119	30	–	–
C-20	8270D/3520C	Water	Acenaphthylene	A	0.24	10	µg/L	58	109	26	123	30	–	–
C-20	8270D/3520C	Water	Anthracene	A	0.61	10	µg/L	62	116	32	124	30	–	–
C-20	8270D/3520C	Water	Benz(a)anthracene	A	0.59	10	µg/L	69	113	31	132	30	–	–
C-20	8270D/3520C	Water	Benzo(a)pyrene	A	0.65	10	µg/L	57	124	24	131	30	–	–
C-20	8270D/3520C	Water	Benzo(b)fluoranthene	A	0.58	10	µg/L	66	117	30	136	30	–	–
C-20	8270D/3520C	Water	Benzo(g,h,i)perylene	A	0.81	10	µg/L	68	116	29	136	30	–	–
C-20	8270D/3520C	Water	Benzo(k)fluoranthene	A	0.83	10	µg/L	63	119	29	135	30	–	–
C-20	8270D/3520C	Water	Bis(2-chloroethyl) Ether	A	0.33	10	µg/L	56	104	36	112	30	–	–
C-20	8270D/3520C	Water	Bis(2-ethylhexyl) Phthalate	A	1.9	10	µg/L	64	122	10	197	30	–	–
C-20	8270D/3520C	Water	Butyl Benzyl Phthalate	A	0.47	10	µg/L	64	121	23	142	30	–	–
C-20	8270D/3520C	Water	Carbazole	A	0.36	10	µg/L	63	122	63	122	30	–	–
C-20	8270D/3520C	Water	Chrysene	A	0.79	10	µg/L	68	114	31	129	30	–	–
C-20	8270D/3520C	Water	Dibenz(a,h)anthracene	A	0.75	10	µg/L	65	121	66	109	30	–	–
C-20	8270D/3520C	Water	Dibenzofuran	A	0.33	10	µg/L	62	112	39	119	30	–	–
C-20	8270D/3520C	Water	Diethyl Phthalate	A	0.29	10	µg/L	55	119	44	132	30	–	–
C-20	8270D/3520C	Water	Dimethyl Phthalate	A	0.25	10	µg/L	64	119	57	115	30	–	–
C-20	8270D/3520C	Water	Di-n-butyl Phthalate	A	0.65	10	µg/L	65	126	31	142	30	–	–
C-20	8270D/3520C	Water	Di-n-octyl Phthalate	A	0.63	10	µg/L	60	131	32	142	30	–	–

Table 7-4

ALS - Kelso Laboratories (Formerly CAS)
Laboratory Accuracy and Precision Objectives
for SVOCs in Groundwater and Soil
Multi-Area QAPP
Weyerhaeuser Company
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site

								LCS[1]		MS/MSD[1]			Surrogate Recovery[1]	
SOP ID	Method	Matrix	Analyte	Type	MDL[1]	RL	Units	LCL	UCL	LCL	UCL	%RPD	LCL	UCL
C-20	8270D/3520C	Water	Fluoranthene	A	0.65	10	µg/L	52	128	31	136	30	–	–
C-20	8270D/3520C	Water	Fluorene	A	0.32	10	µg/L	59	112	37	121	30	–	–
C-20	8270D/3520C	Water	Hexachlorobenzene	A	0.63	10	µg/L	63	117	26	134	30	–	–
C-20	8270D/3520C	Water	Hexachlorobutadiene	A	0.29	10	µg/L	47	106	25	108	30	–	–
C-20	8270D/3520C	Water	Hexachlorocyclopentadiene	A	1.2	10	µg/L	10	60	10	73	30	–	–
C-20	8270D/3520C	Water	Hexachloroethane	A	0.29	10	µg/L	50	100	37	93	30	–	–
C-20	8270D/3520C	Water	Indeno(1,2,3-cd)pyrene	A	0.68	10	µg/L	68	116	28	137	30	–	–
C-20	8270D/3520C	Water	Isophorone	A	0.25	10	µg/L	57	106	51	104	30	–	–
C-20	8270D/3520C	Water	Naphthalene	A	0.37	10	µg/L	60	98	44	100	30	–	–
C-20	8270D/3520C	Water	Nitrobenzene	A	0.57	10	µg/L	56	108	36	128	30	–	–
C-20	8270D/3520C	Water	N-Nitrosodi-n-propylamine	A	0.5	10	µg/L	56	112	46	112	30	–	–
C-20	8270D/3520C	Water	N-Nitrosodiphenylamine	A	0.48	10	µg/L	58	121	10	136	30	–	–
C-20	8270D/3520C	Water	Pentachlorophenol	A	2.4	25	µg/L	51	123	43	132	30	–	–
C-20	8270D/3520C	Water	Phenanthrene	A	0.48	10	µg/L	64	111	36	128	30	–	–
C-20	8270D/3520C	Water	Phenol	A	0.32	10	µg/L	52	104	10	147	30	–	–
C-20	8270D/3520C	Water	Pyrene	A	0.73	10	µg/L	53	124	19	138	30	–	–
C-20	8270D/3520C	Water	2,4,6-Tribromophenol	S	NA	NA	µg/L	–	–	–	–	–	46	127
C-20	8270D/3520C	Water	2-Fluorobiphenyl	S	NA	NA	µg/L	–	–	–	–	–	48	114
C-20	8270D/3520C	Water	2-Fluorophenol	S	NA	NA	µg/L	–	–	–	–	–	39	103
C-20	8270D/3520C	Water	Nitrobenzene-d5	S	NA	NA	µg/L	–	–	–	–	–	46	115
C-20	8270D/3520C	Water	Phenol-d6	S	NA	NA	µg/L	–	–	–	–	–	38	107
C-20	8270D/3520C	Water	Terphenyl-d14	S	NA	NA	µg/L	–	–	–	–	–	32	149
C-20	8270D/3541	Soil	2,4,5-Trichlorophenol	A	18	330	µg/Kg	46	103	27	115	40	–	–
C-20	8270D/3541	Soil	2,4,6-Trichlorophenol	A	14	330	µg/Kg	46	101	39	106	40	–	–
C-20	8270D/3541	Soil	2,4-Dichlorophenol	A	16	330	µg/Kg	43	94	29	106	40	–	–
C-20	8270D/3541	Soil	2,4-Dimethylphenol	A	15	330	µg/Kg	29	93	10	117	40	–	–
C-20	8270D/3541	Soil	2,4-Dinitrotoluene	A	15	330	µg/Kg	48	119	36	127	40	–	–
C-20	8270D/3541	Soil	2-Chlorophenol	A	9.9	330	µg/Kg	43	93	27	96	40	–	–
C-20	8270D/3541	Soil	2-Methylnaphthalene	A	11	330	µg/Kg	44	95	30	105	40	–	–
C-20	8270D/3541	Soil	2-Methylphenol	A	17	330	µg/Kg	44	96	14	103	40	–	–
C-20	8270D/3541	Soil	2-Nitrophenol	A	14	330	µg/Kg	44	95	31	102	40	–	–

Table 7-4

ALS - Kelso Laboratories (Formerly CAS)
Laboratory Accuracy and Precision Objectives
for SVOCs in Groundwater and Soil
Multi-Area QAPP
Weyerhaeuser Company
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site

								LCS[1]		MS/MSD[1]			Surrogate Recovery[1]	
SOP ID	Method	Matrix	Analyte	Type	MDL[1]	RL	Units	LCL	UCL	LCL	UCL	%RPD	LCL	UCL
C-20	8270D/3541	Soil	3,3'-Dichlorobenzidine	A	27	330	µg/Kg	50	112	10	120	40	–	–
C-20	8270D/3541	Soil	2-Methyl-4,6-dinitrophenol	A	140	2000	µg/Kg	41	119	10	138	40	–	–
C-20	8270D/3541	Soil	4-Chloro-3-methylphenol	A	17	330	µg/Kg	44	101	34	100	40	–	–
C-20	8270D/3541	Soil	4-Methylphenol	A	17	330	µg/Kg	38	94	26	97	40	–	–
C-20	8270D/3541	Soil	Acenaphthene	A	13	330	µg/Kg	49	97	30	113	40	–	–
C-20	8270D/3541	Soil	Acenaphthylene	A	16	330	µg/Kg	48	105	46	108	40	–	–
C-20	8270D/3541	Soil	Anthracene	A	14	330	µg/Kg	53	106	48	111	40	–	–
C-20	8270D/3541	Soil	Benz(a)anthracene	A	12	330	µg/Kg	54	109	47	114	40	–	–
C-20	8270D/3541	Soil	Benzo(a)pyrene	A	20	330	µg/Kg	51	114	31	122	40	–	–
C-20	8270D/3541	Soil	Benzo(b)fluoranthene	A	17	330	µg/Kg	53	110	33	124	40	–	–
C-20	8270D/3541	Soil	Benzo(g,h,i)perylene	A	20	330	µg/Kg	50	110	26	126	40	–	–
C-20	8270D/3541	Soil	Benzo(k)fluoranthene	A	19	330	µg/Kg	52	112	36	117	40	–	–
C-20	8270D/3541	Soil	Bis(2-chloroethyl) Ether	A	12	330	µg/Kg	42	97	29	103	40	–	–
C-20	8270D/3541	Soil	Bis(2-ethylhexyl) Phthalate	A	19	330	µg/Kg	51	115	35	126	40	–	–
C-20	8270D/3541	Soil	Butyl Benzyl Phthalate	A	16	330	µg/Kg	53	114	36	129	40	–	–
C-20	8270D/3541	Soil	Carbazole	A	11	330	µg/Kg	52	113	29	127	40	–	–
C-20	8270D/3541	Soil	Chrysene	A	12	330	µg/Kg	53	109	33	121	40	–	–
C-20	8270D/3541	Soil	Dibenz(a,h)anthracene	A	27	330	µg/Kg	53	114	30	127	40	–	–
C-20	8270D/3541	Soil	Dibenzofuran	A	12	330	µg/Kg	47	101	35	112	40	–	–
C-20	8270D/3541	Soil	Diethyl Phthalate	A	14	330	µg/Kg	45	121	23	131	40	–	–
C-20	8270D/3541	Soil	Dimethyl Phthalate	A	16	330	µg/Kg	48	113	28	124	40	–	–
C-20	8270D/3541	Soil	Di-n-butyl Phthalate	A	12	330	µg/Kg	52	117	28	144	30	–	–
C-20	8270D/3541	Soil	Di-n-octyl Phthalate	A	24	330	µg/Kg	51	121	36	136	40	–	–
C-20	8270D/3541	Soil	Fluoranthene	A	11	330	µg/Kg	47	117	34	142	40	–	–
C-20	8270D/3541	Soil	Fluorene	A	13	330	µg/Kg	46	103	31	116	40	–	–
C-20	8270D/3541	Soil	Hexachlorobenzene	A	15	330	µg/Kg	50	109	37	119	40	–	–
C-20	8270D/3541	Soil	Hexachlorobutadiene	A	14	330	µg/Kg	42	99	27	107	40	–	–
C-20	8270D/3541	Soil	Hexachlorocyclopentadiene	A	12	330	µg/Kg	10	68	10	79	40	–	–
C-20	8270D/3541	Soil	Hexachloroethane	A	22	330	µg/Kg	40	96	25	102	40	–	–
C-20	8270D/3541	Soil	Indeno(1,2,3-cd)pyrene	A	39	330	µg/Kg	53	112	29	132	40	–	–
C-20	8270D/3541	Soil	Isophorone	A	14	330	µg/Kg	42	93	33	103	40	–	–
C-20	8270D/3541	Soil	Naphthalene	A	14	330	µg/Kg	44	92	31	103	40	–	–

Table 7-4

ALS - Kelso Laboratories (Formerly CAS)
Laboratory Accuracy and Precision Objectives
for SVOCs in Groundwater and Soil
Multi-Area QAPP
Weyerhaeuser Company
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site

								LCS[1]		MS/MSD[1]			Surrogate Recovery[1]	
SOP ID	Method	Matrix	Analyte	Type	MDL[1]	RL	Units	LCL	UCL	LCL	UCL	%RPD	LCL	UCL
C-20	8270D/3541	Soil	Nitrobenzene	A	26	330	µg/Kg	46	99	34	99	40	–	–
C-20	8270D/3541	Soil	N-Nitrosodi-n-propylamine	A	19	330	µg/Kg	46	103	32	107	40	–	–
C-20	8270D/3541	Soil	N-Nitrosodiphenylamine	A	18	330	µg/Kg	44	113	35	112	40	–	–
C-20	8270D/3541	Soil	Pentachlorophenol	A	130	2000	µg/Kg	44	109	10	135	40	–	–
C-20	8270D/3541	Soil	Phenanthrene	A	10	330	µg/Kg	52	108	35	119	40	–	–
C-20	8270D/3541	Soil	Phenol	A	19	330	µg/Kg	40	87	18	106	40	–	–
C-20	8270D/3541	Soil	Pyrene	A	14	330	µg/Kg	53	124	26	130	40	–	–
C-20	8270D/3541	Soil	2,4,6-Tribromophenol	S	NA	NA	µg/Kg	–	–	–	–	–	20	123
C-20	8270D/3541	Soil	2-Fluorobiphenyl	S	NA	NA	µg/Kg	–	–	–	–	–	32	104
C-20	8270D/3541	Soil	2-Fluorophenol	S	NA	NA	µg/Kg	–	–	–	–	–	20	83
C-20	8270D/3541	Soil	Nitrobenzene-d5	S	NA	NA	µg/Kg	–	–	–	–	–	29	116
C-20	8270D/3541	Soil	Phenol-d6	S	NA	NA	µg/Kg	–	–	–	–	–	26	106
C-20	8270D/3541	Soil	Terphenyl-d14	S	NA	NA	µg/Kg	–	–	–	–	–	37	133

Notes:
[1] The laboratory MDLs and control limits provided are revised periodically by the laboratory. The MDLs and control limits used to evaluate data will be the current limits at the time of analysis as provided in laboratory data reports.

MDL - Method Detection Limit
RL - Report Limit
NA - Not Applicable
LCS - Laboratory Control Sample
MS/MSD - Matrix Spike/Matrix Spike Duplicate
RPD - Relative Percent Difference
LCL - Lower Control Limit (percent recovery)
UCL - Upper Control Limit (percent recovery)
A - Analyte
S - Surrogate

Table 7-8

ALS - Holland Laboratories
Laboratory Accuracy and Precision Objectives
for SVOCs in Groundwater and Soil
Multi-Area QAPP
Weyerhaeuser Company
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site

								LCS[1]		MS/MSD[1]			Surrogate Recovery[1]	
SOP ID	Method	Matrix	Analyte	Type	MDL[1]	RL	Units	LCL	UCL	LCL	UCL	%RPD	LCL	UCL
A-10,11	SW8270	Water	2,4,5-Trichlorophenol	A	0.11	5	µg/L	50	110	50	110	30	–	–
A-10,11	SW8270	Water	2,4,6-Trichlorophenol	A	0.1	5	µg/L	50	115	50	115	30	–	–
A-10,11	SW8270	Water	2,4-Dichlorophenol	A	0.21	10	µg/L	50	105	50	105	30	–	–
A-10,11	SW8270	Water	2,4-Dimethylphenol	A	0.24	5	µg/L	30	110	30	110	30	–	–
A-10,11	SW8270	Water	2,4-Dinitrotoluene	A	0.78	5	µg/L	50	120	50	120	30	–	–
A-10,11	SW8270	Water	2-Chlorophenol	A	0.72	5	µg/L	35	105	35	105	30	–	–
A-10,11	SW8270	Water	2-Methylnaphthalene	A	0.12	5	µg/L	45	105	45	105	30	–	–
A-10,11	SW8270	Water	2-Methylphenol	A	0.6	5	µg/L	40	110	40	110	30	–	–
A-10,11	SW8270	Water	2-Nitrophenol	A	0.18	5	µg/L	40	115	40	115	30	–	–
A-10,11	SW8270	Water	3,3'-Dichlorobenzidine	A	0.53	5	µg/L	**	**	**	**	**	–	–
A-10,11	SW8270	Water	4,6-Dinitro-2-methylphenol	A	0.34	20	µg/L	40	130	40	130	30	–	–
A-10,11	SW8270	Water	4-Chloro-3-methylphenol	A	0.64	5	µg/L	45	110	45	110	30	–	–
A-10,11	SW8270	Water	4-Methylphenol	A	0.55	5	µg/L	30	110	30	110	30	–	–
A-10,11	SW8270	Water	Acenaphthene	A	0.11	5	µg/L	45	110	45	110	30	–	–
A-10,11	SW8270	Water	Acenaphthylene	A	0.12	5	µg/L	50	105	50	105	30	–	–
A-10,11	SW8270	Water	Anthracene	A	0.72	5	µg/L	55	110	55	110	30	–	–
A-10,11	SW8270	Water	Benzo(a)anthracene	A	0.57	5	µg/L	55	110	55	110	30	–	–
A-10,11	SW8270	Water	Benzo(a)pyrene	A	0.1	5	µg/L	55	110	55	110	30	–	–
A-10,11	SW8270	Water	Benzo(b)fluoranthene	A	0.73	5	µg/L	45	120	45	120	30	–	–
A-10,11	SW8270	Water	Benzo(g,h,i)perylene	A	0.7	5	µg/L	40	125	40	125	30	–	–
A-10,11	SW8270	Water	Benzo(k)fluoranthene	A	0.17	5	µg/L	45	125	45	125	30	–	–
A-10,11	SW8270	Water	Bis(2-chloroethyl)ether	A	0.11	5	µg/L	35	110	35	110	30	–	–
A-10,11	SW8270	Water	Bis(2-ethylhexyl)phthalate	A	0.11	5	µg/L	40	125	40	125	30	–	–
A-10,11	SW8270	Water	Butyl benzyl phthalate	A	0.1	5	µg/L	45	115	45	115	30	–	–
A-10,11	SW8270	Water	Carbazole	A	0.83	10	µg/L	50	150	50	150	30	–	–
A-10,11	SW8270	Water	Chrysene	A	0.71	5	µg/L	55	110	55	110	30	–	–
A-10,11	SW8270	Water	Dibenzo(a,h)anthracene	A	0.67	5	µg/L	40	125	40	125	30	–	–
A-10,11	SW8270	Water	Dibenzofuran	A	0.11	5	µg/L	55	105	55	105	30	–	–
A-10,11	SW8270	Water	Diethyl phthalate	A	0.68	20	µg/L	40	120	40	120	30	–	–
A-10,11	SW8270	Water	Dimethyl phthalate	A	0.13	20	µg/L	25	125	25	125	30	–	–
A-10,11	SW8270	Water	Di-n-butyl phthalate	A	0.71	5	µg/L	55	115	55	115	30	–	–
A-10,11	SW8270	Water	Di-n-octyl phthalate	A	0.12	5	µg/L	35	135	35	135	30	–	–

Table 7-8

ALS - Holland Laboratories
Laboratory Accuracy and Precision Objectives
for SVOCs in Groundwater and Soil
Multi-Area QAPP
Weyerhaeuser Company
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site

								LCS[1]		MS/MSD[1]			Surrogate Recovery[1]	
SOP ID	Method	Matrix	Analyte	Type	MDL[1]	RL	Units	LCL	UCL	LCL	UCL	%RPD	LCL	UCL
A-10,11	SW8270	Water	Fluoranthene	A	0.77	5	µg/L	55	115	55	115	30	–	–
A-10,11	SW8270	Water	Fluorene	A	0.1	5	µg/L	50	110	50	110	30	–	–
A-10,11	SW8270	Water	Hexachlorobenzene	A	0.1	5	µg/L	50	110	50	110	30	–	–
A-10,11	SW8270	Water	Hexachlorobutadiene	A	0.12	5	µg/L	25	105	25	105	30	–	–
A-10,11	SW8270	Water	Hexachlorocyclopentadiene	A	0.18	20	µg/L	25	105	25	105	30	–	–
A-10,11	SW8270	Water	Hexachloroethane	A	0.12	5	µg/L	30	95	30	95	30	–	–
A-10,11	SW8270	Water	Indeno(1,2,3-cd)pyrene	A	0.69	5	µg/L	45	125	45	125	30	–	–
A-10,11	SW8270	Water	Isophorone	A	0.11	5	µg/L	50	110	50	110	30	–	–
A-10,11	SW8270	Water	Naphthalene	A	0.12	5	µg/L	40	100	40	100	30	–	–
A-10,11	SW8270	Water	Nitrobenzene	A	0.1	5	µg/L	45	110	45	110	30	–	–
A-10,11	SW8270	Water	N-Nitrosodi-n-propylamine	A	0.13	5	µg/L	35	130	35	130	30	–	–
A-10,11	SW8270	Water	N-Nitrosodiphenylamine	A	0.81	5	µg/L	50	110	50	110	30	–	–
A-10,11	SW8270	Water	Pentachlorophenol	A	0.11	20	µg/L	40	115	40	115	30	–	–
A-10,11	SW8270	Water	Phenanthrene	A	0.86	5	µg/L	50	115	50	115	30	–	–
A-10,11	SW8270	Water	Phenol	A	0.09	5	µg/L	12	43	12	43	30	–	–
A-10,11	SW8270	Water	Pyrene	A	0.65	5	µg/L	50	130	50	130	30	–	–
A-10,11	SW8270	Water	2,4,6-Tribromophenol	S	NA	NA	µg/L	–	–	–	–	–	38	115
A-10,11	SW8270	Water	2-Fluorobiphenyl	S	NA	NA	µg/L	–	–	–	–	–	32	100
A-10,11	SW8270	Water	2-Fluorophenol	S	NA	NA	µg/L	–	–	–	–	–	22	59
A-10,11	SW8270	Water	4-Terphenyl-d14	S	NA	NA	µg/L	–	–	–	–	–	23	112
A-10,11	SW8270	Water	Nitrobenzene-d5	S	NA	NA	µg/L	–	–	–	–	–	31	93
A-10,11	SW8270	Water	Phenol-d6	S	NA	NA	µg/L	–	–	–	–	–	13	36
A-16,11	SW8270	Soil	2,4,5-Trichlorophenol	A	7.97	160	µg/Kg	50	110	50	110	30	–	–
A-16,11	SW8270	Soil	2,4,6-Trichlorophenol	A	7.96	160	µg/Kg	45	110	45	110	30	–	–
A-16,11	SW8270	Soil	2,4-Dichlorophenol	A	9.71	160	µg/Kg	45	110	45	110	30	–	–
A-16,11	SW8270	Soil	2,4-Dimethylphenol	A	40.75	330	µg/Kg	30	105	30	105	30	–	–
A-16,11	SW8270	Soil	2,4-Dinitrotoluene	A	8.93	160	µg/Kg	50	115	50	115	30	–	–
A-16,11	SW8270	Soil	2-Chlorophenol	A	8.95	160	µg/Kg	45	105	45	105	30	–	–
A-16,11	SW8270	Soil	2-Methylnaphthalene	A	9.82	80	µg/Kg	45	105	45	105	30	–	–
A-16,11	SW8270	Soil	2-Methylphenol	A	9.62	160	µg/Kg	40	105	40	105	30	–	–
A-16,11	SW8270	Soil	2-Nitrophenol	A	8.7	160	µg/Kg	40	110	40	110	30	–	–

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Multi-Area QAPP
Weyerhaeuser Company
Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site

								LCS[1]		MS/MSD[1]			Surrogate Recovery[1]	
SOP ID	Method	Matrix	Analyte	Type	MDL[1]	RL	Units	LCL	UCL	LCL	UCL	%RPD	LCL	UCL
A-16,11	SW8270	Soil	3,3'-Dichlorobenzidine	A	9.33	660	µg/Kg	**	**	**	**	**	–	–
A-16,11	SW8270	Soil	4,6-Dinitro-2-methylphenol	A	48.1	330	µg/Kg	**	**	**	**	**	–	–
A-16,11	SW8270	Soil	4-Chloro-3-methylphenol	A	9.03	160	µg/Kg	45	115	45	115	30	–	–
A-16,11	SW8270	Soil	4-Methylphenol	A	9.81	160	µg/Kg	40	105	40	105	30	–	–
A-16,11	SW8270	Soil	Acenaphthene	A	9.12	30	µg/Kg	45	110	45	110	30	–	–
A-16,11	SW8270	Soil	Acenaphthylene	A	9.46	30	µg/Kg	45	105	45	105	30	–	–
A-16,11	SW8270	Soil	Anthracene	A	10.17	30	µg/Kg	55	105	55	105	30	–	–
A-16,11	SW8270	Soil	Benzo(a)anthracene	A	12.17	30	µg/Kg	50	110	50	110	30	–	–
A-16,11	SW8270	Soil	Benzo(a)pyrene	A	15.44	30	µg/Kg	50	110	50	110	30	–	–
A-16,11	SW8270	Soil	Benzo(b)fluoranthene	A	16.11	30	µg/Kg	45	115	45	115	30	–	–
A-16,11	SW8270	Soil	Benzo(g,h,i)perylene	A	23.54	30	µg/Kg	40	125	40	125	30	–	–
A-16,11	SW8270	Soil	Benzo(k)fluoranthene	A	13.6	30	µg/Kg	45	115	45	115	30	–	–
A-16,11	SW8270	Soil	Bis(2-chloroethyl)ether	A	8.33	160	µg/Kg	40	105	40	105	30	–	–
A-16,11	SW8270	Soil	Bis(2-ethylhexyl)phthalate	A	9.9	330	µg/Kg	45	125	45	125	30	–	–
A-16,11	SW8270	Soil	Butyl benzyl phthalate	A	13.83	160	µg/Kg	50	125	50	125	30	–	–
A-16,11	SW8270	Soil	Carbazole	A	11.4	160	µg/Kg	50	150	50	150	30	–	–
A-16,11	SW8270	Soil	Chrysene	A	11.31	30	µg/Kg	55	110	55	110	30	–	–
A-16,11	SW8270	Soil	Dibenzo(a,h)anthracene	A	17.06	30	µg/Kg	40	125	40	125	30	–	–
A-16,11	SW8270	Soil	Dibenzofuran	A	9.13	160	µg/Kg	50	105	50	105	30	–	–
A-16,11	SW8270	Soil	Diethyl phthalate	A	8.3	330	µg/Kg	50	115	50	115	30	–	–
A-16,11	SW8270	Soil	Dimethyl phthalate	A	8.33	330	µg/Kg	50	110	50	110	30	–	–
A-16,11	SW8270	Soil	Di-n-butyl phthalate	A	10.04	330	µg/Kg	55	110	55	110	30	–	–
A-16,11	SW8270	Soil	Di-n-octyl phthalate	A	12.31	160	µg/Kg	40	130	40	130	30	–	–
A-16,11	SW8270	Soil	Fluoranthene	A	11.89	30	µg/Kg	55	115	55	115	30	–	–
A-16,11	SW8270	Soil	Fluorene	A	8.74	30	µg/Kg	50	110	50	110	30	–	–
A-16,11	SW8270	Soil	Hexachlorobenzene	A	9.09	160	µg/Kg	45	120	45	120	30	–	–
A-16,11	SW8270	Soil	Hexachlorobutadiene	A	8.44	160	µg/Kg	40	115	40	115	30	–	–
A-16,11	SW8270	Soil	Hexachlorocyclopentadiene	A	34.89	330	µg/Kg	40	115	40	115	30	–	–
A-16,11	SW8270	Soil	Hexachloroethane	A	8.74	160	µg/Kg	35	110	35	110	30	–	–
A-16,11	SW8270	Soil	Indeno(1,2,3-cd)pyrene	A	18.93	30	µg/Kg	40	120	40	120	30	–	–
A-16,11	SW8270	Soil	Isophorone	A	8.67	160	µg/Kg	45	110	45	110	30	–	–
A-16,11	SW8270	Soil	Naphthalene	A	8.53	30	µg/Kg	40	105	40	105	30	–	–

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								LCS[1]		MS/MSD[1]			Surrogate Recovery[1]	
SOP ID	Method	Matrix	Analyte	Type	MDL[1]	RL	Units	LCL	UCL	LCL	UCL	%RPD	LCL	UCL
A-16,11	SW8270	Soil	Nitrobenzene	A	8.65	160	µg/Kg	40	115	40	115	30	–	–
A-16,11	SW8270	Soil	N-Nitrosodi-n-propylamine	A	8.74	160	µg/Kg	40	115	40	115	30	–	–
A-16,11	SW8270	Soil	N-Nitrosodiphenylamine	A	59.33	160	µg/Kg	50	115	50	115	30	–	–
A-16,11	SW8270	Soil	Pentachlorophenol	A	14.75	330	µg/Kg	25	120	25	120	30	–	–
A-16,11	SW8270	Soil	Phenanthrene	A	30	30	µg/Kg	50	110	50	110	30	–	–
A-16,11	SW8270	Soil	Phenol	A	8.46	160	µg/Kg	40	100	40	100	30	–	–
A-16,11	SW8270	Soil	Pyrene	A	12.47	30	µg/Kg	45	125	45	125	30	–	–
A-16,11	SW8270	Soil	2,4,6-Tribromophenol	S	NA	NA	µg/Kg	–	–	–	–	–	34	140
A-16,11	SW8270	Soil	2-Fluorobiphenyl	S	NA	NA	µg/Kg	–	–	–	–	–	12	100
A-16,11	SW8270	Soil	2-Fluorophenol	S	NA	NA	µg/Kg	–	–	–	–	–	33	117
A-16,11	SW8270	Soil	4-Terphenyl-d14	S	NA	NA	µg/Kg	–	–	–	–	–	25	137
A-16,11	SW8270	Soil	Nitrobenzene-d5	S	NA	NA	µg/Kg	–	–	–	–	–	37	107
A-16,11	SW8270	Soil	Phenol-d6	S	NA	NA	µg/Kg	–	–	–	–	–	40	106

Notes:
[1] The laboratory MDLs and control limits provided are revised periodically by the laboratory. The MDLs and control limits used to evaluate data will be the current limits at the time of analysis as provided in laboratory data reports.

MDL - Method Detection Limit
RL - Report Limit
NA - Not Applicable
LCS - Laboratory Control Sample
MS/MSD - Matrix Spike/Matrix Spike Duplicate
RPD - Relative Percent Difference
LCL - Lower Control Limit (percent recovery)
UCL - Upper Control Limit (percent recovery)
** - Compound not in spike mixture
A - Analyte
S - Surrogate