Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EB-16-5.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	306316-15
Date Analyzed:	07/10/13	Data File:	071028.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	80	50	150
Benzo(a)anthracene-d12	95	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.00036
Acenaphthylene	0.000096
Acenaphthene	0.00093
Fluorene	0.00064
Phenanthrene	0.0029
Anthracene	0.00051
Fluoranthene	0.0055
Pyrene	0.0065
Benz(a)anthracene	0.0022
Chrysene	0.0025
Benzo(a)pyrene	0.0017
Benzo(b)fluoranthene	0.0030
Benzo(k)fluoranthene	0.00088
Indeno(1,2,3-cd)pyrene	0.0010
Dibenz(a,h)anthracene	<0.00034
Benzo(g,h,i)perylene	0.00093

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EB-16-10.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	306316-17
Date Analyzed:	07/10/13	Data File:	071029.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	80	50	150
Benzo(a)anthracene-d12	91	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.00039
Acenaphthylene	<0.000091
Acenaphthene	0.00082
Fluorene	0.00074
Phenanthrene	0.0042
Anthracene	0.00068
Fluoranthene	0.0057
Pyrene	0.0066
Benz(a)anthracene	0.0020
Chrysene	0.0021
Benzo(a)pyrene	0.0014
Benzo(b)fluoranthene	0.0019
Benzo(k)fluoranthene	0.00065
Indeno(1,2,3-cd)pyrene	0.00077
Dibenz(a,h)anthracene	<0.00034
Benzo(g,h,i)perylene	0.00064

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EB-16-15.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	306316-19
Date Analyzed:	07/17/13	Data File:	071706.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	1 vo	50	150
Benzo(a)anthracene-d12	3 vo	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.00022
Acenaphthylene	<0.000091
Acenaphthene	0.00022
Fluorene	0.00026
Phenanthrene	0.0011
Anthracene	0.00015
Fluoranthene	0.0010
Pyrene	0.0011
Benz(a)anthracene	0.00046
Chrysene	0.00043
Benzo(a)pyrene	0.00037
Benzo(b)fluoranthene	0.00048
Benzo(k)fluoranthene	<0.00036
Indeno(1,2,3-cd)pyrene	<0.00062
Dibenz(a,h)anthracene	<0.00034
Benzo(g,h,i)perylene	<0.00034

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-10S-5.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	306316-26 1/2000
Date Analyzed:	07/11/13	Data File:	071117.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	1750 ds	50	150
Benzo(a)anthracene-d12	3020 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	18
Acenaphthylene	18
Acenaphthene	390 ve
Fluorene	160
Phenanthrene	430 ve
Anthracene	190 ve
Fluoranthene	1,200 ve
Pyrene	1,400 ve
Benz(a)anthracene	460 ve
Chrysene	440 ve
Benzo(a)pyrene	290 ve
Benzo(b)fluoranthene	430 ve
Benzo(k)fluoranthene	100
Indeno(1,2,3-cd)pyrene	170 ve
Dibenz(a,h)anthracene	44
Benzo(g,h,i)perylene	130

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-10S-5.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	306316-26 1/40000
Date Analyzed:	07/15/13	Data File:	071504.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	0 ds	50	150
Benzo(a)anthracene-d12	0 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	18
Acenaphthylene	13
Acenaphthene	440
Fluorene	180
Phenanthrene	480
Anthracene	190
Fluoranthene	1,500
Pyrene	1,700
Benz(a)anthracene	500
Chrysene	490
Benzo(a)pyrene	320
Benzo(b)fluoranthene	480
Benzo(k)fluoranthene	140
Indeno(1,2,3-cd)pyrene	140
Dibenz(a,h)anthracene	42
Benzo(g,h,i)perylene	140

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	03-1296 mb
Date Analyzed:	07/09/13	Data File:	070915.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	92	50	150
Benzo(a)anthracene-d12	105	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.00022
Acenaphthylene	<0.000091
Acenaphthene	<0.00014
Fluorene	<0.00015
Phenanthrene	<0.00032
Anthracene	<0.000088
Fluoranthene	<0.00028
Pyrene	<0.00026
Benz(a)anthracene	<0.00018
Chrysene	<0.00019
Benzo(a)pyrene	<0.00022
Benzo(b)fluoranthene	<0.00018
Benzo(k)fluoranthene	<0.00036
Indeno(1,2,3-cd)pyrene	<0.00062
Dibenz(a,h)anthracene	<0.00034
Benzo(g,h,i)perylene	<0.00034

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley 101.00205.00030
Date Extracted:	07/22/13	Lab ID:	03-1431 mb
Date Analyzed:	07/23/13	Data File:	072305.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	77	50	150
Benzo(a)anthracene-d12	105	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.00022
Acenaphthylene	<0.000091
Acenaphthene	<0.00014
Fluorene	<0.00015
Phenanthrene	<0.00032
Anthracene	<0.000088
Fluoranthene	<0.00028
Pyrene	<0.00026
Benz(a)anthracene	<0.00018
Chrysene	<0.00019
Benzo(a)pyrene	<0.00022
Benzo(b)fluoranthene	<0.00018
Benzo(k)fluoranthene	<0.00036
Indeno(1,2,3-cd)pyrene	<0.00062
Dibenz(a,h)anthracene	<0.00034
Benzo(g,h,i)perylene	<0.00034

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-10D-1.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	306316-01
Date Analyzed:	07/11/13	Data File:	36.D\ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	83	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.033
Aroclor 1232	<0.033
Aroclor 1016	<0.033
Aroclor 1242	<0.033
Aroclor 1248	<0.033
Aroclor 1254	<0.033
Aroclor 1260	<0.033

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-10D-5.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	306316-03 1/5
Date Analyzed:	07/11/13	Data File:	40.D\ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	78 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.17
Aroclor 1232	<0.17
Aroclor 1016	<0.17
Aroclor 1242	<0.17
Aroclor 1248	<0.17
Aroclor 1254	<0.17
Aroclor 1260	<0.17

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-10D-10.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	306316-05 1/100
Date Analyzed:	07/12/13	Data File:	40.D\ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	100 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<3.3
Aroclor 1232	<3.3
Aroclor 1016	<3.3
Aroclor 1242	<3.3
Aroclor 1248	<3.3
Aroclor 1254	<3.3
Aroclor 1260	<3.3

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-10D-15.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	306316-07 1/10
Date Analyzed:	07/12/13	Data File:	42.D\ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	135 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.33
Aroclor 1232	<0.33
Aroclor 1016	<0.33
Aroclor 1242	<0.33
Aroclor 1248	<0.33
Aroclor 1254	<0.33
Aroclor 1260	<0.33

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-10D-35.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	306316-11 1/1,000
Date Analyzed:	07/12/13	Data File:	44.D\ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	500 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<33
Aroclor 1232	<33
Aroclor 1016	<33
Aroclor 1242	<33
Aroclor 1248	<33
Aroclor 1254	<33
Aroclor 1260	<33

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EB-16-2.5'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	306316-14 1/5
Date Analyzed:	07/12/13	Data File:	66.D\ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	103 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.17
Aroclor 1232	<0.17
Aroclor 1016	<0.17
Aroclor 1242	<0.17
Aroclor 1248	<0.17
Aroclor 1254	<0.17
Aroclor 1260	<0.17

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EB-16-5.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	306316-15
Date Analyzed:	07/12/13	Data File:	52.D\ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	94	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.033
Aroclor 1232	<0.033
Aroclor 1016	<0.033
Aroclor 1242	<0.033
Aroclor 1248	<0.033
Aroclor 1254	<0.033
Aroclor 1260	<0.033

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EB-16-10.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	306316-17 1/100
Date Analyzed:	07/12/13	Data File:	48.D\ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	150 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<3.3
Aroclor 1232	<3.3
Aroclor 1016	<3.3
Aroclor 1242	<3.3
Aroclor 1248	<3.3
Aroclor 1254	<3.3
Aroclor 1260	<3.3

Analysis For PCBs By EPA Method 8082

Client Sample ID:	EMW-10S-5.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	306316-26 1/5
Date Analyzed:	07/12/13	Data File:	64.D\ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	63 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.17
Aroclor 1232	<0.17
Aroclor 1016	<0.17
Aroclor 1242	<0.17
Aroclor 1248	<0.17
Aroclor 1254	<0.17
Aroclor 1260	<0.17

Analysis For PCBs By EPA Method 8082

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley 101.00205.00030
Date Extracted:	07/01/13	Lab ID:	03-1301 mb
Date Analyzed:	07/11/13	Data File:	38.D\ECD1A.CH
Matrix:	Soil	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	95	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.033
Aroclor 1232	<0.033
Aroclor 1016	<0.033
Aroclor 1242	<0.033
Aroclor 1248	<0.033
Aroclor 1254	<0.033
Aroclor 1260	<0.033

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-10D-1.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306316-01
Date Analyzed:	07/11/13	Data File:	306316-01.046
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	110	60	125
Indium	103	60	125
Holmium	95	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	0.154
Chromium	10.7
Nickel	17.0
Copper	111
Zinc	247
Arsenic	90.6
Selenium	<0.920 j
Silver	0.160
Cadmium	0.240
Antimony	58.1
Barium	34.5
Thallium	0.0840
Lead	80.9

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-10D-5.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306316-03
Date Analyzed:	07/11/13	Data File:	306316-03.047
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	107	60	125
Indium	93	60	125
Holmium	92	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.086
Chromium	4.59
Nickel	4.35
Copper	13.1
Zinc	26.4
Arsenic	3.10
Selenium	<0.920 j
Silver	<0.0780 j
Cadmium	<0.200
Antimony	0.343
Barium	19.2
Thallium	<0.0440 j
Lead	11.0

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-10D-10.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306316-05
Date Analyzed:	07/11/13	Data File:	306316-05.049
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	103	60	125
Indium	89	60	125
Holmium	89	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	0.200
Chromium	9.08
Nickel	7.05
Copper	17.6
Zinc	24.7
Arsenic	3.76
Selenium	<0.920 j
Silver	<0.0780 j
Cadmium	<0.200
Antimony	0.215
Barium	38.3
Thallium	0.0733
Lead	5.31

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-10D-15.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306316-07
Date Analyzed:	07/11/13	Data File:	306316-07.050
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	107	60	125
Indium	94	60	125
Holmium	96	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	0.128
Chromium	6.93
Nickel	6.96
Copper	14.1
Zinc	17.6
Arsenic	2.95
Selenium	<0.920 j
Silver	<0.0780 j
Cadmium	<0.200
Antimony	<0.106 j
Barium	18.0
Thallium	<0.0440 j
Lead	1.58

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-10D-35.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306316-11
Date Analyzed:	07/11/13	Data File:	306316-11.051
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	102	60	125
Indium	88	60	125
Holmium	89	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	0.108
Chromium	4.91
Nickel	5.45
Copper	8.75
Zinc	16.1
Arsenic	0.904
Selenium	<0.920 j
Silver	<0.0780 j
Cadmium	<0.200
Antimony	<0.106 j
Barium	15.6
Thallium	<0.0440 j
Lead	1.00

Analysis For Total Metals By EPA Method 200.8

Client ID:	EB-16-2.5'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306316-14
Date Analyzed:	07/11/13	Data File:	306316-14.052
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	99	60	125
Indium	85	60	125
Holmium	86	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	0.136
Chromium	8.60
Nickel	13.5
Copper	20.5
Zinc	34.1
Arsenic	4.49
Selenium	<0.920 j
Silver	<0.0780 j
Cadmium	0.273
Antimony	1.22
Barium	41.1
Thallium	<0.0440 j
Lead	14.4

Analysis For Total Metals By EPA Method 200.8

Client ID:	EB-16-5.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306316-15
Date Analyzed:	07/11/13	Data File:	306316-15.053
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	95	60	125
Indium	81	60	125
Holmium	85	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.086
Chromium	4.39
Nickel	3.52
Copper	5.85
Zinc	15.5
Arsenic	1.54
Selenium	<0.920 j
Silver	<0.0780 j
Cadmium	<0.200
Antimony	<0.106 j
Barium	11.9
Thallium	<0.0440 j
Lead	0.931

Analysis For Total Metals By EPA Method 200.8

Client ID:	EB-16-10.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306316-17
Date Analyzed:	07/11/13	Data File:	306316-17.054
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	102	60	125
Indium	85	60	125
Holmium	89	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	0.155
Chromium	8.35
Nickel	6.28
Copper	11.9
Zinc	16.2
Arsenic	2.85
Selenium	<0.920 j
Silver	<0.0780 j
Cadmium	<0.200
Antimony	<0.106 j
Barium	35.3
Thallium	<0.0440 j
Lead	2.38

Analysis For Total Metals By EPA Method 200.8

Client ID:	EMW-10S-5.0'	Client:	SLR International Corp.
Date Received:	06/19/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306316-26
Date Analyzed:	07/11/13	Data File:	306316-26.055
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	108	60	125
Indium	93	60	125
Holmium	95	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.086
Chromium	5.01
Nickel	5.28
Copper	10.5
Zinc	25.3
Arsenic	2.64
Selenium	<0.920 j
Silver	<0.0780 j
Cadmium	<0.200
Antimony	2.06
Barium	21.9
Thallium	<0.0440 j
Lead	11.9

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	I3-408 mb
Date Analyzed:	07/11/13	Data File:	I3-408 mb.060
Matrix:	Soil	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	102	60	125
Indium	93	60	125
Holmium	92	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.086
Chromium	<0.48
Nickel	<0.21
Copper	<0.072 j
Zinc	<0.98
Arsenic	<0.42
Selenium	<0.92 j
Silver	<0.079 j
Cadmium	<0.20
Antimony	<0.106 j
Barium	<0.052 j
Thallium	<0.044 j
Lead	<0.050

Date of Report: 07/31/13
Date Received: 06/19/13
Project: Crowley 8th Ave Terminals, Inc. 101.00205.00030, F&BI 306316
Date Extracted: 07/09/13
Date Analyzed: 07/10/13

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
EMW-10D-1.0' 306316-01	0.025
EMW-10D-5.0' 306316-03	0.029
EMW-10D-10.0' 306316-05	0.045
EMW-10D-15.0' 306316-07	0.014
EMW-10D-35.0' 306316-11	0.0062
EB-16-2.5' 306316-14	0.019
EB-16-5.0' 306316-15	0.0049
EB-16-10.0' 306316-17	0.019
EMW-10S-5.0' 306316-26	0.016
Method Blank	<0.002

Date of Report: 07/31/13
Date Received: 06/19/13
Project: Crowley 8th Ave Terminals, Inc. 101.00205.00030, F&BI 306316

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 306316-05 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	500	13	106	108	64-133	2

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	500	135	58-147

Date of Report: 07/31/13
Date Received: 06/19/13
Project: Crowley 8th Ave Terminals, Inc. 101.00205.00030, F&BI 306316

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 306316-13 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	500	<12	98	95	64-133	3

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	500	97	58-147

Date of Report: 07/31/13
Date Received: 06/19/13
Project: Crowley 8th Ave Terminals, Inc. 101.00205.00030, F&BI 306316

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 306269-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.02	27	28	10-56	4
Chloromethane	mg/kg (ppm)	2.5	<0.026	56	59	10-90	5
Vinyl chloride	mg/kg (ppm)	2.5	<0.016	58	61	10-91	5
Bromomethane	mg/kg (ppm)	2.5	<0.034	82	90	10-110	9
Chloroethane	mg/kg (ppm)	2.5	<0.024	79	76	10-101	4
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.02	70	71	10-95	1
Acetone	mg/kg (ppm)	12.5	<0.2	90	99	11-141	10
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.026	63	79	11-103	23 vo
Methylene chloride	mg/kg (ppm)	2.5	<0.054	99	98	14-128	1
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.013	97	103	17-134	6
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.024	86	89	13-112	3
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.017	88	91	23-115	3
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.026	91	100	18-117	9
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.022	91	92	25-120	1
Chloroform	mg/kg (ppm)	2.5	<0.017	91	93	29-117	2
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.14	98	105	20-133	7
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.016	91	94	22-124	3
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.022	94	100	27-112	6
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.024	87	91	26-107	4
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.03	102	110	22-115	8
Benzene	mg/kg (ppm)	2.5	<0.014	88	91	26-114	3
Trichloroethene	mg/kg (ppm)	2.5	<0.034	91	93	30-112	2
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.034	94	98	31-119	4
Bromodichloromethane	mg/kg (ppm)	2.5	<0.024	100	105	31-131	5
Dibromomethane	mg/kg (ppm)	2.5	<0.022	97	101	27-124	4
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.14	103	109	16-147	6
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.022	106	116	28-137	9
Toluene	mg/kg (ppm)	2.5	<0.017	89	90	34-112	1
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.015	96	104	30-136	8
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.014	96	99	32-126	3
2-Hexanone	mg/kg (ppm)	12.5	<0.096	104	110	17-147	6
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.02	95	98	29-125	3
Tetrachloroethene	mg/kg (ppm)	2.5	<0.026	90	91	27-110	1
Dibromochloromethane	mg/kg (ppm)	2.5	<0.026	100	105	32-143	5
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.03	113	120	32-126	6
Chlorobenzene	mg/kg (ppm)	2.5	<0.014	91	93	37-113	2
Ethylbenzene	mg/kg (ppm)	2.5	<0.013	91	92	38-111	1
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.028	110	116	35-126	5
m,p-Xylene	mg/kg (ppm)	5	<0.03	93	94	38-112	1
o-Xylene	mg/kg (ppm)	2.5	<0.034	91	93	38-113	2
Styrene	mg/kg (ppm)	2.5	<0.022	95	96	38-118	1
Isopropylbenzene	mg/kg (ppm)	2.5	<0.019	92	93	37-114	1
Bromoform	mg/kg (ppm)	2.5	<0.034	102	106	18-155	4
n-Propylbenzene	mg/kg (ppm)	2.5	<0.017	95	96	36-114	1
Bromobenzene	mg/kg (ppm)	2.5	<0.012	94	94	40-115	0
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.011	96	97	35-116	1
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.036	102	105	33-128	3
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.022	95	97	33-123	2
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.016	92	93	39-110	1
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.019	94	95	39-111	1
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.022	95	96	36-116	1
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.016	95	96	35-116	1
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.015	95	96	33-118	1
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.012	95	96	32-119	1
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.02	93	94	38-111	1
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.032	92	93	39-109	1
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.016	91	92	40-111	1
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.08	97	105	34-134	8
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.036	85	87	31-117	2
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.04	81	82	25-122	1
Naphthalene	mg/kg (ppm)	2.5	<0.024	89	94	39-120	5
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.019	79	82	35-117	4

Date of Report: 07/31/13
Date Received: 06/19/13
Project: Crowley 8th Ave Terminals, Inc. 101.00205.00030, F&BI 306316

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	70	10-76
Chloromethane	mg/kg (ppm)	2.5	83	34-98
Vinyl chloride	mg/kg (ppm)	2.5	90	42-107
Bromomethane	mg/kg (ppm)	2.5	110	46-113
Chloroethane	mg/kg (ppm)	2.5	97	47-115
Trichlorofluoromethane	mg/kg (ppm)	2.5	102	53-112
Acetone	mg/kg (ppm)	12.5	103	39-147
1,1-Dichloroethene	mg/kg (ppm)	2.5	98	65-110
Methylene chloride	mg/kg (ppm)	2.5	106	62-119
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	113	72-122
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	105	71-113
1,1-Dichloroethane	mg/kg (ppm)	2.5	105	76-109
2,2-Dichloropropane	mg/kg (ppm)	2.5	125	64-151
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	104	77-110
Chloroform	mg/kg (ppm)	2.5	103	78-108
2-Butanone (MEK)	mg/kg (ppm)	12.5	106	60-121
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	105	80-109
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	119 vo	72-116
1,1-Dichloropropene	mg/kg (ppm)	2.5	103	77-108
Carbon tetrachloride	mg/kg (ppm)	2.5	142 vo	67-123
Benzene	mg/kg (ppm)	2.5	101	75-107
Trichloroethene	mg/kg (ppm)	2.5	104	72-107
1,2-Dichloropropane	mg/kg (ppm)	2.5	107	78-111
Bromodichloromethane	mg/kg (ppm)	2.5	123	75-126
Dibromomethane	mg/kg (ppm)	2.5	111	80-111
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	115	80-128
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	130	71-138
Toluene	mg/kg (ppm)	2.5	98	79-112
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	116	77-135
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	105	84-115
2-Hexanone	mg/kg (ppm)	12.5	109	71-129
1,3-Dichloropropane	mg/kg (ppm)	2.5	103	82-113
Tetrachloroethene	mg/kg (ppm)	2.5	100	77-110
Dibromochloromethane	mg/kg (ppm)	2.5	122	64-152
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	133 vo	83-116
Chlorobenzene	mg/kg (ppm)	2.5	100	82-113
Ethylbenzene	mg/kg (ppm)	2.5	100	81-114
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	138 vo	76-125
m,p-Xylene	mg/kg (ppm)	5	103	82-115
o-Xylene	mg/kg (ppm)	2.5	101	81-116
Styrene	mg/kg (ppm)	2.5	104	81-118
Isopropylbenzene	mg/kg (ppm)	2.5	102	81-117
Bromoform	mg/kg (ppm)	2.5	128	50-174
n-Propylbenzene	mg/kg (ppm)	2.5	103	82-116
Bromobenzene	mg/kg (ppm)	2.5	101	82-118
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	105	83-120
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	112	83-125
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	105	79-116
2-Chlorotoluene	mg/kg (ppm)	2.5	100	80-114
4-Chlorotoluene	mg/kg (ppm)	2.5	102	82-114
tert-Butylbenzene	mg/kg (ppm)	2.5	104	82-116
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	104	82-116
sec-Butylbenzene	mg/kg (ppm)	2.5	104	81-123
p-Isopropyltoluene	mg/kg (ppm)	2.5	104	82-124
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	101	80-118
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	100	79-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	100	80-118
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	125	71-131
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	94	75-122
Hexachlorobutadiene	mg/kg (ppm)	2.5	92	74-130
Naphthalene	mg/kg (ppm)	2.5	101	83-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	89	80-126

Date of Report: 07/31/13
Date Received: 06/19/13
Project: Crowley 8th Ave Terminals, Inc. 101.00205.00030, F&BI 306316

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	111	111	54-149	0
Chloromethane	ug/L (ppb)	50	101	102	67-133	1
Vinyl chloride	ug/L (ppb)	50	102	102	73-132	0
Bromomethane	ug/L (ppb)	50	653 vo	614 vo	69-123	6
Chloroethane	ug/L (ppb)	50	183 vo	184 vo	68-126	1
Trichlorofluoromethane	ug/L (ppb)	50	137 vo	134 vo	70-132	2
Acetone	ug/L (ppb)	250	104	101	44-145	3
1,1-Dichloroethene	ug/L (ppb)	50	105	105	75-119	0
Methylene chloride	ug/L (ppb)	50	100	100	63-132	0
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	106	106	70-122	0
trans-1,2-Dichloroethene	ug/L (ppb)	50	101	102	76-118	1
1,1-Dichloroethane	ug/L (ppb)	50	99	100	80-116	1
2,2-Dichloropropane	ug/L (ppb)	50	129	130	62-141	1
cis-1,2-Dichloroethene	ug/L (ppb)	50	99	98	81-111	1
Chloroform	ug/L (ppb)	50	99	99	81-109	0
2-Butanone (MEK)	ug/L (ppb)	250	103	101	53-140	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	99	99	79-109	0
1,1,1-Trichloroethane	ug/L (ppb)	50	117 vo	116	80-116	1
1,1-Dichloropropene	ug/L (ppb)	50	98	98	78-112	0
Carbon tetrachloride	ug/L (ppb)	50	142 vo	145 vo	72-128	2
Benzene	ug/L (ppb)	50	96	96	81-108	0
Trichloroethene	ug/L (ppb)	50	99	98	77-108	1
1,2-Dichloropropane	ug/L (ppb)	50	101	101	82-109	0
Bromodichloromethane	ug/L (ppb)	50	120	121 vo	76-120	1
Dibromomethane	ug/L (ppb)	50	107	106	80-110	1
4-Methyl-2-pentanone	ug/L (ppb)	250	114	111	59-142	3
cis-1,3-Dichloropropene	ug/L (ppb)	50	125	124	76-128	1
Toluene	ug/L (ppb)	50	93	93	83-108	0
trans-1,3-Dichloropropene	ug/L (ppb)	50	111	113	76-128	2
1,1,2-Trichloroethane	ug/L (ppb)	50	101	101	82-110	0
2-Hexanone	ug/L (ppb)	250	107	106	53-145	1
1,3-Dichloropropane	ug/L (ppb)	50	99	99	83-110	0
Tetrachloroethene	ug/L (ppb)	50	94	95	78-109	1
Dibromochloromethane	ug/L (ppb)	50	121	123	63-140	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	126 vo	128 vo	85-113	2
Chlorobenzene	ug/L (ppb)	50	94	95	84-108	1
Ethylbenzene	ug/L (ppb)	50	94	94	84-110	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	132 vo	133 vo	76-125	1
m,p-Xylene	ug/L (ppb)	100	96	97	84-112	1
o-Xylene	ug/L (ppb)	50	95	95	82-113	0
Styrene	ug/L (ppb)	50	97	97	84-116	0
Isopropylbenzene	ug/L (ppb)	50	95	95	81-122	0
Bromoform	ug/L (ppb)	50	130	133	40-161	2
n-Propylbenzene	ug/L (ppb)	50	96	97	81-115	1
Bromobenzene	ug/L (ppb)	50	96	96	80-113	0
1,3,5-Trimethylbenzene	ug/L (ppb)	50	96	98	83-117	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	107	108	79-118	1
1,2,3-Trichloropropane	ug/L (ppb)	50	99	101	74-116	2
2-Chlorotoluene	ug/L (ppb)	50	93	94	79-112	1
4-Chlorotoluene	ug/L (ppb)	50	95	96	81-113	1
tert-Butylbenzene	ug/L (ppb)	50	94	96	81-119	2
1,2,4-Trimethylbenzene	ug/L (ppb)	50	95	97	83-116	2
sec-Butylbenzene	ug/L (ppb)	50	95	96	83-116	1
p-Isopropyltoluene	ug/L (ppb)	50	95	96	82-119	1
1,3-Dichlorobenzene	ug/L (ppb)	50	93	95	83-111	2
1,4-Dichlorobenzene	ug/L (ppb)	50	92	95	82-109	3
1,2-Dichlorobenzene	ug/L (ppb)	50	92	93	83-111	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	120	122	62-133	2
1,2,4-Trichlorobenzene	ug/L (ppb)	50	83	84	77-117	1
Hexachlorobutadiene	ug/L (ppb)	50	79	78	74-118	1
Naphthalene	ug/L (ppb)	50	91	93	75-131	2
1,2,3-Trichlorobenzene	ug/L (ppb)	50	79 vo	81 vo	82-115	2

Date of Report: 07/31/13
Date Received: 06/19/13
Project: Crowley 8th Ave Terminals, Inc. 101.00205.00030, F&BI 306316

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D

Laboratory Code: 306316-17 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Phenol	mg/kg (ppm)	1.7	<0.0054	62	68	50-150	9
Bis(2-chloroethyl) ether	mg/kg (ppm)	1.7	<0.0016	56	62	50-150	10
2-Chlorophenol	mg/kg (ppm)	1.7	<0.0062	61	67	50-150	9
1,3-Dichlorobenzene	mg/kg (ppm)	1.7	<0.0026	47 vo	58	50-150	21 vo
1,4-Dichlorobenzene	mg/kg (ppm)	1.7	<0.0024	48 vo	58	50-150	19
1,2-Dichlorobenzene	mg/kg (ppm)	1.7	<0.004	51	59	50-150	15
Benzyl alcohol	mg/kg (ppm)	1.7	<0.005	62	67	50-150	8
Bis(2-chloroisopropyl) ether	mg/kg (ppm)	1.7	<0.0016	54	61	50-150	12
2-Methylphenol	mg/kg (ppm)	1.7	<0.0064	64	69	50-150	8
Hexachloroethane	mg/kg (ppm)	1.7	<0.0034	37 vo	39 vo	50-150	5
N-Nitroso-di-n-propylamine	mg/kg (ppm)	1.7	<0.003	62	63	50-150	2
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	1.7	<0.014	63	67	50-150	6
Nitrobenzene	mg/kg (ppm)	1.7	<0.0026	57	62	50-150	8
Isophorone	mg/kg (ppm)	1.7	<0.0012	62	67	50-150	8
2-Nitrophenol	mg/kg (ppm)	1.7	<0.0082	63	68	50-150	8
2,4-Dimethylphenol	mg/kg (ppm)	1.7	<0.019	62	68	50-150	9
Benzoic acid	mg/kg (ppm)	2.5	<0.055	51	58	50-150	13
Bis(2-chloroethoxy)methane	mg/kg (ppm)	1.7	<0.0014	58	63	50-150	8
2,4-Dichlorophenol	mg/kg (ppm)	1.7	<0.0058	65	72	50-150	10
1,2,4-Trichlorobenzene	mg/kg (ppm)	1.7	<0.0034	57	65	50-150	13
Hexachlorobutadiene	mg/kg (ppm)	1.7	<0.002	56	64	50-150	13
4-Chloroaniline	mg/kg (ppm)	3.3	<0.18	28 vo	39 vo	50-150	33 vo
4-Chloro-3-methylphenol	mg/kg (ppm)	1.7	<0.0044	69	78	50-150	12
2-Methylnaphthalene	mg/kg (ppm)	1.7	<0.001	59	65	50-150	10
Hexachlorocyclopentadiene	mg/kg (ppm)	1.7	<0.0022	7 vo	2 vo	50-150	111 vo
2,4,6-Trichlorophenol	mg/kg (ppm)	1.7	<0.008	68	73	50-150	7
2,4,5-Trichlorophenol	mg/kg (ppm)	1.7	<0.0096	71	77	50-150	8
2-Chloronaphthalene	mg/kg (ppm)	1.7	<0.0014	63	67	50-150	6
2-Nitroaniline	mg/kg (ppm)	1.7	<0.0026	68	76	50-150	11
Dimethyl phthalate	mg/kg (ppm)	1.7	<0.0012	69	76	50-150	10
2,6-Dinitrotoluene	mg/kg (ppm)	1.7	<0.014	72	79	50-150	9
3-Nitroaniline	mg/kg (ppm)	3.3	<0.001	35 vo	46 vo	50-150	27 vo
2,4-Dinitrophenol	mg/kg (ppm)	1.7	<0.018	34 vo	19 vo	50-150	57 vo
Dibenzofuran	mg/kg (ppm)	1.7	<0.004	66	72	50-150	9
2,4-Dinitrotoluene	mg/kg (ppm)	1.7	<0.0012	76	81	50-150	6
4-Nitrophenol	mg/kg (ppm)	1.7	<0.0016	58	66	50-150	13
Diethyl phthalate	mg/kg (ppm)	1.7	<0.001	70	76	50-150	8
4-Chlorophenyl phenyl ether	mg/kg (ppm)	1.7	<0.018	65	73	50-150	12
N-Nitrosodiphenylamine	mg/kg (ppm)	1.7	<0.0016	68	73	50-150	7
4-Nitroaniline	mg/kg (ppm)	3.3	<0.001	41 vo	54	50-150	27 vo
4,6-Dinitro-2-methylphenol	mg/kg (ppm)	1.7	<0.0062	41 vo	25 vo	50-150	48 vo
4-Bromophenyl phenyl ether	mg/kg (ppm)	1.7	0.0021	72	78	50-150	8
Hexachlorobenzene	mg/kg (ppm)	1.7	<0.0012	72	77	50-150	7
Pentachlorophenol	mg/kg (ppm)	1.7	<0.002	74	75	50-150	1
Carbazole	mg/kg (ppm)	1.7	<0.0000000	68	66	50-150	3
Di-n-butyl phthalate	mg/kg (ppm)	1.7	0.0037	68	70	50-150	3
Benzyl butyl phthalate	mg/kg (ppm)	1.7	0.0013	85	87	50-150	2
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	1.7	0.0017	81	84	50-150	4
Di-n-octyl phthalate	mg/kg (ppm)	1.7	<0.001	82	91	50-150	10

Date of Report: 07/31/13
Date Received: 06/19/13
Project: Crowley 8th Ave Terminals, Inc. 101.00205.00030, F&BI 306316

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	mg/kg (ppm)	1.7	78	82	51-119	5
Bis(2-chloroethyl) ether	mg/kg (ppm)	1.7	77	79	60-112	3
2-Chlorophenol	mg/kg (ppm)	1.7	80	82	59-114	2
1,3-Dichlorobenzene	mg/kg (ppm)	1.7	77	76	62-113	1
1,4-Dichlorobenzene	mg/kg (ppm)	1.7	77	76	61-114	1
1,2-Dichlorobenzene	mg/kg (ppm)	1.7	78	77	61-113	1
Benzyl alcohol	mg/kg (ppm)	1.7	82	86	50-119	5
Bis(2-chloroisopropyl) ether	mg/kg (ppm)	1.7	75	76	59-113	1
2-Methylphenol	mg/kg (ppm)	1.7	79	80	58-115	1
Hexachloroethane	mg/kg (ppm)	1.7	75	73	63-114	3
N-Nitroso-di-n-propylamine	mg/kg (ppm)	1.7	81	86	62-114	6
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	1.7	80	81	54-120	1
Nitrobenzene	mg/kg (ppm)	1.7	77	80	59-114	4
Isophorone	mg/kg (ppm)	1.7	81	83	61-113	2
2-Nitrophenol	mg/kg (ppm)	1.7	85	89	59-114	5
2,4-Dimethylphenol	mg/kg (ppm)	1.7	64	59	54-107	8
Benzoic acid	mg/kg (ppm)	2.5	95	103	43-150	8
Bis(2-chloroethoxy)methane	mg/kg (ppm)	1.7	78	80	60-114	3
2,4-Dichlorophenol	mg/kg (ppm)	1.7	84	86	57-118	2
1,2,4-Trichlorobenzene	mg/kg (ppm)	1.7	79	81	56-112	2
Hexachlorobutadiene	mg/kg (ppm)	1.7	80	81	60-116	1
4-Chloroaniline	mg/kg (ppm)	3.3	52	61	10-126	16
4-Chloro-3-methylphenol	mg/kg (ppm)	1.7	84	88	59-115	5
2-Methylnaphthalene	mg/kg (ppm)	1.7	78	80	60-115	3
Hexachlorocyclopentadiene	mg/kg (ppm)	1.7	92	93	41-107	1
2,4,6-Trichlorophenol	mg/kg (ppm)	1.7	87	94	47-119	8
2,4,5-Trichlorophenol	mg/kg (ppm)	1.7	87	88	61-121	1
2-Chloronaphthalene	mg/kg (ppm)	1.7	84	87	58-114	4
2-Nitroaniline	mg/kg (ppm)	1.7	90	92	55-119	2
Dimethyl phthalate	mg/kg (ppm)	1.7	88	91	58-116	3
2,6-Dinitrotoluene	mg/kg (ppm)	1.7	92	95	57-119	3
3-Nitroaniline	mg/kg (ppm)	3.3	76	77	10-143	1
2,4-Dinitrophenol	mg/kg (ppm)	1.7	59	75	40-122	24 vo
Dibenzofuran	mg/kg (ppm)	1.7	83	86	56-115	4
2,4-Dinitrotoluene	mg/kg (ppm)	1.7	95	98	53-126	3
4-Nitrophenol	mg/kg (ppm)	1.7	87	90	40-124	3
Diethyl phthalate	mg/kg (ppm)	1.7	87	89	57-116	2
4-Chlorophenyl phenyl ether	mg/kg (ppm)	1.7	84	86	54-119	2
N-Nitrosodiphenylamine	mg/kg (ppm)	1.7	81	83	54-113	2
4-Nitroaniline	mg/kg (ppm)	3.3	85	92	47-109	8
4,6-Dinitro-2-methylphenol	mg/kg (ppm)	1.7	61	73	57-108	18
4-Bromophenyl phenyl ether	mg/kg (ppm)	1.7	85	87	56-116	2
Hexachlorobenzene	mg/kg (ppm)	1.7	86	88	57-115	2
Pentachlorophenol	mg/kg (ppm)	1.7	88	93	45-123	6
Carbazole	mg/kg (ppm)	1.7	82	86	57-116	5
Di-n-butyl phthalate	mg/kg (ppm)	1.7	82	81	56-118	1
Benzyl butyl phthalate	mg/kg (ppm)	1.7	95	98	56-122	3
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	1.7	91	93	56-125	2
Di-n-octyl phthalate	mg/kg (ppm)	1.7	93	92	58-120	1

Date of Report: 07/31/13
Date Received: 06/19/13
Project: Crowley 8th Ave Terminals, Inc. 101.00205.00030, F&BI 306316

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM

Laboratory Code: 306316-23 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	74	66	44-129	11
Acenaphthylene	mg/kg (ppm)	0.17	84	76	52-121	10
Acenaphthene	mg/kg (ppm)	0.17	190 vo	98	51-123	64 vo
Fluorene	mg/kg (ppm)	0.17	268 vo	88	37-137	101 vo
Phenanthrene	mg/kg (ppm)	0.17	1387 vo	124	45-124	167 vo
Anthracene	mg/kg (ppm)	0.17	264 vo	78	32-124	109 vo
Fluoranthene	mg/kg (ppm)	0.17	1165 vo	119	50-125	163 vo
Pyrene	mg/kg (ppm)	0.17	1242 vo	127	41-135	163 vo
Benz(a)anthracene	mg/kg (ppm)	0.17	410 vo	83	23-144	133 vo
Chrysene	mg/kg (ppm)	0.17	308 vo	87	45-122	112 vo
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	351 vo	80	31-144	126 vo
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	142 vo	75	45-130	62 vo
Benzo(a)pyrene	mg/kg (ppm)	0.17	268 vo	75	39-128	113 vo
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	169 vo	78	28-146	74 vo
Dibenz(a,vo)anthracene	mg/kg (ppm)	0.17	87	75	46-129	15
Benzo(g,vo,i)perylene	mg/kg (ppm)	0.17	152 vo	75	37-133	68 vo

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	78	80	58-121	2
Acenaphthylene	mg/kg (ppm)	0.17	83	85	54-121	3
Acenaphthene	mg/kg (ppm)	0.17	81	83	54-123	3
Fluorene	mg/kg (ppm)	0.17	86	88	56-127	3
Phenanthrene	mg/kg (ppm)	0.17	84	88	55-122	5
Anthracene	mg/kg (ppm)	0.17	77	86	50-120	11
Fluoranthene	mg/kg (ppm)	0.17	81	96	54-129	16
Pyrene	mg/kg (ppm)	0.17	93	92	53-127	1
Benz(a)anthracene	mg/kg (ppm)	0.17	82	85	51-115	4
Chrysene	mg/kg (ppm)	0.17	86	92	55-129	6
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	80	88	56-123	10
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	78	80	54-131	3
Benzo(a)pyrene	mg/kg (ppm)	0.17	70	75	51-118	7
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	82	91	49-148	11
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	78	85	50-141	9
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	77	85	52-131	10

Date of Report: 07/31/13
Date Received: 06/19/13
Project: Crowley 8th Ave Terminals, Inc. 101.00205.00030, F&BI 306316

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	82	83	58-121	1
Acenaphthylene	mg/kg (ppm)	0.17	91	92	54-121	1
Acenaphthene	mg/kg (ppm)	0.17	90	91	54-123	1
Fluorene	mg/kg (ppm)	0.17	93	94	56-127	1
Phenanthrene	mg/kg (ppm)	0.17	90	91	55-122	1
Anthracene	mg/kg (ppm)	0.17	86	86	50-120	0
Fluoranthene	mg/kg (ppm)	0.17	81	95	54-129	16
Pyrene	mg/kg (ppm)	0.17	96	97	53-127	1
Benz(a)anthracene	mg/kg (ppm)	0.17	92	93	51-115	1
Chrysene	mg/kg (ppm)	0.17	97	96	55-129	1
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	88	94	56-123	7
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	86	86	54-131	0
Benzo(a)pyrene	mg/kg (ppm)	0.17	82	83	51-118	1
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	103	103	49-148	0
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	92	94	50-141	2
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	89	89	52-131	0

Date of Report: 07/31/13
Date Received: 06/19/13
Project: Crowley 8th Ave Terminals, Inc. 101.00205.00030, F&BI 306316

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 306316-15 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.8	<0.033	102	108	50-150	6
Aroclor 1260	mg/kg (ppm)	0.8	<0.033	92	97	50-150	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.8	90	70-130
Aroclor 1260	mg/kg (ppm)	0.8	99	70-130

Date of Report: 07/31/13
Date Received: 06/19/13
Project: Crowley 8th Ave Terminals, Inc. 101.00205.00030, F&BI 306316

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 306269-17 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	mg/kg (ppm)	5	0.102	108	108	67-138	0
Chromium	mg/kg (ppm)	50	3.82	98	99	57-128	1
Nickel	mg/kg (ppm)	25	3.84	95	97	69-112	2
Copper	mg/kg (ppm)	50	6.46	93	93	57-120	0
Zinc	mg/kg (ppm)	50	12.8	92 b	95 b	55-129	3 b
Arsenic	mg/kg (ppm)	10	0.974	101	104	70-118	3
Selenium	mg/kg (ppm)	5	<0.92	91	93	64-117	2
Silver	mg/kg (ppm)	10	0.0860	100	102	73-122	2
Cadmium	mg/kg (ppm)	10	<0.2	102	102	83-116	0
Antimony	mg/kg (ppm)	20	0.193	92	93	54-116	1
Barium	mg/kg (ppm)	50	9.49	104	102	60-141	2
Thallium	mg/kg (ppm)	5	0.0660	91	92	68-121	1
Lead	mg/kg (ppm)	50	0.934	99	98	59-148	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	mg/kg (ppm)	5	105	69-146
Chromium	mg/kg (ppm)	50	99	78-121
Nickel	mg/kg (ppm)	25	100	82-122
Copper	mg/kg (ppm)	50	97	82-119
Zinc	mg/kg (ppm)	50	102	81-120
Arsenic	mg/kg (ppm)	10	101	83-113
Selenium	mg/kg (ppm)	5	102	84-115
Silver	mg/kg (ppm)	10	99	81-116
Cadmium	mg/kg (ppm)	10	101	54-114
Antimony	mg/kg (ppm)	20	95	69-114
Barium	mg/kg (ppm)	50	96	85-116
Thallium	mg/kg (ppm)	5	90	77-123
Lead	mg/kg (ppm)	50	96	80-120

Date of Report: 07/31/13
Date Received: 06/19/13
Project: Crowley 8th Ave Terminals, Inc. 101.00205.00030, F&BI 306316

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 306269-17 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	0.125	0.0056	97	98	62-140	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	0.125	82	63-131

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

306316

SAMPLE CHAIN OF CUSTODY

KJ 06/19/13 VS4/BI4/VI

Page # 1 of 3

Send Report To Mike Staton

Company SLR International

Address 2211B 20th Ave SE, G202

City, State, ZIP Bothell, WA 98021

Phone # 425-402-8800 Fax # 425-402-8488

SAMPLERS (signature)

PROJECT NAME/NO. Crowley 8th Ave Terminal, inc 101.00205.00030

PO# 101.00205.00030

REMARKS NWTPH-DX after silica gel clean-up.

TURNAROUND TIME
- [x] Standard (2 Weeks)
- [ ] RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- [ ] Dispose after 30 days
- [ ] Return samples
- [x] Will call with instructions

V=added per Mike Staton GP 6/25/13

✓=added per Mike Staton GP 7/9/13
*=extract & hold per Mike Staton GP 7/15/13
⊛=analyze per Mike Staton GP 7/15/13

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Metals (priority pollutant 5 Be)	PAHs by 8270-SIM	PCBs by 8082	Hex Cr. by 7196A	Mercury by 7471B		Notes
EMW-10D-1.0'	01A-F	6-19-13	0825	Soil	6	X			X	X		X	X	X		X		
EMW-10D-2.5'	02		0850															Archive
EMW-~~D~~10D-5.0'	03		0905			X			X	X		X	X	X		X		
EMW-10D-7.5'	04		0930															Archive
EMW-10D-10.0'	05		0940			X			X	X		X	X	X		X		
EMW-10D-12.5'	06		1025															Archive
EMW-10D-15.0'	07		1035			X			X	X		X	X	X		X		
EMW-10D-20.0'	08		1045															Archive
EMW-10D-25.0	09		1100															
EMW-10D-30.0	10	↓	1110	↓	↓													↓

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Chris Lee	SLR	6/19/13	1648
Received by:	Nhan Phan	FeBI	6/19/13	1648
Relinquished by:				
Received by:		Samples received at 4		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

306316

SAMPLE CHAIN OF CUSTODY

KJ 06/19/13 rs4/BI4/V1

Page # 2 of 3

Send Report To Mike Staton
Company SLR International
Address 20118 20th Ave, G202
City, State, ZIP Bothell, WA 98021
Phone #425-402-8800 Fax #425-402-8488

SAMPLERS (signature)

PROJECT NAME/NO.: Crowley 8th Ave Terminal, Inc
101.00205.00030

PO#: 101.00205-00030

REMARKS: NWTPH-Dx after Silica Gel Clean-up

TURNAROUND TIME
- [x] Standard (2 Weeks)
- [ ] RUSH
Rush charges authorized by

SAMPLE DISPOSAL
- [ ] Dispose after 30 days
- [ ] Return samples
- [x] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Metals (priority pollutant 4 Br.)	PAHs by 8270-SIM	PCBs by 8082	Hex. Cr. by 7196A	Mercury by 1631E		Notes
EMW-~~50~~10D-350'	11A-F	6-19-13	1120	Soil	6	X			X	X		X	X	X		X		
EMW-10D-40.0'	12		1130															Archive
EMW-10D-50.0'	13		1145			✓							*					
EB-16-2.5'	14		1330			X			X	X		X	X	X		X		
EB-16-5.0'	15		1345			X			X	X		X	X	X		X		
EB-16-7.5'	16		1355															Archive
EB-16-10.0'	17		1410			X			X	X		X	X	X		X		
EB-16-12.5'	18		1425															Archive
EB-16-15.0'	19		1430										*					
EB-16-20.0'	20		1440															

ANALYSES REQUESTED

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Cities Lee	SLR	6/19/13	1648
Received by:		Nhan Phan	FEBI	6/19/13	1648
Relinquished by:			Samples received at		4 °C
Received by:					

306316

SAMPLE CHAIN OF CUSTODY

KJ 06/19/13

VS4/BI4/V1

Page # 3 of 3

Send Report To Mike Staton
Company SLR International
Address 20118 20th Ave, G202
City, State, ZIP Bothell, WA 98021
Phone #425-402-8800 Fax #425-402-8488

SAMPLERS (signature)

PROJECT NAME/NO.: Crowley 8th Ave Terminal, Inc 101.00205.00030
PO#: 101.00205.00030

REMARKS: NWTPH-DX after Silica Gel Clean-up

TURNAROUND TIME
☒ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☒ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	Metals (primary pollutant 8)	PAHs by 8270-SIM	PCBs by 8082	Hex. Cr by 7196A	Mercury by 1631E		Notes
EB-16-25.0'	21A-B	6-19-13	1455	Soil	6								*					Archive
EB-16-30.0'	22		1500															
EB-16-35.0'	23		1515										*					
EB-16-40.0'	24		1520															
EB-16-44.0	25		1525										*					
EMW-105-5.0'	26	6/19/13	0910	Soil	6	X			X	X		X	X	X		X		
Trip blank	27A-B								✓									added in Lab

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		CHRIS LOTT	SLR	6/19/13	1648
Received by:		Nhan Phan	FEBI	6/19/13	1648
Relinquished by:					
Received by:					

Samples received at 4 °C

SGS ANALYTICAL PERSPECTIVES

7 August 2013

Mike Staton
SLR Consulting
22118 20th Ave SE
Suite G202
Bothell, WA 98021

Ph.: 425-402-8800
Email: mstaton@slrconsulting.com

Subject: Certificate of Results – Amended 7Aug13

Dear Mike;

Attached to this narrative are the analytical results you requested on the samples submitted for the determination of polychlorinated dibenzo-*p*-dioxins and dibenzofurans. The insert below summarizes the relevant information pertaining to your project. In particular, QC annotations bring to your attention specific analytical observations and assessments made during the sample handling and data interpretation phases. Results reported relate only to the items tested.

Project Information Summary	When applicable, see QC Annotations for details
Client Project No.	101.00205.00019 Crowley
AP Project #	**A5634**
Analytical Protocol	Method 8290
No. Samples Submitted	23
No. Samples Analyzed	21 (2 samples on hold)
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
No. Outstanding Samples	0
Date Received	18-Jun-2013
Condition Received	good
Temperature upon Receipt (C)	1
Extraction within Holding Time	yes
Analysis within Holding Time	yes
Data meet QA/QC Requirements	yes
Exceptions	none
Analytical Difficulties	none

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SGS

QC Annotations:

1. Please see Appendix A & B attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.
2. The project has been amended so that the results are reported in pg/kg rather than pg/g.
3. The project has been amended on 22Jul13 so that the correct client ID for sample 14 is listed.
4. The project has been amended on 5Aug13 to include results from samples that the client removed from hold for analysis.
5. The project has been amended on 7Aug13 so that the correct client ID for sample 005 is listed.

Analytical Perspectives Certification IDs:

SOUTH CAROLINA	99054
ARKANSAS	88-0628
NEW JERSEY-NELAP SECONDARY	NC005
FLORIDA-NELAP PRIMARY	E87608
LOUISIANA	4024
NORTH CAROLINA	37783
WASHINGTON	C2027
NEW YORK	11988
VIRGINIA	460180
MINNESOTA	037-999-448
OREGON	pending
TEXAS	T104704484-10-1
PENNSYLVANIA-NELAP SECONDARY	68-01849

SGS Analytical Perspectives remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, please do not hesitate to contact us.

The management and staff of SGS Analytical Perspectives welcomes customer feedback, both positive and negative, as we continually improve our services. Please visit our web site at www.ultratrace.com and click on the 'Leave Your Feedback Here!' link on the Home Page. Thank you for choosing SGS Analytical Perspectives.

Sincerely,

Heather Distel

Heather Distel, Ph.D.
Senior Project Scientist/Team Lead

SGS

APPENDIX A: DATA QUALIFIERS / DATA ATTRIBUTES	
>	Indicates high recoveries. Shown with the numeric value at the top of the range.[1]
B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve).
EMPC	Represents an Estimated Maximum Possible Concentration. EMPC's arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
ETH	Indicates the presence of a diphenyl ether that appears to interfere with the quantitation of a furan. The reported concentration is the maximum.
H/h	If the standard recovery is below the method or SOP specified value "H" is assigned. If the obtained value is less than half the specified value "h" is assigned.[1]
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve).
ND	Indicates a non-detect.
NR	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes "Single Ion Mode" and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.[1]
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.
X	Indicates results reported from reinjection, refractionation, or repeat analyses.
APPENDIX B: LAB ID IDENTIFIERS	
AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

[1]Denotes data qualifiers/attributes whose use will be phased out over time

Sample ID: Method Blank A5634

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	n/a
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	MB1_11062_DF_SDS-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	n/a	% Solids:	100.0 %	QC Batch No:	11062	Date Analyzed:	09-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	17:40:35

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	56.8			ES 2378-TCDD	95.8	
12378-PeCDD	ND	69.8			ES 12378-PeCDD	89	
123478-HxCDD	ND	67.2			ES 123478-HxCDD	86.1	
123678-HxCDD	ND	79.8			ES 123678-HxCDD	86.1	
123789-HxCDD	ND	69.4			ES 123789-HxCDD	88.4	
1234678-HpCDD	ND	83.7			ES 1234678-HpCDD	85.7	
OCDD	333			J	ES OCDD	78.6	
2378-TCDF	ND	47.1			ES 2378-TCDF	95.6	
12378-PeCDF	ND	51.7			ES 12378-PeCDF	73.9	
23478-PeCDF	ND	47.7			ES 23478-PeCDF	75.3	
123478-HxCDF	ND	43.5			ES 123478-HxCDF	79.1	
123678-HxCDF	ND	44.5			ES 123678-HxCDF	77.5	
234678-HxCDF	ND	41.8			ES 234678-HxCDF	84.8	
123789-HxCDF	ND	57.9			ES 123789-HxCDF	89.5	
1234678-HpCDF	ND	54			ES 1234678-HpCDF	88.1	
1234789-HpCDF	ND	76.7			ES 1234789-HpCDF	86	
OCDF	ND	158			ES OCDF	81.2	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	99.7	
Total TCDD	ND	56.8	ND		CS 12347-PeCDD	91.3	
Total PeCDD	ND	69.8	ND		CS 12346-PeCDF	73.8	
Total HxCDD	ND	71.9	ND		CS 123469-HxCDF	103	
Total HpCDD	128		128		CS 1234689-HpCDF	91.4	
					AS 1368-TCDD	104	
Total TCDF	ND	47.1	ND		AS 1368-TCDF	98.1	
Total PeCDF	ND	49.7	ND				
Total HxCDF	ND	46.7	ND				
Total HpCDF	ND	64.4	ND				
Total PCDD/Fs	**461**		**461**				
WHO-2005 TEQs							
TEQ: ND=0	0.0999		0.0999				
TEQ: ND=DL/2	95	94.9	95				
TEQ: ND=DL	190	190	190				

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Sample ID: EB-28-1.0

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11062_DF_001-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	10-Jun-2013	% Solids:	93.3 %	QC Batch No:	11062	Date Analyzed:	09-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	20:20:34

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	110			ES 2378-TCDD	91.8	
12378-PeCDD	ND	153			ES 12378-PeCDD	85.4	
123478-HxCDD	ND	219			ES 123478-HxCDD	81.2	
123678-HxCDD	ND	230			ES 123678-HxCDD	83.9	
123789-HxCDD	ND	222			ES 123789-HxCDD	83.5	
1234678-HpCDD	1820			J	ES 1234678-HpCDD	93.8	
OCDD	17600				ES OCDD	94.3	
2378-TCDF	ND	87.2			ES 2378-TCDF	97.6	
12378-PeCDF	ND	124			ES 12378-PeCDF	88.4	
23478-PeCDF	ND	127			ES 23478-PeCDF	87.4	
123478-HxCDF	ND	140			ES 123478-HxCDF	85.7	
123678-HxCDF	ND	138			ES 123678-HxCDF	85.3	
234678-HxCDF	ND	146			ES 234678-HxCDF	84.8	
123789-HxCDF	ND	194			ES 123789-HxCDF	87.5	
1234678-HpCDF	271			J	ES 1234678-HpCDF	94.4	
1234789-HpCDF	ND	232			ES 1234789-HpCDF	98.9	
OCDF	511			J	ES OCDF	95	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	95	
Total TCDD	ND		317		CS 12347-PeCDD	85.6	
Total PeCDD	ND	153	ND		CS 12346-PeCDF	88.6	
Total HxCDD	256		256		CS 123469-HxCDF	99.6	
Total HpCDD	3880		3880		CS 1234689-HpCDF	100	
					AS 1368-TCDD	95.7	
Total TCDF	476		476		AS 1368-TCDF	64.4	
Total PeCDF	ND	125	ND				
Total HxCDF	257		257				
Total HpCDF	829		829				
Total PCDD/Fs	**23900**		**24200**				
WHO-2005 TEQs							
TEQ: ND=0	26.4		26.4				
TEQ: ND=DL/2	248	224	248				
TEQ: ND=DL	471	449	471				

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Sample ID: EB-28-5.0

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11062_DF_002-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	10-Jun-2013	% Solids:	81.1 %	QC Batch No:	11062	Date Analyzed:	09-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	21:13:54

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers
2378-TCDD	EMPC		405	J
12378-PeCDD	2610			
123478-HxCDD	4850			
123678-HxCDD	20700			
123789-HxCDD	9000			
1234678-HpCDD	606000			
OCDD	7240000			
2378-TCDF	2890			
12378-PeCDF	2120			J
23478-PeCDF	5570			
123478-HxCDF	8150			
123678-HxCDF	4960			
234678-HxCDF	5360			
123789-HxCDF	334			J
1234678-HpCDF	93000			
1234789-HpCDF	6490			
OCDF	247000			
Totals				
Total TCDD	20800		21600	
Total PeCDD	28200		28700	
Total HxCDD	124000		124000	
Total HpCDD	1160000		1160000	
Total TCDF	36600		37700	
Total PeCDF	58200		58600	
Total HxCDF	118000		118000	
Total HpCDF	319000		319000	
Total PCDD/Fs	**9350000**		**9360000**	
WHO-2005 TEQs				
TEQ: ND=0	19300		19700	
TEQ: ND=DL/2	19300	224	19700	
TEQ: ND=DL	19400	448	19700	

Standard	ES Recoveries	Qualifiers
ES 2378-TCDD	88.5	
ES 12378-PeCDD	92.5	
ES 123478-HxCDD	77.9	
ES 123678-HxCDD	78.1	
ES 123789-HxCDD	77	
ES 1234678-HpCDD	84.5	
ES OCDD	77.3	
ES 2378-TCDF	95.6	
ES 12378-PeCDF	96.1	
ES 23478-PeCDF	94.2	
ES 123478-HxCDF	80.3	
ES 123678-HxCDF	77.4	
ES 234678-HxCDF	79.1	
ES 123789-HxCDF	81.5	
ES 1234678-HpCDF	83.7	
ES 1234789-HpCDF	88.8	
ES OCDF	80.1	

Standard	CS/AS Recoveries
CS 37Cl-2378-TCDD	89.2
CS 12347-PeCDD	92.4
CS 12346-PeCDF	90.9
CS 123469-HxCDF	90.5
CS 1234689-HpCDF	87.2
AS 1368-TCDD	86.6
AS 1368-TCDF	87.1

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Sample ID: EB-28-7.5

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0101 Kg	Lab Sample ID	A5634_11062_DF_003-D5	Date Extracted:	21-Jun-2013
Date Collected:	10-Jun-2013	% Solids:	55.0 %	QC Batch No:	11062	Date Analyzed:	10-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	12:36:12

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	666			ES 2378-TCDD	91.4	
12378-PeCDD	ND	1150			ES 12378-PeCDD	82.4	
123478-HxCDD	ND	1410			ES 123478-HxCDD	85.2	
123678-HxCDD	ND	1470			ES 123678-HxCDD	81.9	
123789-HxCDD	ND	1510			ES 123789-HxCDD	78.2	
1234678-HpCDD	7340				ES 1234678-HpCDD	48.4	
OCDD	EMPC		16700		ES OCDD	22.6	V
2378-TCDF	EMPC		1250		ES 2378-TCDF	89.9	
12378-PeCDF	ND	1030			ES 12378-PeCDF	87.2	
23478-PeCDF	1930			J	ES 23478-PeCDF	84.1	
123478-HxCDF	ND	1130			ES 123478-HxCDF	91.4	
123678-HxCDF	ND	1220			ES 123678-HxCDF	88.3	
234678-HxCDF	ND	1210			ES 234678-HxCDF	82.2	
123789-HxCDF	ND	1660			ES 123789-HxCDF	76.1	
1234678-HpCDF	ND	2250			ES 1234678-HpCDF	53.5	
1234789-HpCDF	ND	3370			ES 1234789-HpCDF	44.6	
OCDF	ND	4740			ES OCDF	21.8	V
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	91.3	
Total TCDD	11000		14700		CS 12347-PeCDD	83.3	
Total PeCDD	18800		20800		CS 12346-PeCDF	87.3	
Total HxCDD	23500		25600		CS 123469-HxCDF	104	
Total HpCDD	15600		15600		CS 1234689-HpCDF	51.6	
					AS 1368-TCDD	62.3	
Total TCDF	17800		31000		AS 1368-TCDF	71.6	
Total PeCDF	11000		15500				
Total HxCDF	1340		4850				
Total HpCDF	ND	2720	ND				
Total PCDD/Fs	**99000**		**145000**				
WHO-2005 TEQs							
TEQ: ND=0	651		781				
TEQ: ND=DL/2	2110	1640	2210				
TEQ: ND=DL	3570	3280	3650				

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Sample ID: EB-45-7.5

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0101 Kg	Lab Sample ID	A5634_11062_DF_006-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	10-Jun-2013	% Solids:	87.2 %	QC Batch No:	11062	Date Analyzed:	09-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	22:07:13

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers
2378-TCDD	206			J
12378-PeCDD	1360			J
123478-HxCDD	2590			
123678-HxCDD	11100			
123789-HxCDD	3900			
1234678-HpCDD	433000			
OCDD	5080000			
2378-TCDF	3590			
12378-PeCDF	6860			
23478-PeCDF	18400			
123478-HxCDF	21400			
123678-HxCDF	20900			
234678-HxCDF	25100			
123789-HxCDF	ND	180		
1234678-HpCDF	145000			
1234789-HpCDF	16000			
OCDF	285000			
Totals				
Total TCDD	10800		11500	
Total PeCDD	14500		15800	
Total HxCDD	76500		76500	
Total HpCDD	719000		719000	
Total TCDF	113000		113000	
Total PeCDF	164000		164000	
Total HxCDF	215000		215000	
Total HpCDF	357000		357000	
Total PCDD/Fs	**7040000**		**7040000**	
WHO-2005 TEQs				
TEQ: ND=0	23700		23700	
TEQ: ND=DL/2	23700	277	23700	
TEQ: ND=DL	23700	553	23700	

Standard	ES Recoveries	Qualifiers
ES 2378-TCDD	82.4	
ES 12378-PeCDD	86.4	
ES 123478-HxCDD	63.9	
ES 123678-HxCDD	60.9	
ES 123789-HxCDD	54	
ES 1234678-HpCDD	67.9	
ES OCDD	60.7	
ES 2378-TCDF	89.8	
ES 12378-PeCDF	89.7	
ES 23478-PeCDF	89.4	
ES 123478-HxCDF	65.7	
ES 123678-HxCDF	63.2	
ES 234678-HxCDF	64	
ES 123789-HxCDF	60.8	
ES 1234678-HpCDF	66	
ES 1234789-HpCDF	70.4	
ES OCDF	63.4	

Standard	CS/AS Recoveries
CS 37Cl-2378-TCDD	88.1
CS 12347-PeCDD	91.5
CS 12346-PeCDF	86.9
CS 123469-HxCDF	76.4
CS 1234689-HpCDF	72.6
AS 1368-TCDD	82.9
AS 1368-TCDF	75.5

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Sample ID: EMW-3S-10.0

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11062_DF_009-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	11-Jun-2013	% Solids:	69.7 %	QC Batch No:	11062	Date Analyzed:	10-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	00:55:16

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	487			J	ES 2378-TCDD	92.9	
12378-PeCDD	1920			J	ES 12378-PeCDD	91.4	
123478-HxCDD	1970			J	ES 123478-HxCDD	80.2	
123678-HxCDD	7440				ES 123678-HxCDD	75.9	
123789-HxCDD	2310			J	ES 123789-HxCDD	76.6	
1234678-HpCDD	135000				ES 1234678-HpCDD	84.1	
OCDD	1060000				ES OCDD	74.6	
2378-TCDF	2410				ES 2378-TCDF	92.1	
12378-PeCDF	1180			J	ES 12378-PeCDF	93.5	
23478-PeCDF	2690				ES 23478-PeCDF	94.9	
123478-HxCDF	1470			J	ES 123478-HxCDF	78.9	
123678-HxCDF	1070			J	ES 123678-HxCDF	77.9	
234678-HxCDF	1910			J	ES 234678-HxCDF	78	
123789-HxCDF	116			J	ES 123789-HxCDF	81.4	
1234678-HpCDF	16300				ES 1234678-HpCDF	83.3	
1234789-HpCDF	1420			J	ES 1234789-HpCDF	86.5	
OCDF	50700				ES OCDF	79.8	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	98.6	
Total TCDD	73800		74400		CS 12347-PeCDD	97.3	
Total PeCDD	49200		49200		CS 12346-PeCDF	92.8	
Total HxCDD	44200		44200		CS 123469-HxCDF	92.1	
Total HpCDD	234000		234000		CS 1234689-HpCDF	89.9	
					AS 1368-TCDD	96.6	
Total TCDF	51000		51300		AS 1368-TCDF	95.1	
Total PeCDF	31300		31300				
Total HxCDF	28500		28600				
Total HpCDF	72600		72600				
Total PCDD/Fs	**1700000**		**1700000**				
WHO-2005 TEQs							
TEQ: ND=0	6980		6980				
TEQ: ND=DL/2	6980	115	6980				
TEQ: ND=DL	6980	231	6980				

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Sample ID: EMW-6S-5.0

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11062_DF_012-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	12-Jun-2013	% Solids:	90.0 %	QC Batch No:	11062	Date Analyzed:	10-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	01:48:37

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers
2378-TCDD	1740			
12378-PeCDD	5690			
123478-HxCDD	5750			
123678-HxCDD	7630			
123789-HxCDD	3780			
1234678-HpCDD	66500			
OCDD	403000			
2378-TCDF	6620			
12378-PeCDF	2490			
23478-PeCDF	7960			
123478-HxCDF	2550			
123678-HxCDF	2530			
234678-HxCDF	4030			
123789-HxCDF	368			J
1234678-HpCDF	24100			
1234789-HpCDF	868			J
OCDF	20700			
Totals				
Total TCDD	113000		113000	
Total PeCDD	108000		108000	
Total HxCDD	99000		99000	
Total HpCDD	132000		132000	
Total TCDF	135000		135000	
Total PeCDF	93500		93500	
Total HxCDF	52200		52700	
Total HpCDF	46100		46100	
Total PCDD/Fs	**1200000**		**1200000**	
WHO-2005 TEQs				
TEQ: ND=0	14300		14300	
TEQ: ND=DL/2	14300	167	14300	
TEQ: ND=DL	14300	333	14300	

Standard	ES Recoveries	Qualifiers
ES 2378-TCDD	94.4	
ES 12378-PeCDD	96.9	
ES 123478-HxCDD	81.2	
ES 123678-HxCDD	83.5	
ES 123789-HxCDD	83.4	
ES 1234678-HpCDD	88.5	
ES OCDD	82.7	
ES 2378-TCDF	92.3	
ES 12378-PeCDF	101	
ES 23478-PeCDF	101	
ES 123478-HxCDF	84.5	
ES 123678-HxCDF	85.7	
ES 234678-HxCDF	82.9	
ES 123789-HxCDF	85.7	
ES 1234678-HpCDF	88.9	
ES 1234789-HpCDF	91.4	
ES OCDF	85.6	

Standard	CS/AS Recoveries
CS 37Cl-2378-TCDD	97.2
CS 12347-PeCDD	101
CS 12346-PeCDF	99.8
CS 123469-HxCDF	99
CS 1234689-HpCDF	93.4
AS 1368-TCDD	90.3
AS 1368-TCDF	90.8

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Sample ID: EMW-9S-1.0

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11062_DF_014-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	12-Jun-2013	% Solids:	96.2 %	QC Batch No:	11062	Date Analyzed:	10-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	02:41:53

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers
2378-TCDD	ND	91.1		
12378-PeCDD	ND	108		
123478-HxCDD	ND	108		
123678-HxCDD	255			J
123789-HxCDD	161			J
1234678-HpCDD	6080			
OCDD	65200			
2378-TCDF	ND	83.8		
12378-PeCDF	ND	107		
23478-PeCDF	ND	107		
123478-HxCDF	ND	80.6		
123678-HxCDF	ND	80.8		
234678-HxCDF	ND	83.2		
123789-HxCDF	ND	111		
1234678-HpCDF	731			J
1234789-HpCDF	ND	108		
OCDF	1910			J
Totals				
Total TCDD	ND	91.1	ND	
Total PeCDD	ND	108	ND	
Total HxCDD	1260		1460	
Total HpCDD	10900		10900	
Total TCDF	ND	83.8	ND	
Total PeCDF	304		304	
Total HxCDF	1430		1430	
Total HpCDF	2570		2570	
Total PCDD/Fs	**83500**		**83700**	
WHO-2005 TEQs				
TEQ: ND=0	130		130	
TEQ: ND=DL/2	275	158	275	
TEQ: ND=DL	420	315	420	

Standard	ES Recoveries	Qualifiers
ES 2378-TCDD	86.4	
ES 12378-PeCDD	85.5	
ES 123478-HxCDD	73.1	
ES 123678-HxCDD	71.3	
ES 123789-HxCDD	72	
ES 1234678-HpCDD	80.6	
ES OCDD	75.2	
ES 2378-TCDF	88.3	
ES 12378-PeCDF	89	
ES 23478-PeCDF	87.7	
ES 123478-HxCDF	74.4	
ES 123678-HxCDF	76	
ES 234678-HxCDF	74.8	
ES 123789-HxCDF	74.7	
ES 1234678-HpCDF	79.8	
ES 1234789-HpCDF	80.5	
ES OCDF	76.5	
Standard	**CS/AS Recoveries**	
CS 37Cl-2378-TCDD	87.7	
CS 12347-PeCDD	87.6	
CS 12346-PeCDF	88.3	
CS 123469-HxCDF	86.1	
CS 1234689-HpCDF	83.1	
AS 1368-TCDD	82	
AS 1368-TCDF	52.4	

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Sample ID: EMW-9S-5.0

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0101 Kg	Lab Sample ID	A5634_11062_DF_015-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	13-Jun-2013	% Solids:	87.9 %	QC Batch No:	11062	Date Analyzed:	10-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	03:35:10

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers
2378-TCDD	235			J
12378-PeCDD	1190			J
123478-HxCDD	9100			
123678-HxCDD	33300			
123789-HxCDD	8030			
1234678-HpCDD	2390000			
OCDD	33100000			E
2378-TCDF	5250			
12378-PeCDF	714			J
23478-PeCDF	1700			J
123478-HxCDF	5540			
123678-HxCDF	1790			J
234678-HxCDF	3670			
123789-HxCDF	ND	122		
1234678-HpCDF	156000			
1234789-HpCDF	21300			
OCDF	905000			
Totals				
Total TCDD	5150		5510	
Total PeCDD	9620		9620	
Total HxCDD	223000		223000	
Total HpCDD	3590000		3590000	
Total TCDF	20400		20900	
Total PeCDF	13400		13700	
Total HxCDF	129000		130000	
Total HpCDF	771000		771000	
Total PCDD/Fs	**38700000**		**38700000**	
WHO-2005 TEQs				
TEQ: ND=0	44500		44500	
TEQ: ND=DL/2	44500	127	44500	
TEQ: ND=DL	44500	254	44500	

Standard	ES Recoveries	Qualifiers
ES 2378-TCDD	102	
ES 12378-PeCDD	103	
ES 123478-HxCDD	67.3	
ES 123678-HxCDD	51.2	
ES 123789-HxCDD	45.6	
ES 1234678-HpCDD	66.3	
ES OCDD	64.3	
ES 2378-TCDF	96.2	
ES 12378-PeCDF	104	
ES 23478-PeCDF	106	
ES 123478-HxCDF	61.7	
ES 123678-HxCDF	59	
ES 234678-HxCDF	61.2	
ES 123789-HxCDF	50	
ES 1234678-HpCDF	64.5	
ES 1234789-HpCDF	68.1	
ES OCDF	65.5	

Standard	CS/AS Recoveries
CS 37Cl-2378-TCDD	104
CS 12347-PeCDD	103
CS 12346-PeCDF	82.5
CS 123469-HxCDF	68.8
CS 1234689-HpCDF	67.4
AS 1368-TCDD	92
AS 1368-TCDF	61.1

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Sample ID: EMW-5S-2.5

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11062_DF_018-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	13-Jun-2013	% Solids:	80.5 %	QC Batch No:	11062	Date Analyzed:	10-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	04:28:33

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	860				ES 2378-TCDD	93.4	
12378-PeCDD	2830				ES 12378-PeCDD	87.7	
123478-HxCDD	4030				ES 123478-HxCDD	73.8	
123678-HxCDD	13900				ES 123678-HxCDD	73.7	
123789-HxCDD	7150				ES 123789-HxCDD	64.6	
1234678-HpCDD	617000				ES 1234678-HpCDD	56.7	
OCDD	17900000			E	ES OCDD	36.3	
2378-TCDF	3340				ES 2378-TCDF	96.5	
12378-PeCDF	1160			J	ES 12378-PeCDF	92	
23478-PeCDF	5210				ES 23478-PeCDF	89	
123478-HxCDF	5690				ES 123478-HxCDF	75.9	
123678-HxCDF	2850				ES 123678-HxCDF	75.1	
234678-HxCDF	4820				ES 234678-HxCDF	62.7	
123789-HxCDF	347			J	ES 123789-HxCDF	68.1	
1234678-HpCDF	95400				ES 1234678-HpCDF	64.3	
1234789-HpCDF	7440				ES 1234789-HpCDF	59	
OCDF	166000				ES OCDF	38.2	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	94.6	
Total TCDD	9740		10800		CS 12347-PeCDD	92.2	
Total PeCDD	21500		22700		CS 12346-PeCDF	90	
Total HxCDD	92900		92900		CS 123469-HxCDF	87.3	
Total HpCDD	1380000		1380000		CS 1234689-HpCDF	66.6	
					AS 1368-TCDD	97	
Total TCDF	45800		46100		AS 1368-TCDF	97.6	
Total PeCDF	71200		71600				
Total HxCDF	149000		150000				
Total HpCDF	389000		389000				
Total PCDD/Fs	**20300000**		**20300000**				
WHO-2005 TEQs							
TEQ: ND=0	22100		22100				
TEQ: ND=DL/2	22100	229	22100				
TEQ: ND=DL	22100	459	22100				

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Sample ID: EMW-5S-6.5

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11062_DF_019-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	13-Jun-2013	% Solids:	64.2 %	QC Batch No:	11062	Date Analyzed:	10-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	05:21:50

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	3820				ES 2378-TCDD	97.2	
12378-PeCDD	13600				ES 12378-PeCDD	94.6	
123478-HxCDD	10400				ES 123478-HxCDD	81.7	
123678-HxCDD	11900				ES 123678-HxCDD	82.5	
123789-HxCDD	9360				ES 123789-HxCDD	84.1	
1234678-HpCDD	58100				ES 1234678-HpCDD	88.4	
OCDD	208000				ES OCDD	80.5	
2378-TCDF	23800				ES 2378-TCDF	99.6	
12378-PeCDF	9890				ES 12378-PeCDF	101	
23478-PeCDF	19700				ES 23478-PeCDF	100	
123478-HxCDF	8870				ES 123478-HxCDF	84.6	
123678-HxCDF	7180				ES 123678-HxCDF	84.7	
234678-HxCDF	9210				ES 234678-HxCDF	83.8	
123789-HxCDF	555			J	ES 123789-HxCDF	88	
1234678-HpCDF	75400				ES 1234678-HpCDF	88.2	
1234789-HpCDF	1760			J	ES 1234789-HpCDF	86.4	
OCDF	28100				ES OCDF	81.5	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	98	
Total TCDD	567000		567000		CS 12347-PeCDD	95.5	
Total PeCDD	415000		415000		CS 12346-PeCDF	99.4	
Total HxCDD	216000		216000		CS 123469-HxCDF	95.3	
Total HpCDD	104000		104000		CS 1234689-HpCDF	90.5	
					AS 1368-TCDD	97.7	
Total TCDF	443000		443000		AS 1368-TCDF	101	
Total PeCDF	252000		252000				
Total HxCDF	118000		118000				
Total HpCDF	127000		127000				
Total PCDD/Fs	**2480000**		**2480000**				
WHO-2005 TEQs							
TEQ: ND=0	33200		33200				
TEQ: ND=DL/2	33200	236	33200				
TEQ: ND=DL	33200	473	33200				

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Sample ID: EB-46-1.0

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11062_DF_021-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	14-Jun-2013	% Solids:	89.4 %	QC Batch No:	11062	Date Analyzed:	10-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	06:15:07

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	66.6			ES 2378-TCDD	95.9	
12378-PeCDD	150			J	ES 12378-PeCDD	92.8	
123478-HxCDD	292			J	ES 123478-HxCDD	80.6	
123678-HxCDD	1660			J	ES 123678-HxCDD	79.3	
123789-HxCDD	596			J	ES 123789-HxCDD	81	
1234678-HpCDD	94600				ES 1234678-HpCDD	83.4	
OCDD	1330000				ES OCDD	77.6	
2378-TCDF	328			J	ES 2378-TCDF	95.9	
12378-PeCDF	EMPC		173	J	ES 12378-PeCDF	95.3	
23478-PeCDF	EMPC		406	J	ES 23478-PeCDF	94.8	
123478-HxCDF	547			J	ES 123478-HxCDF	81.1	
123678-HxCDF	265			J	ES 123678-HxCDF	81.6	
234678-HxCDF	370			J	ES 234678-HxCDF	81	
123789-HxCDF	ND	100			ES 123789-HxCDF	83.2	
1234678-HpCDF	8190				ES 1234678-HpCDF	83.3	
1234789-HpCDF	EMPC		1050	J	ES 1234789-HpCDF	83.5	
OCDF	41500				ES OCDF	76.4	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	97.7	
Total TCDD	448		705		CS 12347-PeCDD	94.3	
Total PeCDD	1480		1620		CS 12346-PeCDF	94.1	
Total HxCDD	9000		9220		CS 123469-HxCDF	91.6	
Total HpCDD	153000		153000		CS 1234689-HpCDF	86.6	
					AS 1368-TCDD	94.2	
Total TCDF	4000		4350		AS 1368-TCDF	57.5	
Total PeCDF	3590		4170				
Total HxCDF	7290		7790				
Total HpCDF	33700		35000				
Total PCDD/Fs	**1580000**		**1590000**				
WHO-2005 TEQs							
TEQ: ND=0	1990		2130				
TEQ: ND=DL/2	2050	135	2170				
TEQ: ND=DL	2110	269	2210				

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Sample ID: EB-46-8.0

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11062_DF_022-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	14-Jun-2013	% Solids:	82.5 %	QC Batch No:	11062	Date Analyzed:	10-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	07:08:24

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	51.7			ES 2378-TCDD	82.6	
12378-PeCDD	ND	48.4			ES 12378-PeCDD	94.6	
123478-HxCDD	ND	60.1			ES 123478-HxCDD	79.7	
123678-HxCDD	ND	64.2			ES 123678-HxCDD	79.9	
123789-HxCDD	143			J	ES 123789-HxCDD	79.6	
1234678-HpCDD	504			J	ES 1234678-HpCDD	82	
OCDD	3710			J	ES OCDD	73.9	
2378-TCDF	ND	30.3			ES 2378-TCDF	97.7	
12378-PeCDF	ND	33.7			ES 12378-PeCDF	100	
23478-PeCDF	ND	35.2			ES 23478-PeCDF	99	
123478-HxCDF	ND	35.8			ES 123478-HxCDF	80.9	
123678-HxCDF	ND	32.9			ES 123678-HxCDF	82.8	
234678-HxCDF	ND	35.2			ES 234678-HxCDF	81.9	
123789-HxCDF	ND	44.6			ES 123789-HxCDF	84.3	
1234678-HpCDF	EMPC		73.8	J	ES 1234678-HpCDF	82.1	
1234789-HpCDF	ND	61.6			ES 1234789-HpCDF	84	
OCDF	ND	84			ES OCDF	74.3	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	82	
Total TCDD	94.4		418		CS 12347-PeCDD	96.7	
Total PeCDD	103		196		CS 12346-PeCDF	99.3	
Total HxCDD	703		703		CS 123469-HxCDF	94.1	
Total HpCDD	504		1220		CS 1234689-HpCDF	84.3	
					AS 1368-TCDD	73	
Total TCDF	200		200		AS 1368-TCDF	42.9	
Total PeCDF	ND	34.4	ND				
Total HxCDF	ND	36.8	ND				
Total HpCDF	ND		73.8				
Total PCDD/Fs	**5320**		**6520**				
WHO-2005 TEQs							
TEQ: ND=0	20.5		21.2				
TEQ: ND=DL/2	92	75.1	92.5				
TEQ: ND=DL	164	150	164				

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Sample ID: Method Blank

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	n/a
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	MB1_11184_DF_SDS	Date Extracted:	29-Jul-2013
Date Collected:	n/a	% Solids:	100.0 %	QC Batch No:	11184	Date Analyzed:	02-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	20:36:40

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	103			ES 2378-TCDD	91	
12378-PeCDD	ND	112			ES 12378-PeCDD	86.2	
123478-HxCDD	ND	94.6			ES 123478-HxCDD	86.6	
123678-HxCDD	ND	91.2			ES 123678-HxCDD	85.4	
123789-HxCDD	ND	93.7			ES 123789-HxCDD	83.4	
1234678-HpCDD	ND	77.4			ES 1234678-HpCDD	86	
OCDD	ND	163			ES OCDD	78.8	
2378-TCDF	ND	59.6			ES 2378-TCDF	96	
12378-PeCDF	ND	53.7			ES 12378-PeCDF	90.6	
23478-PeCDF	ND	51			ES 23478-PeCDF	89.2	
123478-HxCDF	ND	75.3			ES 123478-HxCDF	84.8	
123678-HxCDF	ND	70			ES 123678-HxCDF	86.4	
234678-HxCDF	ND	73.9			ES 234678-HxCDF	85.5	
123789-HxCDF	ND	85.4			ES 123789-HxCDF	86.4	
1234678-HpCDF	ND	65.7			ES 1234678-HpCDF	85.6	
1234789-HpCDF	ND	76.7			ES 1234789-HpCDF	84.3	
OCDF	ND	143			ES OCDF	80.5	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	92.2	
Total TCDD	ND	103	ND		CS 12347-PeCDD	87.3	
Total PeCDD	ND	112	ND		CS 12346-PeCDF	91.8	
Total HxCDD	ND	92.9	ND		CS 123469-HxCDF	86	
Total HpCDD	ND	77.4	ND		CS 1234689-HpCDF	86.4	
					AS 1368-TCDD	89.7	
Total TCDF	ND	59.6	ND		AS 1368-TCDF	97.4	
Total PeCDF	ND	52.3	ND				
Total HxCDF	ND	75.7	ND				
Total HpCDF	ND	70.9	ND				
Total PCDD/Fs	**ND**		**ND**				
WHO-2005 TEQs							
TEQ: ND=0	0		0				
TEQ: ND=DL/2	149	149	149				
TEQ: ND=DL	299	299	299				

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Sample ID: EB-28-10.0

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11184_DF_004	Date Extracted:	29-Jul-2013
Date Collected:	10-Jun-2013	% Solids:	87.2 %	QC Batch No:	11184	Date Analyzed:	02-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	21:29:08

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	85.3			ES 2378-TCDD	86.3	
12378-PeCDD	ND	130			ES 12378-PeCDD	76.9	
123478-HxCDD	ND	104			ES 123478-HxCDD	86.2	
123678-HxCDD	ND	107			ES 123678-HxCDD	86.5	
123789-HxCDD	ND	108			ES 123789-HxCDD	83.4	
1234678-HpCDD	EMPC		304	J	ES 1234678-HpCDD	80.1	
OCDD	2350			J	ES OCDD	66.6	
2378-TCDF	ND	56.3			ES 2378-TCDF	96.2	
12378-PeCDF	ND	77.4			ES 12378-PeCDF	82.2	
23478-PeCDF	ND	73.8			ES 23478-PeCDF	84.5	
123478-HxCDF	ND	71.9			ES 123478-HxCDF	85.2	
123678-HxCDF	ND	65.9			ES 123678-HxCDF	84.2	
234678-HxCDF	ND	68.9			ES 234678-HxCDF	84.4	
123789-HxCDF	ND	81.1			ES 123789-HxCDF	83.9	
1234678-HpCDF	ND	62			ES 1234678-HpCDF	80.2	
1234789-HpCDF	ND	75.3			ES 1234789-HpCDF	83	
OCDF	ND	141			ES OCDF	72.7	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	88.5	
Total TCDD	96.7		96.7		CS 12347-PeCDD	79.2	
Total PeCDD	ND	130	ND		CS 12346-PeCDF	84.6	
Total HxCDD	454		454		CS 123469-HxCDF	86.1	
Total HpCDD	645		949		CS 1234689-HpCDF	81.1	
					AS 1368-TCDD	95.7	
Total TCDF	83.1		83.1		AS 1368-TCDF	78.1	
Total PeCDF	ND	75.6	ND				
Total HxCDF	ND	71.6	ND				
Total HpCDF	ND	68.3	ND				
Total PCDD/Fs	**3630**		**3930**				
WHO-2005 TEQs							
TEQ: ND=0	0.704		3.75				
TEQ: ND=DL/2	155	154	157				
TEQ: ND=DL	309	308	311				

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Sample ID: EB-45-5.0

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0101 Kg	Lab Sample ID	A5634_11184_DF_005	Date Extracted:	29-Jul-2013
Date Collected:	10-Jun-2013	% Solids:	87.2 %	QC Batch No:	11184	Date Analyzed:	02-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	22:21:43

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC		196	J	ES 2378-TCDD	88.4	
12378-PeCDD	573			J	ES 12378-PeCDD	79	
123478-HxCDD	869			J	ES 123478-HxCDD	81.7	
123678-HxCDD	3840				ES 123678-HxCDD	81.3	
123789-HxCDD	1780			J	ES 123789-HxCDD	81.4	
1234678-HpCDD	142000				ES 1234678-HpCDD	83.7	
OCDD	1670000				ES OCDD	81.2	
2378-TCDF	774				ES 2378-TCDF	99.6	
12378-PeCDF	642			J	ES 12378-PeCDF	88.3	
23478-PeCDF	1830			J	ES 23478-PeCDF	86.8	
123478-HxCDF	1320			J	ES 123478-HxCDF	82	
123678-HxCDF	942			J	ES 123678-HxCDF	80.1	
234678-HxCDF	1460			J	ES 234678-HxCDF	80.7	
123789-HxCDF	ND	138			ES 123789-HxCDF	84.8	
1234678-HpCDF	15700				ES 1234678-HpCDF	83.9	
1234789-HpCDF	1260			J	ES 1234789-HpCDF	83.9	
OCDF	56300				ES OCDF	82	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	87.9	
Total TCDD	11000		11800		CS 12347-PeCDD	77	
Total PeCDD	11500		11500		CS 12346-PeCDF	88.9	
Total HxCDD	27500		27500		CS 123469-HxCDF	82.7	
Total HpCDD	253000		253000		CS 1234689-HpCDF	84.4	
					AS 1368-TCDD	89	
Total TCDF	17200		17200		AS 1368-TCDF	101	
Total PeCDF	21100		21100				
Total HxCDF	26200		26900				
Total HpCDF	61200		61200				
Total PCDD/Fs	**2160000**		**2160000**				
WHO-2005 TEQs							
TEQ: ND=0	4340		4540				
TEQ: ND=DL/2	4390	195	4540				
TEQ: ND=DL	4430	389	4550				

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Sample ID: EB-45-10.0

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0101 Kg	Lab Sample ID	A5634_11184_DF_007	Date Extracted:	29-Jul-2013
Date Collected:	10-Jun-2013	% Solids:	91.2 %	QC Batch No:	11184	Date Analyzed:	02-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	23:14:17

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	68.1			ES 2378-TCDD	89.1	
12378-PeCDD	ND	101			ES 12378-PeCDD	84.9	
123478-HxCDD	EMPC		121	J	ES 123478-HxCDD	84	
123678-HxCDD	EMPC		385	J	ES 123678-HxCDD	85.4	
123789-HxCDD	274			J	ES 123789-HxCDD	87	
1234678-HpCDD	17600				ES 1234678-HpCDD	85.1	
OCDD	189000				ES OCDD	76.5	
2378-TCDF	ND	56.4			ES 2378-TCDF	96.6	
12378-PeCDF	ND	71.1			ES 12378-PeCDF	90	
23478-PeCDF	EMPC		189	J	ES 23478-PeCDF	88.3	
123478-HxCDF	172			J	ES 123478-HxCDF	83	
123678-HxCDF	EMPC		119	J	ES 123678-HxCDF	84.5	
234678-HxCDF	204			J	ES 234678-HxCDF	86.9	
123789-HxCDF	ND	80.6			ES 123789-HxCDF	87.5	
1234678-HpCDF	2050			J	ES 1234678-HpCDF	87.4	
1234789-HpCDF	192			J	ES 1234789-HpCDF	87	
OCDF	8160				ES OCDF	79.1	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	88.4	
Total TCDD	163		270		CS 12347-PeCDD	82.1	
Total PeCDD	143		143		CS 12346-PeCDF	88.8	
Total HxCDD	2190		2700		CS 123469-HxCDF	86.4	
Total HpCDD	29400		29400		CS 1234689-HpCDF	87.3	
					AS 1368-TCDD	93.2	
Total TCDF	1130		1190		AS 1368-TCDF	105	
Total PeCDF	2090		2580				
Total HxCDF	3240		3350				
Total HpCDF	7980		7980				
Total PCDD/Fs	**244000**		**245000**				
WHO-2005 TEQs							
TEQ: ND=0	323		442				
TEQ: ND=DL/2	438	130	534				
TEQ: ND=DL	554	261	627				

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Sample ID: EMW-3S-7.5

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11184_DF_008	Date Extracted:	29-Jul-2013
Date Collected:	11-Jun-2013	% Solids:	87.9 %	QC Batch No:	11184	Date Analyzed:	03-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	00:06:52

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC		127	J	ES 2378-TCDD	91.1	
12378-PeCDD	660			J	ES 12378-PeCDD	86	
123478-HxCDD	1290			J	ES 123478-HxCDD	82	
123678-HxCDD	5510				ES 123678-HxCDD	82.4	
123789-HxCDD	2550				ES 123789-HxCDD	82.5	
1234678-HpCDD	165000				ES 1234678-HpCDD	84	
OCDD	1940000				ES OCDD	83.1	
2378-TCDF	EMPC		343	J	ES 2378-TCDF	97.9	
12378-PeCDF	EMPC		369	J	ES 12378-PeCDF	90.9	
23478-PeCDF	1090			J	ES 23478-PeCDF	90.2	
123478-HxCDF	1340			J	ES 123478-HxCDF	79.6	
123678-HxCDF	821			J	ES 123678-HxCDF	80.5	
234678-HxCDF	1400			J	ES 234678-HxCDF	83	
123789-HxCDF	ND	135			ES 123789-HxCDF	83.8	
1234678-HpCDF	25300				ES 1234678-HpCDF	82.3	
1234789-HpCDF	1900			J	ES 1234789-HpCDF	84.7	
OCDF	125000				ES OCDF	82.2	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	91.6	
Total TCDD	804		1470		CS 12347-PeCDD	88.2	
Total PeCDD	3610		4170		CS 12346-PeCDF	89.7	
Total HxCDD	41600		41600		CS 123469-HxCDF	80.2	
Total HpCDD	420000		420000		CS 1234689-HpCDF	85.9	
					AS 1368-TCDD	95.8	
Total TCDF	3710		5650		AS 1368-TCDF	109	
Total PeCDF	12600		13100				
Total HxCDF	34500		34500				
Total HpCDF	106000		106000				
Total PCDD/Fs	**2690000**		**2690000**				
WHO-2005 TEQs							
TEQ: ND=0	4820		4990				
TEQ: ND=DL/2	4870	173	5000				
TEQ: ND=DL	4920	347	5010				

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Sample ID: EMW-3S-12.5

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11184_DF_010	Date Extracted:	29-Jul-2013
Date Collected:	11-Jun-2013	% Solids:	87.9 %	QC Batch No:	11184	Date Analyzed:	03-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	00:59:22

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	72.6			ES 2378-TCDD	81.8	
12378-PeCDD	131			J	ES 12378-PeCDD	75.1	
123478-HxCDD	EMPC		195	J	ES 123478-HxCDD	76.4	
123678-HxCDD	EMPC		754	J	ES 123678-HxCDD	78.9	
123789-HxCDD	515			J	ES 123789-HxCDD	77.2	
1234678-HpCDD	18400				ES 1234678-HpCDD	75.4	
OCDD	155000				ES OCDD	67	
2378-TCDF	EMPC		276	J	ES 2378-TCDF	88.6	
12378-PeCDF	729			J	ES 12378-PeCDF	81.8	
23478-PeCDF	961			J	ES 23478-PeCDF	80.7	
123478-HxCDF	430			J	ES 123478-HxCDF	76.5	
123678-HxCDF	342			J	ES 123678-HxCDF	76.5	
234678-HxCDF	612			J	ES 234678-HxCDF	75.1	
123789-HxCDF	ND	107			ES 123789-HxCDF	77.9	
1234678-HpCDF	2940				ES 1234678-HpCDF	81.4	
1234789-HpCDF	EMPC		155	J	ES 1234789-HpCDF	76.7	
OCDF	5680				ES OCDF	69.5	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	81.4	
Total TCDD	714		1140		CS 12347-PeCDD	74.2	
Total PeCDD	616		782		CS 12346-PeCDF	81.5	
Total HxCDD	4050		4990		CS 123469-HxCDF	77.1	
Total HpCDD	35800		35800		CS 1234689-HpCDF	78.8	
					AS 1368-TCDD	85.3	
Total TCDF	6090		7160		AS 1368-TCDF	89.3	
Total PeCDF	12200		12700				
Total HxCDF	8890		9010				
Total HpCDF	9210		9360				
Total PCDD/Fs	**238000**		**241000**				
WHO-2005 TEQs							
TEQ: ND=0	892		1020				
TEQ: ND=DL/2	953	165	1060				
TEQ: ND=DL	1010	331	1100				

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Sample ID: EMW-6S-2.5

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11184_DF_011	Date Extracted:	29-Jul-2013
Date Collected:	11-Jun-2013	% Solids:	87.9 %	QC Batch No:	11184	Date Analyzed:	03-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	01:51:55

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers
2378-TCDD	508			
12378-PeCDD	7230			
123478-HxCDD	11200			
123678-HxCDD	31400			
123789-HxCDD	23500			
1234678-HpCDD	394000			
OCDD	1380000			
2378-TCDF	3760			
12378-PeCDF	4540			
23478-PeCDF	13800			
123478-HxCDF	17400			
123678-HxCDF	7080			
234678-HxCDF	8100			
123789-HxCDF	ND	200		
1234678-HpCDF	49400			
1234789-HpCDF	2060			J
OCDF	21600			
Totals				
Total TCDD	7180		8410	
Total PeCDD	39000		39000	
Total HxCDD	211000		211000	
Total HpCDD	695000		695000	
Total TCDF	71700		73800	
Total PeCDF	143000		143000	
Total HxCDF	168000		168000	
Total HpCDF	97900		97900	
Total PCDD/Fs	**2830000**		**2840000**	
WHO-2005 TEQs				
TEQ: ND=0	27100		27100	
TEQ: ND=DL/2	27100	223	27100	
TEQ: ND=DL	27200	445	27200	

Standard	ES Recoveries	Qualifiers
ES 2378-TCDD	89.5	
ES 12378-PeCDD	87.8	
ES 123478-HxCDD	83	
ES 123678-HxCDD	85.4	
ES 123789-HxCDD	84.7	
ES 1234678-HpCDD	86.6	
ES OCDD	81.3	
ES 2378-TCDF	97.3	
ES 12378-PeCDF	92.1	
ES 23478-PeCDF	91.7	
ES 123478-HxCDF	82.8	
ES 123678-HxCDF	83.2	
ES 234678-HxCDF	83.6	
ES 123789-HxCDF	84.7	
ES 1234678-HpCDF	83.4	
ES 1234789-HpCDF	86.7	
ES OCDF	81.8	

Standard	CS/AS Recoveries
CS 37Cl-2378-TCDD	91.3
CS 12347-PeCDD	85.3
CS 12346-PeCDF	92.5
CS 123469-HxCDF	83.4
CS 1234689-HpCDF	85.5
AS 1368-TCDD	93.2
AS 1368-TCDF	104

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Sample ID: EMW-6S-7.5

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11184_DF_013	Date Extracted:	29-Jul-2013
Date Collected:	12-Jun-2013	% Solids:	87.9 %	QC Batch No:	11184	Date Analyzed:	03-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	02:44:27

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	89.9			ES 2378-TCDD	89	
12378-PeCDD	ND	99.7			ES 12378-PeCDD	86.6	
123478-HxCDD	ND	103			ES 123478-HxCDD	82.3	
123678-HxCDD	ND	98.8			ES 123678-HxCDD	81.5	
123789-HxCDD	126			J	ES 123789-HxCDD	82.7	
1234678-HpCDD	456			J	ES 1234678-HpCDD	80.7	
OCDD	2780			J	ES OCDD	69.9	
2378-TCDF	ND	62.5			ES 2378-TCDF	94.5	
12378-PeCDF	ND	59.5			ES 12378-PeCDF	90.6	
23478-PeCDF	ND	55			ES 23478-PeCDF	88.6	
123478-HxCDF	ND	60.5			ES 123478-HxCDF	78.4	
123678-HxCDF	ND	59.6			ES 123678-HxCDF	79.3	
234678-HxCDF	ND	61.8			ES 234678-HxCDF	80.3	
123789-HxCDF	ND	69.9			ES 123789-HxCDF	82.8	
1234678-HpCDF	ND	46.1			ES 1234678-HpCDF	78.6	
1234789-HpCDF	ND	60.9			ES 1234789-HpCDF	81	
OCDF	ND	134			ES OCDF	72.4	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	92	
Total TCDD	ND	89.9	ND		CS 12347-PeCDD	85.2	
Total PeCDD	ND	99.7	ND		CS 12346-PeCDF	94.2	
Total HxCDD	126		243		CS 123469-HxCDF	84.5	
Total HpCDD	984		984		CS 1234689-HpCDF	84.9	
					AS 1368-TCDD	99.6	
Total TCDF	ND	62.5	ND		AS 1368-TCDF	99.9	
Total PeCDF	ND	57.3	ND				
Total HxCDF	ND	62.7	ND				
Total HpCDF	ND	53.1	ND				
Total PCDD/Fs	**3890**		**4010**				
WHO-2005 TEQs							
TEQ: ND=0	18		18				
TEQ: ND=DL/2	148	136	148				
TEQ: ND=DL	279	272	279				

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Sample ID: EMW-5S-1.0

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0101 Kg	Lab Sample ID	A5634_11184_DF_017	Date Extracted:	29-Jul-2013
Date Collected:	13-Jun-2013	% Solids:	95.1 %	QC Batch No:	11184	Date Analyzed:	03-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	03:37:01

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	59.4			ES 2378-TCDD	90.8	
12378-PeCDD	ND	100			ES 12378-PeCDD	87.5	
123478-HxCDD	ND	92.9			ES 123478-HxCDD	83.5	
123678-HxCDD	202			J	ES 123678-HxCDD	83.8	
123789-HxCDD	EMPC		166	J	ES 123789-HxCDD	82.8	
1234678-HpCDD	3130				ES 1234678-HpCDD	84.3	
OCDD	21900				ES OCDD	72.9	
2378-TCDF	ND	58.9			ES 2378-TCDF	96.8	
12378-PeCDF	ND	74.4			ES 12378-PeCDF	92.2	
23478-PeCDF	ND	69.1			ES 23478-PeCDF	92	
123478-HxCDF	88			J	ES 123478-HxCDF	82.9	
123678-HxCDF	EMPC		66.7	J	ES 123678-HxCDF	81.6	
234678-HxCDF	EMPC		60.1	J	ES 234678-HxCDF	81.4	
123789-HxCDF	ND	63.4			ES 123789-HxCDF	84.5	
1234678-HpCDF	468			J	ES 1234678-HpCDF	83.7	
1234789-HpCDF	ND	73.4			ES 1234789-HpCDF	84.7	
OCDF	820			J	ES OCDF	75.6	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	90.5	
Total TCDD	ND		54.9		CS 12347-PeCDD	87.9	
Total PeCDD	ND	100	ND		CS 12346-PeCDF	88.6	
Total HxCDD	465		1180		CS 123469-HxCDF	82.3	
Total HpCDD	5670		5670		CS 1234689-HpCDF	84.5	
					AS 1368-TCDD	103	
Total TCDF	ND		86.7		AS 1368-TCDF	86.2	
Total PeCDF	ND		268				
Total HxCDF	686		957				
Total HpCDF	996		996				
Total PCDD/Fs	**30500**		**31900**				
WHO-2005 TEQs							
TEQ: ND=0	71.8		101				
TEQ: ND=DL/2	184	121	203				
TEQ: ND=DL	297	242	306				

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Sample ID: EMW-5S-10.0

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5634	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5634_11184_DF_020	Date Extracted:	29-Jul-2013
Date Collected:	13-Jun-2013	% Solids:	80.5 %	QC Batch No:	11184	Date Analyzed:	03-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	04:29:34

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	66.3			ES 2378-TCDD	89.8	
12378-PeCDD	ND	92.3			ES 12378-PeCDD	87.5	
123478-HxCDD	ND	82.5			ES 123478-HxCDD	87.6	
123678-HxCDD	ND	83.7			ES 123678-HxCDD	88.1	
123789-HxCDD	151			J	ES 123789-HxCDD	86	
1234678-HpCDD	739			J	ES 1234678-HpCDD	90.5	
OCDD	6030				ES OCDD	81.5	
2378-TCDF	ND	56.3			ES 2378-TCDF	100	
12378-PeCDF	ND	64.2			ES 12378-PeCDF	92	
23478-PeCDF	ND	60.6			ES 23478-PeCDF	92.6	
123478-HxCDF	ND	61.9			ES 123478-HxCDF	86.3	
123678-HxCDF	ND	58.2			ES 123678-HxCDF	85.7	
234678-HxCDF	ND	59.4			ES 234678-HxCDF	86.4	
123789-HxCDF	ND	71.4			ES 123789-HxCDF	86.8	
1234678-HpCDF	ND	51			ES 1234678-HpCDF	88.3	
1234789-HpCDF	ND	62.6			ES 1234789-HpCDF	87.1	
OCDF	ND	107			ES OCDF	83.3	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	90.8	
Total TCDD	231		389		CS 12347-PeCDD	85.3	
Total PeCDD	133		133		CS 12346-PeCDF	91.2	
Total HxCDD	397		867		CS 123469-HxCDF	87.1	
Total HpCDD	1850		1850		CS 1234689-HpCDF	88.5	
					AS 1368-TCDD	93.5	
Total TCDF	ND		251		AS 1368-TCDF	105	
Total PeCDF	ND	62.4	ND				
Total HxCDF	ND	62.4	ND				
Total HpCDF	ND	56.4	ND				
Total PCDD/Fs	**8630**		**9510**				
WHO-2005 TEQs							
TEQ: ND=0	24.3		24.3				
TEQ: ND=DL/2	138	118	138				
TEQ: ND=DL	252	237	252				

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A5634

ANALYTICAL PERSPECTIVES

CHAIN-OF-CUSTODY RECORD

PROJECT ID: 101.00205.00019 CROWLEY | P.O. No.: 101.00205.00019 | SAMPLER: Amanda Mangini (PRINTED NAME) (SIGNATURE)

RELINQUISHED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:	RECEIVED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:
Amanda Mangini	6/17/13	8:45	GREG LIGHT	6/17/13	8:45
RELINQUISHED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:	RECEIVED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:
GREG LIGHT	6/17/13	14:45			

PLEASE SEE NOTES ON THE BACK OF THE COC REGARDING THE SAMPLE ACCEPTANCE POLICY AND THE METHOD 8290 MS/MSD & DUP

REQUESTED TAT: 21 DAYS

SHIP TO: ANALYTICAL PERSPECTIVES, 2714 EXCHANGE DRIVE, WILMINGTON, NC 28405, PH.: 910-794-1613

METHOD OF SHIPMENT: FEDEX

SHIPMENT ID:

ATTN: YVES TONDEUR

QAPP REFERENCE: _____

SAMPLE ACCEPTANCE POLICY (ON BACK SIDE)

	SAMPLE ID	DATE	TIME	SAMPLE DESCRIPTION	MS/MSD	DUP	METHOD 8290	METHOD 1613	METHOD 1668A	METHOD 1668 B	METHOD 1668 C	PAHs BY HRMS	QUANTIC	USVOA	WHO2/WHO25	CONTAINER(S) QTY	CONTAINER(S) TYPE	MATRIX	
1	EB-28-1.0	6/10/13	0915	SOIL 1 40z Jar			X									1	4oz	SOIL	
2	EB-28-5.0		0925				X												
3	EB-28-7.5		0935				X												
*4	EB-28-10.0		0945				X												HOLD
*5	EB-45-5.0		1145				X												HOLD
6	EB-45-7.5		1150				X												
*7	EB-45-10.0		1155				X												HOLD

SPECIAL INSTRUCTIONS/COMMENTS: (PLEASE CIRCLE OPTION BELOW)

"DF ONLY" "DF & PCB" "DF & PAH" "DF & PCB & PAH"

"TRI – OCTA" "2,3,7,8-TCDD & F ONLY" "2,3,7,8-TCDD ONLY"

PLEASE SPECIFY TEFs: (PLEASE CHECK BOXES BELOW)

☐ "ITEFS" ☐ "WHO-98" ☒ "WHO-05" ☐ "MA-TEFS" ☐ "CT-TEFS"

SEND DOCUMENTATION & RESULTS TO:

NAME: MIKE STATON
COMPANY: SLR CONSULTING
ADDRESS: 22118 20TH AVE SE SUITE G202
CITY: BOTHELL
STATE: WA ZIP: 98021
PH.: 425-402-8021
E-MAIL: mstaton@slrconsulting.com

BILL TO: (☒ CHECK IF SAME)

NAME:
COMPANY:
ADDRESS:
CITY:
STATE: ZIP:
PH.:

AS634

ANALYTICAL PERSPECTIVES

CHAIN-OF-CUSTODY RECORD

PROJECT ID: 101.00205.00013 CROWLEY

P.O. NO.: 101.00205.00013

SAMPLER: Amanda Maynor (PRINTED NAME) (SIGNATURE)

RELINQUISHED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:	RECEIVED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:
Amanda Maynor	6/17/13	8:45	GREG LISH	6/17/13	8:45
RELINQUISHED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:	RECEIVED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:
GREG LISH	6/17/13	14:45			

PLEASE SEE NOTES ON THE BACK OF THE COC REGARDING THE SAMPLE ACCEPTANCE POLICY AND THE METHOD 8290 MS/MSD & DUP

REQUESTED TAT: 21 DAYS

SHIP TO: ANALYTICAL PERSPECTIVES
2714 EXCHANGE DRIVE
WILMINGTON, NC 28405
PH.: 910-794-1613

METHOD OF SHIPMENT:

SHIPMENT ID:

ATTN: YVES TONDEUR

QAPP REFERENCE:
SAMPLE ACCEPTANCE POLICY (ON BACK SIDE)

	SAMPLE ID	DATE	TIME	SAMPLE DESCRIPTION	MS/MSD	DUP	METHOD 8290	METHOD 1613	METHOD 1668A	METHOD 1668 B	METHOD 1668 C	PAHs BY HRMS	QUANTIC	USVOA	WHO2/WHO2S	CONTAINER(S) QTY	CONTAINER(S) TYPE	MATRIX	
8	EMW-35-7.5	6/11/13	1505	Soil 1 4oz jar			X									1	4 oz	Soil	HOLD
9	EMW-35-10.0	↓	1530	↓			↓									↓	↓	↓	
10	EMW-33-12.5	↓	1535	↓			↓									↓	↓	↓	HOLD
11	EMW-65-2.5	6/12/13	1300	↓			↓									↓	↓	↓	HOLD
12	EMW-65-5.0	↓	1310	↓			↓									↓	↓	↓	
13	EMW-65-7.5	↓	1320	↓			↓									↓	↓	↓	HOLD

SPECIAL INSTRUCTIONS/COMMENTS: (PLEASE CIRCLE OPTION BELOW)

"DF ONLY" "DF & PCB" "DF & PAH" "DF & PCB & PAH"

"TRI – OCTA" "2,3,7,8-TCDD & F ONLY" "2,3,7,8-TCDD ONLY"

PLEASE SPECIFY TEFS: (PLEASE CHECK BOXES BELOW)

☐ "ITEFS" ☐ "WHO-98" ☒ "WHO-05" ☐ "MA-TEFS" ☐ "CT-TEFS"

SEND DOCUMENTATION & RESULTS TO:

NAME:
COMPANY:
ADDRESS:
CITY:
STATE: ZIP:
PH.:
E-MAIL:

BILL TO: (☐ CHECK IF SAME)

NAME:
COMPANY:
ADDRESS:
CITY:
STATE: ZIP:
PH.:

AS634

ANALYTICAL PERSPECTIVES

CHAIN-OF-CUSTODY RECORD

PROJECT ID: 101.00205.0019 CROWLEY | P.O. NO.: 101.00205.0019 | SAMPLER: Amanda Meyer (PRINTED NAME) (SIGNATURE)

RELINQUISHED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:	RECEIVED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:
Amanda Meyer	4/17/13	8:45	GREG LUSH	4/17/13	8:45
GREG LUSH	4/17/13	14:45			

PLEASE SEE NOTES ON THE BACK OF THE COC REGARDING THE SAMPLE ACCEPTANCE POLICY AND THE METHOD 8290 MS/MSD & DUP

REQUESTED TAT: ___ DAYS

SHIP TO: ANALYTICAL PERSPECTIVES, 2714 EXCHANGE DRIVE, WILMINGTON, NC 28405, PH.: 910-794-1613

METHOD OF SHIPMENT: ____

SHIPMENT ID: ____

ATTN: YVES TONDEUR

QAPP REFERENCE: ____

SAMPLE ACCEPTANCE POLICY (ON BACK SIDE)

	SAMPLE ID	DATE	TIME	SAMPLE DESCRIPTION	MS/MSD	DUP	METHOD 8290	METHOD 1613	METHOD 1668A	METHOD 1668 B	METHOD 1668 C	PAHs BY HRMS	QUANTIC	U-SVOA	WHO-2/WHO-2S	CONTAINER(S) QTY	CONTAINER(S) TYPE	MATRIX	
14	EMW-9S-1.0		0755	SOIL 2 4oz jar			X									1	4 oz	SOIL	
15	EMW-9S-5.0		0815																
16*	EMW-9S-10.0		0835																HOLD
17*	EMW-5S-1.0		1150																HOLD
18	EMW-5S-2.5		1200																
19	EMW-5S-6.5		1215																
20*	EMW-5S-10.0		1230																HOLD

SPECIAL INSTRUCTIONS/COMMENTS: (PLEASE CIRCLE OPTION BELOW)

"DF ONLY" "DF & PCB" "DF & PAH" "DF & PCB & PAH"

"TRI – OCTA" "2,3,7,8-TCDD & F ONLY" "2,3,7,8-TCDD ONLY"

PLEASE SPECIFY TEFs: (PLEASE CHECK BOXES BELOW)

☐ "ITEFS" ☐ "WHO-98" ☒ "WHO-05" ☐ "MA-TEFS" ☐ "CT-TEFS"

SEND DOCUMENTATION & RESULTS TO:

NAME: ____
COMPANY: ____
ADDRESS: ____
CITY: ____
STATE: ____ ZIP: ____
PH.: ____
E-MAIL: ____

BILL TO: (☐ CHECK IF SAME)

NAME: ____
COMPANY: ____
ADDRESS: ____
CITY: ____
STATE: ____ ZIP: ____
PH.: ____

A5634

ANALYTICAL PERSPECTIVES

PAGE 1 OF 1

CHAIN-OF-CUSTODY RECORD

PROJECT ID: 101.00205.00019 Crowley P.O. No.: 101.00205.00019 SAMPLER: Amanda Mengniot (PRINTED NAME) (SIGNATURE) for MS

RELINQUISHED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:	RECEIVED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:
Mike Staton	6/20/13	8:45			
RELINQUISHED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:	RECEIVED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:

PLEASE SEE NOTES ON THE BACK OF THE COC REGARDING THE SAMPLE ACCEPTANCE POLICY AND THE METHOD 8290 MS/MSD & DUP

REQUESTED TAT: 21 DAYS

SHIP TO: ANALYTICAL PERSPECTIVES, 2714 EXCHANGE DRIVE, WILMINGTON, NC 28405, PH.: 910-794-1613

METHOD OF SHIPMENT: Fed Ex

SHIPMENT ID:

ATTN: YVES TONDEUR

QAPP REFERENCE: _____
SAMPLE ACCEPTANCE POLICY (ON BACK SIDE)

	SAMPLE ID	DATE	TIME	SAMPLE DESCRIPTION	MS/MSD	DUP	METHOD 8290	METHOD 1613	METHOD 1668A	METHOD 1668B	METHOD 1668C	PAHS BY HRMS	QUANTIC	U-SVOA	WHO-12/WHO-28	CONTAINER(S) QTY	CONTAINER(S) TYPE	MATRIX	
21.	EB-46-1.0	6/14/13	1130	Soil			X									1	4oz	Soil	
22.	EB-46-8.0	"	1240	Soil			X									"	"	"	
23.	EB-46-10	"	1250	Soil			X									"	"	"	Hold

SPECIAL INSTRUCTIONS/COMMENTS: (PLEASE CIRCLE OPTION BELOW)

"DF ONLY" (circled) "DF & PCB" "DF & PAH" "DF & PCB & PAH"

"TRI – OCTA" "2,3,7,8-TCDD & F ONLY" "2,3,7,8-TCDD ONLY"

PLEASE SPECIFY TEFs: (PLEASE CHECK BOXES BELOW)

☐ "ITEFS" ☐ "WHO-98" ☒ "WHO-05" ☐ "MA-TEFS" ☐ "CT-TEFS"

SEND DOCUMENTATION & RESULTS TO:

NAME: Mike Staton
COMPANY: SLR Consulting
ADDRESS: 2211B 20th Ave SE Suite F202
CITY: Bothell
STATE: WA ZIP: 98021
PH.: 425-402-8800
E-MAIL: MStaton@slrconsulting.com

BILL TO: (☑ CHECK IF SAME)

NAME:
COMPANY:
ADDRESS:
CITY:
STATE: ZIP:
PH.:

* Samples rec'd NOT on COC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 21, 2013

Mike Staton
SLR International Corp.
22118 20th Ave. SE., G-202
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the additional testing of material submitted on June 17, 2013 from the Crowley 8th Avenue Terminals 101.00205.00019, F&BI 306269 project. There are 5 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michele Costales Poquiz

Michele Costales Poquiz
Chemist

Enclosures
SLR0821R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 17, 2013 by Friedman & Bruya, Inc. from the SLR International Corp. Crowley 8th Avenue Terminals 101.00205.00019, F&BI 306269 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
306269-01	EMW-4D-2.5'
306269-02	EMW-4D-5.0'
306269-03	EMW-4D-7.5'
306269-04	EMW-4D-12.5'
306269-05	EMW-4D-15.0'
306269-06	EMW-4D-20.0'
306269-07	EMW-4D-25.0'
306269-08	EMW-4D-30.0'
306269-09	EMW-4D-35.0'
306269-10	EMW-14D-1.0'
306269-11	EMW-14D-2.5'
306269-12	EMW-14D-5.0'
306269-13	EMW-14D-7.5'
306269-14	EMW-14D-10.0'
306269-15	EMW-14D-12.5'
306269-16	EMW-14D-15.0'
306269-17	EMW-14D-20.0'
306269-18	EMW-14D-25.0'
306269-19	EMW-14D-30.0'
306269-20	EMW-14D-35.0'
306269-21	EMW-14D-40.0'
306269-22	EMW-14D-45.0'
306269-23	EMW-14D-50.0'
306269-24	Trip Blank

Semivolatile Organic Compounds by EPA Method 8270D SIM

The sample EMW-4D-20.0' was analyzed outside of the EPA recommended holding time of 14 days. The results have been flagged accordingly. However, it should be noted that the sample was stored at 6°C and there was likely no measurable loss of polynuclear aromatic hydrocarbons (PNAs)[1] prior to the time of extraction during the additional storage period of 31 days.

All other quality control requirements were acceptable.

[1] U.S. Environmental Protection Agency. *Sample Holding Time Reevaluation.* EPA/600/R-05/124, October 2005.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	EMW-4D-20.0'	Client:	SLR International Corp.
Date Received:	06/17/13	Project:	Crowley 101.00205.00019
Date Extracted:	08/01/13	Lab ID:	306269-06
Date Analyzed:	08/02/13	Data File:	080208.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	74	50	150
Benzo(a)anthracene-d12	93	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.00050
Acenaphthylene	0.00043
Acenaphthene	0.0018
Fluorene	0.00038
Phenanthrene	0.0040
Anthracene	0.00075
Fluoranthene	0.0082
Pyrene	0.0072
Benz(a)anthracene	0.0033
Chrysene	0.0040
Benzo(a)pyrene	0.0029
Benzo(b)fluoranthene	0.0055
Benzo(k)fluoranthene	0.0015
Indeno(1,2,3-cd)pyrene	0.0025
Dibenz(a,h)anthracene	0.00066
Benzo(g,h,i)perylene	0.0024

Note - Analysis performed outside the method or client-specified holding time requirement.

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	Not Applicable	Project:	Crowley 101.00205.00019
Date Extracted:	08/01/13	Lab ID:	03-1488 mb
Date Analyzed:	08/02/13	Data File:	080205.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	91	50	150
Benzo(a)anthracene-d12	115	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.00022
Acenaphthylene	<0.000091
Acenaphthene	<0.00014
Fluorene	<0.00015
Phenanthrene	<0.00032
Anthracene	<0.000088
Fluoranthene	<0.00028
Pyrene	<0.00026
Benz(a)anthracene	<0.00018
Chrysene	<0.00019
Benzo(a)pyrene	<0.00022
Benzo(b)fluoranthene	<0.00018
Benzo(k)fluoranthene	<0.00036
Indeno(1,2,3-cd)pyrene	<0.00062
Dibenz(a,h)anthracene	<0.00034
Benzo(g,h,i)perylene	<0.00034

Date of Report: 08/21/13
Date Received: 06/17/13
Project: Crowley 8th Avenue Terminals 101.00205.00019, F&BI 306269

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	85	90	58-121	6
Acenaphthylene	mg/kg (ppm)	0.17	93	98	54-121	5
Acenaphthene	mg/kg (ppm)	0.17	89	94	54-123	5
Fluorene	mg/kg (ppm)	0.17	94	98	56-127	4
Phenanthrene	mg/kg (ppm)	0.17	91	94	55-122	3
Anthracene	mg/kg (ppm)	0.17	88	92	50-120	4
Fluoranthene	mg/kg (ppm)	0.17	96	97	54-129	1
Pyrene	mg/kg (ppm)	0.17	98	104	53-127	6
Benz(a)anthracene	mg/kg (ppm)	0.17	91	92	51-115	1
Chrysene	mg/kg (ppm)	0.17	95	101	55-129	6
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	99	105	56-123	6
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	84	86	54-131	2
Benzo(a)pyrene	mg/kg (ppm)	0.17	78	80	51-118	3
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	90	94	49-148	4
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	88	91	50-141	3
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	87	91	52-131	4

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

306269

SAMPLE CHAIN OF CUSTODY

KJ 06-17-13 VSO/V1/DO4

Page # 1 of 3

Send Report To Mike Staton

Company SLR International Corporation

Address 22118 20th Ave. SE, Ste. G202

City, State, ZIP Bothell, WA 98021

Phone # 425-402-8800 Fax #

SAMPLERS (signature)

PROJECT NAME/NO. Crowley 8th Avenue Terminal 101.00205.00019

PO#

REMARKS NWTPH-Dx AFTER SILICA GEL CLEANUP

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

⊗=added per Mike Staton (jw 6/19/13)

✓=analyze per Mike Staton (jw 7/9/13)
V=extract & hold per Mike Staton (jw 7/9/13)
⊗=analyze per Mike Staton (jw 7/15/13)
*=analyze per Mike Staton (jw 7/24/13)
#=analyze per Mike Staton (jw 7/31/13)
⊛=extract & hold per Mike Staton (jw 7/31/13)
* (NP) per dlw 6-18-13

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Metals (priority pollutants)	PCBs by 8082	PAHs by 8270D SIM	Hex Cr by 7196A	Mercury by 1631E		Notes
EMW-16D-2.5'	01	6/17/13	0850	soil	10	⊗			⊗	⊗		⊗	⊗	⊗		⊗		Archive
EMW-16D-5.0'	02	6/17/13	0905	soil	10	X	✓		X	X		X	X	X		X		No GRO per Mike Staton
EMW-16D-7.5'	03	6/17/13	0910	soil	10	⊗			⊗	⊗		⊗	⊗	⊗		⊗		Archive
EMW-16D-12.5'	04	6/17/13	0930	soil	10									✓				Archive
EMW-16D-15.0'	05	6/17/13	0945	soil	10													Archive
EMW-16D-20.0'	06	6/17/13	1000	soil	10									★				Archive
EMW-16D-25.0'	07	6/17/13	1015	soil	10													Archive
EMW-16D-30.0'	08	6/17/13	1025	soil	10													Archive
EMW-16D-35.0'	09	6/17/13	1055	soil	10									⊛				Archive
EMW-14D-1.0'	10	6/17/13	1150	soil	10	X			X	X		X	X	X		X		

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Amanda Margrist	SLR	6/17/13	1645
Received by:	DJ VS	FXBI	"	"
Relinquished by:		Samples received at 6 °C		
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

306269

SAMPLE CHAIN OF CUSTODY K J 06-17-13 VS2/V1/D04

Page # 2 of 3

Send Report To Mike Stetson

Company SLR International Corporation

Address 22118 20th Ave. SE, Ste. 6202

City, State, ZIP Bothell, WA 98021

Phone # 425-402-8800 Fax #

SAMPLERS (signature)

PROJECT NAME/NO. Crowley 8th Avenue Terminals 101.00205.00019

PO#

REMARKS NWTPH-Dx AFTER SILICA GEL CLEANUP

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	Metals (arsenic only)	PCBs	PAHs by 8270D-SIM	Hex Cr. by 7196A	Mercury by 1631E	Notes
EMW-14D-2.5'	11	6/17/13	1205	soil	10												Archive
EMW-14D-5.0'	12	6/17/13	1215	soil	10	X			X	X		X	X	X		X	~~Archive~~ AB
EMW-14D-7.5'	13	6/17/13	1230	soil	10												Archive
EMW-14D-10.0'	14	6/17/13	1240	soil	10	X			X	X		X	X	X		X	
EMW-14D-12.5'	15	6/17/13	1255	soil	10												Archive
EMW-14D-15.0'	16	6/17/13	1305	soil	10					✓		✓		✓		✓	Archive
EMW-14D-20.0'	17	6/17/13	1315	soil	10							✓					canceled per Mike S. per Archive
EMW-14D-25.0'	18	6/17/13	1325	soil	10					✓				✓			Archive
EMW-14D-30.0'	19	6/17/13	1335	soil	10							✓					canceled per Mike S. per Archive
EMW-14D-35.0'	20	6/17/13	1350	soil	10					✓				✓			Archive

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Amanda Magnuson	SLR	6/17/13	1645
Received by:	DJ VO	F+BE	11	11
Relinquished by:				
Received by:		Samples received at 6 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

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306269

SAMPLE CHAIN OF CUSTODY

KJ 06-17-13

VS2/U1/ D04

Page # 3 of 3

Send Report To Mike Station

Company SLR International Corporation

Address 22118 20th Ave. SE, Ste. G202

City, State, ZIP Bothell, WA 98021

Phone # 425-402-8800 Fax #

SAMPLERS (signature)

PROJECT NAME/NO. Crowley 8th Avenue Terminals 101.00205.00019

PO#

REMARKS NWTPH-Dx AFTER SILICA GEL CLEANUP

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Metals (Priority Pollutants plus Ba)	PCBs by 8082	PAHs by 8270 SIM	Hex. Cr. by 7196A	Mercury by 1631E		Notes
EMW-14D-40.0'	21 J	6/17/13	1400	soil	10							✓						canceled per mike S. Archive
EMW-14D-45.0'	22	6/17/13	1425	soil	10													Archive
EMW-14D-50.0'	23	6/17/13	1435	soil	10					✓				*				Archive
TripBlank	24 B	–	–	water	2													added at lab 6-18-13

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMSVCOCVCOC.DOC

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Amanda Mengis	SLR	6/17/13	1645
Received by:		DD NO	F&BE	"	"
Relinquished by:					
Received by:			Samples received at 5.0 °C		

FINAL DATA GAPS REPORT CONTINUED

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

July 22, 2013

Mike Staton
SLR International Corp.
22118 20th Ave. SE., G-202
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on June 7, 2013 from the Crowley Seattle 101.00205.00019, F&BI 306117 project. There are 46 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michele Costales Poquiz

Michele Costales Poquiz
Chemist

Enclosures
SLR0722R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 7, 2013 by Friedman & Bruya, Inc. from the SLR International Corp. Crowley Seattle 101.00205.00019, F&BI 306117 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
306117-01	DP2CB5-060613
306117-02	DP3CB1-060613
306117-03	DP10CB1-060613
306117-04	DP6CB1-060613
306117-05	DP3CB3-060613

Total Petroleum Hydrocarbons as Gasoline by Method NWTPH-Gx

All quality control requirements were acceptable.

Total Petroleum Hydrocarbons as Diesel and Motor Oil by Method NWTPH-Dx with Silica Gel

All quality control requirements were acceptable.

Volatile Organic Compounds by EPA Method 8260C

Analysis of the samples by direct sparge resulted in failing internal standards, indicating that the direct sparge extraction technique is not appropriate for the sample matrix. The samples were re-extracted using the methanolic technique. The results from the methanolic analysis are enclosed.

The calibration result for bromomethane fell outside of acceptance criteria. The values reported are estimates.

The presence of chloroform in the samples is likely due to laboratory contamination. The results have been flagged accordingly.

The chlorobenzene result in the laboratory control sample was out of control limits. The values reported are estimates.

The percent recovery for dichlorodifluoromethane and bromomethane in the matrix spike (MS) and/or matrix spike duplicate (MSD) exceeded acceptance criteria. The results have been flagged accordingly.

Semivolatile Organic Compounds by EPA Method 8270D

The samples were diluted due to matrix interferences. The reporting limits have been raised accordingly.

The percent recovery for 2,4-dinitrophenol in the MS exceeded acceptance criteria. In addition, the relative percent difference (RPD) for the MS and MSD exceeded acceptance criteria for several compounds. The results have been flagged accordingly.

The RPD for the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) exceeded acceptance criteria for 4-chloroaniline. The result has been flagged accordingly.

Polynuclear Aromatic Hydrocarbons by EPA Method 8270D SIM
The samples were diluted due to matrix interferences. The reporting limits have been raised accordingly.

Polychlorinated Biphenyls by Method 8082A
The samples were diluted due to matrix interferences. The reporting limits have been raised accordingly.

Total Metals by EPA Method 200.8
The samples DP3CB1-060613, DP10CB1-060613, DP6CB1-060613, and DP3CB3-060613 were diluted due to matrix interferences. The reporting limits have been raised accordingly.

Copper was identified at a low level in the method blank. The results have been flagged accordingly.

The percent recovery for antimony in the MS exceeded acceptance criteria. The result has been flagged accordingly.

Total Mercury by EPA Method 1631E
All quality control requirements were acceptable.

Total Organic Carbon by EPA Method 9060M
The samples were sent to Analytical Resources, Inc. for analysis. Review of the enclosed report indicates all quality control requirements were acceptable.

Grain Size by ASTM D-422
The samples were sent to Budinger & Associates for analysis. The report generated by B&A is enclosed.

Date of Report: 07/22/13
Date Received: 06/07/13
Project: Crowley Seattle 101.00205.00019, F&BI 306117
Date Extracted: 06/19/13
Date Analyzed: 06/19/13

RESULTS FROM THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
DP2CB5-060613 306117-01	1.1	79
DP3CB1-060613 306117-02	0.57	78
DP10CB1-060613 306117-03	0.55	78
DP6CB1-060613 306117-04	0.43	82
DP3CB3-060613 306117-05	0.65	75
Method Blank 03-1162 MB	<0.20	83

Date of Report: 07/22/13
Date Received: 06/07/13
Project: Crowley Seattle 101.00205.00019, F&BI 306117
Date Extracted: 06/10/13
Date Analyzed: 06/10/13 and 06/12/13

RESULTS FROM THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 53-144)
DP2CB5-060613 306117-01	180 x	1,900	101
DP3CB1-060613 306117-02 1/10	210 x	2,200	116
DP10CB1-060613 306117-03 1/10	240 x	2,300	108
DP6CB1-060613 306117-04	230 x	1,600	96
DP3CB3-060613 306117-05	220 x	2,600	96
Method Blank 03-1129 MB	<2.8 j	<4.5 j	114

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DP2CB5-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-01
Date Analyzed:	06/18/13	Data File:	061822.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.020	1,3-Dichloropropane	<0.020
Chloromethane	<0.025	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.025
Bromomethane	<0.034 ca	1,2-Dibromoethane (EDB)	<0.029
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	<0.021	Ethylbenzene	<0.013
Acetone	<0.21	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.027	m,p-Xylene	<0.03
Methylene chloride	<0.054	o-Xylene	<0.020
Methyl t-butyl ether (MTBE)	<0.013	Styrene	<0.021
trans-1,2-Dichloroethene	<0.023	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.035
2,2-Dichloropropane	<0.025	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.021	Bromobenzene	<0.012
Chloroform	0.020 lc	1,3,5-Trimethylbenzene	<0.011
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.021	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.030	tert-Butylbenzene	<0.021
Benzene	<0.014	1,2,4-Trimethylbenzene	<0.016
Trichloroethene	<0.033	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	<0.012
Bromodichloromethane	<0.025	1,3-Dichlorobenzene	<0.020
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.023	1,2-Dibromo-3-chloropropane	<0.080
Toluene	0.46	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.041
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.095	1,2,3-Trichlorobenzene	<0.019

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DP3CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-02
Date Analyzed:	06/18/13	Data File:	061823.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.020	1,3-Dichloropropane	<0.020
Chloromethane	<0.025	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.025
Bromomethane	<0.034 ca	1,2-Dibromoethane (EDB)	<0.029
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	<0.021	Ethylbenzene	<0.013
Acetone	<0.21	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.027	m,p-Xylene	<0.03
Methylene chloride	<0.054	o-Xylene	0.026
Methyl t-butyl ether (MTBE)	<0.013	Styrene	<0.021
trans-1,2-Dichloroethene	<0.023	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.035
2,2-Dichloropropane	<0.025	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.021	Bromobenzene	<0.012
Chloroform	<0.017	1,3,5-Trimethylbenzene	0.049
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.021	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.030	tert-Butylbenzene	<0.021
Benzene	<0.014	1,2,4-Trimethylbenzene	0.10
Trichloroethene	<0.033	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	<0.012
Bromodichloromethane	<0.025	1,3-Dichlorobenzene	<0.020
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.023	1,2-Dibromo-3-chloropropane	<0.080
Toluene	<0.017	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.041
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.095	1,2,3-Trichlorobenzene	<0.019

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DP10CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-03
Date Analyzed:	06/18/13	Data File:	061824.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.020	1,3-Dichloropropane	<0.020
Chloromethane	<0.025	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.025
Bromomethane	<0.034 ca	1,2-Dibromoethane (EDB)	<0.029
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	<0.021	Ethylbenzene	0.021
Acetone	<0.21	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.027	m,p-Xylene	0.088
Methylene chloride	<0.054	o-Xylene	0.065
Methyl t-butyl ether (MTBE)	<0.013	Styrene	<0.021
trans-1,2-Dichloroethene	<0.023	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.035
2,2-Dichloropropane	<0.025	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.021	Bromobenzene	<0.012
Chloroform	<0.017	1,3,5-Trimethylbenzene	0.060
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.021	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.030	tert-Butylbenzene	<0.021
Benzene	<0.014	1,2,4-Trimethylbenzene	0.13
Trichloroethene	<0.033	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	<0.012
Bromodichloromethane	<0.025	1,3-Dichlorobenzene	<0.020
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.023	1,2-Dibromo-3-chloropropane	<0.080
Toluene	0.024	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.041
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.095	1,2,3-Trichlorobenzene	<0.019

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DP6CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-04
Date Analyzed:	06/18/13	Data File:	061825.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.020	1,3-Dichloropropane	<0.020
Chloromethane	<0.025	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.025
Bromomethane	<0.034 ca	1,2-Dibromoethane (EDB)	<0.029
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	0.051	Ethylbenzene	<0.013
Acetone	<0.21	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.027	m,p-Xylene	<0.03
Methylene chloride	<0.054	o-Xylene	<0.020
Methyl t-butyl ether (MTBE)	<0.013	Styrene	<0.021
trans-1,2-Dichloroethene	<0.023	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.035
2,2-Dichloropropane	<0.025	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.021	Bromobenzene	<0.012
Chloroform	0.021 lc	1,3,5-Trimethylbenzene	0.020
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.021	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.030	tert-Butylbenzene	<0.021
Benzene	<0.014	1,2,4-Trimethylbenzene	0.028
Trichloroethene	<0.033	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	<0.012
Bromodichloromethane	<0.025	1,3-Dichlorobenzene	<0.020
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.023	1,2-Dibromo-3-chloropropane	<0.080
Toluene	<0.017	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.041
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.095	1,2,3-Trichlorobenzene	<0.019

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DP3CB3-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-05
Date Analyzed:	06/18/13	Data File:	061826.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.020	1,3-Dichloropropane	<0.020
Chloromethane	<0.025	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.025
Bromomethane	<0.034 ca	1,2-Dibromoethane (EDB)	<0.029
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	<0.021	Ethylbenzene	<0.013
Acetone	<0.21	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.027	m,p-Xylene	<0.03
Methylene chloride	<0.054	o-Xylene	<0.020
Methyl t-butyl ether (MTBE)	<0.013	Styrene	<0.021
trans-1,2-Dichloroethene	<0.023	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.035
2,2-Dichloropropane	<0.025	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.021	Bromobenzene	<0.012
Chloroform	0.041 lc	1,3,5-Trimethylbenzene	<0.011
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.021	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.030	tert-Butylbenzene	<0.021
Benzene	<0.014	1,2,4-Trimethylbenzene	<0.016
Trichloroethene	<0.033	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	<0.012
Bromodichloromethane	<0.025	1,3-Dichlorobenzene	<0.020
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.023	1,2-Dibromo-3-chloropropane	<0.080
Toluene	<0.017	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.041
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.095	1,2,3-Trichlorobenzene	<0.019

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	03-1113 mb
Date Analyzed:	06/18/13	Data File:	061810.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.020	1,3-Dichloropropane	<0.020
Chloromethane	<0.025	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.025
Bromomethane	<0.034 ca	1,2-Dibromoethane (EDB)	<0.029
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	<0.021	Ethylbenzene	<0.013
Acetone	<0.21	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.027	m,p-Xylene	<0.03
Methylene chloride	<0.054	o-Xylene	<0.020
Methyl t-butyl ether (MTBE)	<0.013	Styrene	<0.021
trans-1,2-Dichloroethene	<0.023	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.035
2,2-Dichloropropane	<0.025	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.021	Bromobenzene	<0.012
Chloroform	<0.017	1,3,5-Trimethylbenzene	<0.011
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.021	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.030	tert-Butylbenzene	<0.021
Benzene	<0.014	1,2,4-Trimethylbenzene	<0.016
Trichloroethene	<0.033	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	<0.012
Bromodichloromethane	<0.025	1,3-Dichlorobenzene	<0.020
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.023	1,2-Dibromo-3-chloropropane	<0.080
Toluene	<0.017	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.041
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.095	1,2,3-Trichlorobenzene	<0.019

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DP2CB5-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-01 1/400
Date Analyzed:	06/24/13	Data File:	062418.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	18 ds	56	115
Phenol-d6	46 ds	54	113
Nitrobenzene-d5	40 ds	31	164
2-Fluorobiphenyl	68 ds	47	133
2,4,6-Tribromophenol	14 ds	35	141
Terphenyl-d14	88 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<2.2	2,4,6-Trichlorophenol	<3.2
Bis(2-chloroethyl) ether	<0.64	2,4,5-Trichlorophenol	<3.8
2-Chlorophenol	<2.5	2-Chloronaphthalene	<0.56
1,3-Dichlorobenzene	<1	2-Nitroaniline	<1
1,4-Dichlorobenzene	<0.96	Dimethyl phthalate	<0.48
1,2-Dichlorobenzene	<1.6	2,6-Dinitrotoluene	<0.72
Benzyl alcohol	<2	3-Nitroaniline	<7
Bis(2-chloroisopropyl) ether	<0.64	2,4-Dinitrophenol	<5.5
2-Methylphenol	<2.6	Dibenzofuran	<0.4
Hexachloroethane	<1.4	2,4-Dinitrotoluene	<0.64
N-Nitroso-di-n-propylamine	<1.2	4-Nitrophenol	<7.1
3-Methylphenol + 4-Methylphenol	<5.8	Diethyl phthalate	<1.6
Nitrobenzene	<1	4-Chlorophenyl phenyl ether	<0.64
Isophorone	<0.48	N-Nitrosodiphenylamine	<0.4
2-Nitrophenol	<3.3	4-Nitroaniline	<7.3
2,4-Dimethylphenol	<7.4	4,6-Dinitro-2-methylphenol	<4.2
Benzoic acid	<22	4-Bromophenyl phenyl ether	<0.64
Bis(2-chloroethoxy)methane	<0.56	Hexachlorobenzene	<0.4
2,4-Dichlorophenol	<2.3	Pentachlorophenol	<2.5
1,2,4-Trichlorobenzene	<1.4	Carbazole	<0.8
Hexachlorobutadiene	<0.8	Di-n-butyl phthalate	<8
4-Chloroaniline	<71	Benzyl butyl phthalate	7.6
4-Chloro-3-methylphenol	<1.8	Bis(2-ethylhexyl) phthalate	6.2
2-Methylnaphthalene	<0.4	Di-n-octyl phthalate	<1.4
Hexachlorocyclopentadiene	<0.88		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DP3CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-02 1/400
Date Analyzed:	06/24/13	Data File:	062419.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	26 ds	56	115
Phenol-d6	26 ds	54	113
Nitrobenzene-d5	80 ds	31	164
2-Fluorobiphenyl	60 ds	47	133
2,4,6-Tribromophenol	14 ds	35	141
Terphenyl-d14	100 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<2.2	2,4,6-Trichlorophenol	<3.2
Bis(2-chloroethyl) ether	<0.64	2,4,5-Trichlorophenol	<3.8
2-Chlorophenol	<2.5	2-Chloronaphthalene	<0.56
1,3-Dichlorobenzene	<1	2-Nitroaniline	<1
1,4-Dichlorobenzene	<0.96	Dimethyl phthalate	<0.48
1,2-Dichlorobenzene	<1.6	2,6-Dinitrotoluene	<0.72
Benzyl alcohol	<2	3-Nitroaniline	<7
Bis(2-chloroisopropyl) ether	<0.64	2,4-Dinitrophenol	<5.5
2-Methylphenol	<2.6	Dibenzofuran	<0.4
Hexachloroethane	<1.4	2,4-Dinitrotoluene	<0.64
N-Nitroso-di-n-propylamine	<1.2	4-Nitrophenol	<7.1
3-Methylphenol + 4-Methylphenol	<5.8	Diethyl phthalate	4.9
Nitrobenzene	<1	4-Chlorophenyl phenyl ether	<0.64
Isophorone	<0.48	N-Nitrosodiphenylamine	<0.4
2-Nitrophenol	<3.3	4-Nitroaniline	<7.3
2,4-Dimethylphenol	<7.4	4,6-Dinitro-2-methylphenol	<4.2
Benzoic acid	<22	4-Bromophenyl phenyl ether	<0.64
Bis(2-chloroethoxy)methane	<0.56	Hexachlorobenzene	<0.4
2,4-Dichlorophenol	<2.3	Pentachlorophenol	<2.5
1,2,4-Trichlorobenzene	<1.4	Carbazole	<0.8
Hexachlorobutadiene	<0.8	Di-n-butyl phthalate	<8
4-Chloroaniline	<71	Benzyl butyl phthalate	<2.3
4-Chloro-3-methylphenol	<1.8	Bis(2-ethylhexyl) phthalate	7.7
2-Methylnaphthalene	<0.4	Di-n-octyl phthalate	<1.4
Hexachlorocyclopentadiene	<0.88		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DP10CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-03 1/400
Date Analyzed:	06/24/13	Data File:	062420.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	26 ds	56	115
Phenol-d6	26 ds	54	113
Nitrobenzene-d5	40 ds	31	164
2-Fluorobiphenyl	80 ds	47	133
2,4,6-Tribromophenol	0 ds	35	141
Terphenyl-d14	60 ds J	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<2.2	2,4,6-Trichlorophenol	<3.2
Bis(2-chloroethyl) ether	<0.64	2,4,5-Trichlorophenol	<3.8
2-Chlorophenol	<2.5	2-Chloronaphthalene	<0.56
1,3-Dichlorobenzene	<1	2-Nitroaniline	<1
1,4-Dichlorobenzene	<0.96	Dimethyl phthalate	<0.48
1,2-Dichlorobenzene	<1.6	2,6-Dinitrotoluene	<0.72
Benzyl alcohol	<2	3-Nitroaniline	<7
Bis(2-chloroisopropyl) ether	<0.64	2,4-Dinitrophenol	<5.5
2-Methylphenol	<2.6	Dibenzofuran	<0.4
Hexachloroethane	<1.4	2,4-Dinitrotoluene	<0.64
N-Nitroso-di-n-propylamine	<1.2	4-Nitrophenol	<7.1
3-Methylphenol + 4-Methylphenol	<5.8	Diethyl phthalate	3.1
Nitrobenzene	<1	4-Chlorophenyl phenyl ether	<0.64
Isophorone	<0.48	N-Nitrosodiphenylamine	<0.4
2-Nitrophenol	<3.3	4-Nitroaniline	<7.3
2,4-Dimethylphenol	<7.4	4,6-Dinitro-2-methylphenol	<4.2
Benzoic acid	<22	4-Bromophenyl phenyl ether	<0.64
Bis(2-chloroethoxy)methane	<0.56	Hexachlorobenzene	<0.4
2,4-Dichlorophenol	<2.3	Pentachlorophenol	<2.5
1,2,4-Trichlorobenzene	<1.4	Carbazole	<0.8
Hexachlorobutadiene	<0.8	Di-n-butyl phthalate	<8
4-Chloroaniline	<71	Benzyl butyl phthalate	<2.3 J
4-Chloro-3-methylphenol	<1.8	Bis(2-ethylhexyl) phthalate	7.7 J
2-Methylnaphthalene	<0.4	Di-n-octyl phthalate	<1.4 J
Hexachlorocyclopentadiene	<0.88		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DP6CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-04 1/400
Date Analyzed:	06/24/13	Data File:	062417.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	40 ds	56	115
Phenol-d6	40 ds	54	113
Nitrobenzene-d5	20 ds	31	164
2-Fluorobiphenyl	60 ds	47	133
2,4,6-Tribromophenol	14 ds	35	141
Terphenyl-d14	80 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<2.2	2,4,6-Trichlorophenol	<3.2
Bis(2-chloroethyl) ether	<0.64	2,4,5-Trichlorophenol	<3.8
2-Chlorophenol	<2.5	2-Chloronaphthalene	<0.56
1,3-Dichlorobenzene	<1	2-Nitroaniline	<1
1,4-Dichlorobenzene	<0.96	Dimethyl phthalate	<0.48
1,2-Dichlorobenzene	<1.6	2,6-Dinitrotoluene	<0.72
Benzyl alcohol	<2	3-Nitroaniline	<7
Bis(2-chloroisopropyl) ether	<0.64	2,4-Dinitrophenol	<5.5
2-Methylphenol	<2.6	Dibenzofuran	<0.4
Hexachloroethane	<1.4	2,4-Dinitrotoluene	<0.64
N-Nitroso-di-n-propylamine	<1.2	4-Nitrophenol	<7.1
3-Methylphenol + 4-Methylphenol	<5.8	Diethyl phthalate	<1.6
Nitrobenzene	<1	4-Chlorophenyl phenyl ether	<0.64
Isophorone	<0.48	N-Nitrosodiphenylamine	<0.4
2-Nitrophenol	<3.3	4-Nitroaniline	<7.3
2,4-Dimethylphenol	<7.4	4,6-Dinitro-2-methylphenol	<4.2
Benzoic acid	<22	4-Bromophenyl phenyl ether	<0.64
Bis(2-chloroethoxy)methane	<0.56	Hexachlorobenzene	<0.4
2,4-Dichlorophenol	<2.3	Pentachlorophenol	<2.5
1,2,4-Trichlorobenzene	<1.4	Carbazole	<0.8
Hexachlorobutadiene	<0.8	Di-n-butyl phthalate	<8
4-Chloroaniline	<71	Benzyl butyl phthalate	<2.3
4-Chloro-3-methylphenol	<1.8	Bis(2-ethylhexyl) phthalate	<5.4
2-Methylnaphthalene	<0.4	Di-n-octyl phthalate	<1.4
Hexachlorocyclopentadiene	<0.88		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DP3CB3-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-05 1/200
Date Analyzed:	06/24/13	Data File:	062416.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	27 ds	56	115
Phenol-d6	27 ds	54	113
Nitrobenzene-d5	60 ds	31	164
2-Fluorobiphenyl	60 ds	47	133
2,4,6-Tribromophenol	20 ds	35	141
Terphenyl-d14	70 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<1.1	2,4,6-Trichlorophenol	<1.6
Bis(2-chloroethyl) ether	<0.32	2,4,5-Trichlorophenol	<1.9
2-Chlorophenol	<1.2	2-Chloronaphthalene	<0.28
1,3-Dichlorobenzene	<0.52	2-Nitroaniline	<0.52
1,4-Dichlorobenzene	<0.48	Dimethyl phthalate	<0.24
1,2-Dichlorobenzene	<0.8	2,6-Dinitrotoluene	<0.36
Benzyl alcohol	<1	3-Nitroaniline	<3.5
Bis(2-chloroisopropyl) ether	<0.32	2,4-Dinitrophenol	<2.8
2-Methylphenol	<1.3	Dibenzofuran	<0.2
Hexachloroethane	<0.68	2,4-Dinitrotoluene	<0.32
N-Nitroso-di-n-propylamine	<0.6	4-Nitrophenol	<3.6
3-Methylphenol + 4-Methylphenol	<2.9	Diethyl phthalate	<0.8
Nitrobenzene	<0.52	4-Chlorophenyl phenyl ether	<0.32
Isophorone	<0.24	N-Nitrosodiphenylamine	<0.2
2-Nitrophenol	<1.6	4-Nitroaniline	<3.6
2,4-Dimethylphenol	<3.7	4,6-Dinitro-2-methylphenol	<2.1
Benzoic acid	<11	4-Bromophenyl phenyl ether	<0.32
Bis(2-chloroethoxy)methane	<0.28	Hexachlorobenzene	<0.2
2,4-Dichlorophenol	<1.2	Pentachlorophenol	<1.2
1,2,4-Trichlorobenzene	<0.68	Carbazole	<0.4
Hexachlorobutadiene	<0.4	Di-n-butyl phthalate	<4
4-Chloroaniline	<36	Benzyl butyl phthalate	<1.2
4-Chloro-3-methylphenol	<0.88	Bis(2-ethylhexyl) phthalate	<2.7
2-Methylnaphthalene	<0.2	Di-n-octyl phthalate	<0.68
Hexachlorocyclopentadiene	<0.44		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	03-1182 mb
Date Analyzed:	06/19/13	Data File:	061905.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	82	56	115
Phenol-d6	93	54	113
Nitrobenzene-d5	92	31	164
2-Fluorobiphenyl	91	47	133
2,4,6-Tribromophenol	97	35	141
Terphenyl-d14	97	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.0054	2,4,6-Trichlorophenol	<0.008
Bis(2-chloroethyl) ether	<0.0016	2,4,5-Trichlorophenol	<0.0096
2-Chlorophenol	<0.0062	2-Chloronaphthalene	<0.0014
1,3-Dichlorobenzene	<0.0026	2-Nitroaniline	<0.0026
1,4-Dichlorobenzene	<0.0024	Dimethyl phthalate	<0.0012
1,2-Dichlorobenzene	<0.004	2,6-Dinitrotoluene	<0.0018
Benzyl alcohol	<0.005	3-Nitroaniline	<0.017
Bis(2-chloroisopropyl) ether	<0.0016	2,4-Dinitrophenol	<0.014
2-Methylphenol	<0.0064	Dibenzofuran	<0.001
Hexachloroethane	<0.0034	2,4-Dinitrotoluene	<0.0016
N-Nitroso-di-n-propylamine	<0.003	4-Nitrophenol	<0.018
3-Methylphenol + 4-Methylphenol	<0.014	Diethyl phthalate	<0.004
Nitrobenzene	<0.0026	4-Chlorophenyl phenyl ether	<0.0016
Isophorone	<0.0012	N-Nitrosodiphenylamine	<0.001
2-Nitrophenol	<0.0082	4-Nitroaniline	<0.018
2,4-Dimethylphenol	<0.019	4,6-Dinitro-2-methylphenol	<0.011
Benzoic acid	<0.055	4-Bromophenyl phenyl ether	<0.0016
Bis(2-chloroethoxy)methane	<0.0014	Hexachlorobenzene	<0.001
2,4-Dichlorophenol	<0.0058	Pentachlorophenol	<0.0062
1,2,4-Trichlorobenzene	<0.0034	Carbazole	<0.002
Hexachlorobutadiene	<0.002	Di-n-butyl phthalate	<0.02
4-Chloroaniline	<0.18	Benzyl butyl phthalate	<0.0058
4-Chloro-3-methylphenol	<0.0044	Bis(2-ethylhexyl) phthalate	<0.013
2-Methylnaphthalene	<0.001	Di-n-octyl phthalate	<0.0034
Hexachlorocyclopentadiene	<0.0022		

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DP2CB5-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-01 1/400
Date Analyzed:	06/23/13	Data File:	062239.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	650 ds	50	150
Benzo(a)anthracene-d12	194 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.088
Acenaphthylene	<0.036
Acenaphthene	<0.056
Fluorene	<0.06
Phenanthrene	0.47
Anthracene	0.063
Fluoranthene	0.74
Pyrene	0.69
Benz(a)anthracene	0.28
Chrysene	0.40
Benzo(a)pyrene	0.29
Benzo(b)fluoranthene	0.47
Benzo(k)fluoranthene	0.16
Indeno(1,2,3-cd)pyrene	0.26
Dibenz(a,h)anthracene	<0.14
Benzo(g,h,i)perylene	0.29

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DP3CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-02 1/400
Date Analyzed:	06/23/13	Data File:	062240.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	1084 ds	50	150
Benzo(a)anthracene-d12	250 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.12
Acenaphthylene	<0.036
Acenaphthene	<0.056
Fluorene	<0.06
Phenanthrene	0.41
Anthracene	0.046
Fluoranthene	0.65
Pyrene	0.66
Benz(a)anthracene	0.18
Chrysene	0.42
Benzo(a)pyrene	0.12
Benzo(b)fluoranthene	0.33
Benzo(k)fluoranthene	<0.14
Indeno(1,2,3-cd)pyrene	<0.25
Dibenz(a,h)anthracene	<0.14
Benzo(g,h,i)perylene	<0.14

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DP10CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-03 1/400
Date Analyzed:	06/24/13	Data File:	062407.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	1116 ds	50	150
Benzo(a)anthracene-d12	234 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	0.097
Acenaphthylene	<0.036
Acenaphthene	<0.056
Fluorene	<0.06
Phenanthrene	0.26
Anthracene	<0.035
Fluoranthene	0.50
Pyrene	0.52
Benz(a)anthracene	0.15
Chrysene	0.40
Benzo(a)pyrene	0.16
Benzo(b)fluoranthene	0.36
Benzo(k)fluoranthene	<0.14
Indeno(1,2,3-cd)pyrene	<0.25
Dibenz(a,h)anthracene	<0.14
Benzo(g,h,i)perylene	0.16

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DP6CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-04 1/400
Date Analyzed:	06/23/13	Data File:	062237.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	354 ds	50	150
Benzo(a)anthracene-d12	210 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.088
Acenaphthylene	<0.036
Acenaphthene	<0.056
Fluorene	<0.06
Phenanthrene	0.54
Anthracene	0.34
Fluoranthene	0.63
Pyrene	0.52
Benz(a)anthracene	0.21
Chrysene	0.38
Benzo(a)pyrene	0.13
Benzo(b)fluoranthene	0.33
Benzo(k)fluoranthene	<0.14
Indeno(1,2,3-cd)pyrene	<0.25
Dibenz(a,h)anthracene	<0.14
Benzo(g,h,i)perylene	<0.14

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DP3CB3-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306117-05 1/200
Date Analyzed:	06/23/13	Data File:	062238.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	308 ds	50	150
Benzo(a)anthracene-d12	119 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.044
Acenaphthylene	<0.018
Acenaphthene	<0.028
Fluorene	<0.03
Phenanthrene	0.24
Anthracene	0.021
Fluoranthene	0.37
Pyrene	0.35
Benz(a)anthracene	0.14
Chrysene	0.18
Benzo(a)pyrene	0.11
Benzo(b)fluoranthene	0.20
Benzo(k)fluoranthene	<0.072
Indeno(1,2,3-cd)pyrene	<0.12
Dibenz(a,h)anthracene	<0.068
Benzo(g,h,i)perylene	0.12

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/18/13	Lab ID:	03-1181 mb
Date Analyzed:	06/19/13	Data File:	061905.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	94	50	150
Benzo(a)anthracene-d12	110	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.00022
Acenaphthylene	<0.000091
Acenaphthene	<0.00014
Fluorene	<0.00015
Phenanthrene	<0.00032
Anthracene	<0.000088
Fluoranthene	<0.00028
Pyrene	<0.00026
Benz(a)anthracene	<0.00018
Chrysene	<0.00019
Benzo(a)pyrene	<0.00022
Benzo(b)fluoranthene	<0.00018
Benzo(k)fluoranthene	<0.00036
Indeno(1,2,3-cd)pyrene	<0.00062
Dibenz(a,h)anthracene	<0.00034
Benzo(g,h,i)perylene	<0.00034

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DP2CB5-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/11/13	Lab ID:	306117-01 1/10
Date Analyzed:	06/18/13	Data File:	86.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	75 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.33
Aroclor 1232	<0.33
Aroclor 1016	<0.33
Aroclor 1242	<0.33
Aroclor 1248	<0.33
Aroclor 1254	<0.33
Aroclor 1260	<0.33

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DP3CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/11/13	Lab ID:	306117-02 1/10
Date Analyzed:	06/18/13	Data File:	84.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	55 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.33
Aroclor 1232	<0.33
Aroclor 1016	<0.33
Aroclor 1242	<0.33
Aroclor 1248	<0.33
Aroclor 1254	<0.33
Aroclor 1260	<0.33

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DP10CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/11/13	Lab ID:	306117-03 1/10
Date Analyzed:	06/18/13	Data File:	82.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	60 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.33
Aroclor 1232	<0.33
Aroclor 1016	<0.33
Aroclor 1242	<0.33
Aroclor 1248	<0.33
Aroclor 1254	<0.33
Aroclor 1260	<0.33

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DP6CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/11/13	Lab ID:	306117-04 1/10
Date Analyzed:	06/18/13	Data File:	92.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	70 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.33
Aroclor 1232	<0.33
Aroclor 1016	<0.33
Aroclor 1242	<0.33
Aroclor 1248	<0.33
Aroclor 1254	<0.33
Aroclor 1260	<0.33

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DP3CB3-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/11/13	Lab ID:	306117-05 1/10
Date Analyzed:	06/18/13	Data File:	90.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	55 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.33
Aroclor 1232	<0.33
Aroclor 1016	<0.33
Aroclor 1242	<0.33
Aroclor 1248	<0.33
Aroclor 1254	<0.33
Aroclor 1260	<0.33

Analysis For PCBs By EPA Method 8082

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/11/13	Lab ID:	03-1140 mb
Date Analyzed:	06/13/13	Data File:	32.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	99	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.033
Aroclor 1232	<0.033
Aroclor 1016	<0.033
Aroclor 1242	<0.033
Aroclor 1248	<0.033
Aroclor 1254	<0.033
Aroclor 1260	<0.033

Analysis For Total Metals By EPA Method 200.8

Client ID:	DP2CB5-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/13/13	Lab ID:	306117-01
Date Analyzed:	06/14/13	Data File:	306117-01.058
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	122	60	125
Indium	108	60	125
Holmium	113	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	0.133
Chromium	87.5
Nickel	21.6
Copper	62.4 fb
Zinc	429
Arsenic	5.57
Selenium	<0.912
Silver	0.127
Cadmium	0.910
Antimony	1.87
Barium	71.0
Thallium	0.0841
Lead	344

Analysis For Total Metals By EPA Method 200.8

Client ID:	DP3CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/13/13	Lab ID:	306117-02 x10
Date Analyzed:	06/14/13	Data File:	306117-02 x10.072
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	119	60	125
Indium	102	60	125
Holmium	109	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.858
Chromium	161
Nickel	130
Copper	289 fb
Zinc	1,380
Arsenic	13.8
Selenium	<9.12
Silver	<0.784
Cadmium	8.84
Antimony	12.7
Barium	156
Thallium	<0.434
Lead	81.0

Analysis For Total Metals By EPA Method 200.8

Client ID:	DP10CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/13/13	Lab ID:	306117-03 x10
Date Analyzed:	06/14/13	Data File:	306117-03 x10.073
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	121	60	125
Indium	105	60	125
Holmium	110	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.858
Chromium	154
Nickel	119
Copper	295 fb
Zinc	1,910
Arsenic	12.9
Selenium	<9.12
Silver	<0.784
Cadmium	<2.04
Antimony	7.10
Barium	167
Thallium	<0.434
Lead	87.2

Analysis For Total Metals By EPA Method 200.8

Client ID:	DP6CB1-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/13/13	Lab ID:	306117-04 x10
Date Analyzed:	06/14/13	Data File:	306117-04 x10.074
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	112	60	125
Indium	106	60	125
Holmium	112	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.858
Chromium	45.9
Nickel	31.6
Copper	95.9 fb
Zinc	922
Arsenic	24.4
Selenium	<9.12
Silver	<0.784
Cadmium	<2.04
Antimony	3.93
Barium	73.7
Thallium	<0.434
Lead	95.6

Analysis For Total Metals By EPA Method 200.8

Client ID:	DP3CB3-060613	Client:	SLR International Corp.
Date Received:	06/07/13	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/13/13	Lab ID:	306117-05 x10
Date Analyzed:	06/14/13	Data File:	306117-05 x10.076
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	111	60	125
Indium	106	60	125
Holmium	113	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.858
Chromium	22.7
Nickel	24.9
Copper	53.1 fb
Zinc	256
Arsenic	<4.22
Selenium	<9.12
Silver	<0.784
Cadmium	<2.04
Antimony	2.42
Barium	92.7
Thallium	0.667
Lead	42.4

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley Seattle 101.00205.00019
Date Extracted:	06/13/13	Lab ID:	I3-342 mb
Date Analyzed:	06/14/13	Data File:	I3-342 mb.037
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	100	60	125
Indium	98	60	125
Holmium	100	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.0858
Chromium	<0.471
Nickel	<0.206
Copper	0.110 j
Zinc	<0.969
Arsenic	<0.422
Selenium	<0.912
Silver	<0.0784
Cadmium	<0.204
Antimony	<0.106
Barium	<0.0524 j
Thallium	<0.0434 j
Lead	<0.0496 j

Date of Report: 07/22/13
Date Received: 06/07/13
Project: Crowley Seattle 101.00205.00019, F&BI 306117
Date Extracted: 06/13/13
Date Analyzed: 06/17/13

RESULTS FROM THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
DP2CB5-060613 306117-01	0.060
DP3CB1-060613 306117-02	0.055
DP10CB1-060613 306117-03	0.44
DP6CB1-060613 306117-04	0.044
DP3CB3-060613 306117-05	0.091
Method Blank	<0.002

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	mg/kg (ppm)	10	90	90	61-153	0

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QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 306117-04 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	500	800	99 b	129 b	64-133	26 b

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	500	129	58-147

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 306117-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.020	8 vo	8 vo	10-56	0
Chloromethane	mg/kg (ppm)	2.5	<0.025	34	34	10-90	0
Vinyl chloride	mg/kg (ppm)	2.5	<0.016	31	31	10-91	0
Bromomethane	mg/kg (ppm)	2.5	<0.034	107	120 vo	10-110	11
Chloroethane	mg/kg (ppm)	2.5	<0.024	59	61	10-101	3
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.021	35	35	10-95	0
Acetone	mg/kg (ppm)	12.5	0.210	70	72	11-141	3
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.027	39	36	11-103	8
Methylene chloride	mg/kg (ppm)	2.5	<0.054	61	62	14-128	2
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.013	68	71	17-134	4
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.023	52	53	13-112	2
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.017	58	59	23-115	2
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.025	53	58	18-117	9
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.021	60	62	25-120	3
Chloroform	mg/kg (ppm)	2.5	<0.017	60	62	29-117	3
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.14	67	72	20-133	7
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.016	62	65	22-124	5
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.021	54	57	27-112	5
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.024	49	50	26-107	2
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.030	54	57	22-115	5
Benzene	mg/kg (ppm)	2.5	<0.014	57	58	26-114	2
Trichloroethene	mg/kg (ppm)	2.5	<0.033	55	56	30-112	2
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.034	60	64	31-119	6
Bromodichloromethane	mg/kg (ppm)	2.5	<0.025	65	68	31-131	5
Dibromomethane	mg/kg (ppm)	2.5	<0.022	64	67	27-124	5
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.14	74	79	16-147	7
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.023	63	68	28-137	8
Toluene	mg/kg (ppm)	2.5	<0.017	55	57	34-112	4
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.015	58	64	30-136	10
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.014	64	68	32-126	6
2-Hexanone	mg/kg (ppm)	12.5	<0.095	73	77	17-147	5
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.020	63	66	29-125	5
Tetrachloroethene	mg/kg (ppm)	2.5	<0.026	46	48	27-110	4
Dibromochloromethane	mg/kg (ppm)	2.5	<0.025	65	69	32-143	6
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.029	65	73	32-126	12
Chlorobenzene	mg/kg (ppm)	2.5	<0.014	57	60	37-113	5
Ethylbenzene	mg/kg (ppm)	2.5	<0.013	54	56	38-111	4
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.028	67	74	35-126	10
m,p-Xylene	mg/kg (ppm)	5	<0.03	54	56	38-112	4
o-Xylene	mg/kg (ppm)	2.5	<0.020	56	58	38-113	4
Styrene	mg/kg (ppm)	2.5	<0.021	58	61	38-118	5
Isopropylbenzene	mg/kg (ppm)	2.5	<0.019	52	56	37-114	7
Bromoform	mg/kg (ppm)	2.5	<0.035	64	71	18-155	10
n-Propylbenzene	mg/kg (ppm)	2.5	<0.017	48	52	36-114	8
Bromobenzene	mg/kg (ppm)	2.5	<0.012	54	57	40-115	5
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.011	48	52	35-116	8
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.036	65	70	33-128	7
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.022	62	65	33-123	5
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.016	51	54	39-110	6
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.019	52	55	39-111	6
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.021	49	52	36-116	6
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.016	48	52	35-116	8
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.015	46	49	33-118	6
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.012	45	48	32-119	6
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.020	50	53	38-111	6
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.032	50	54	39-109	8
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.016	53	56	40-111	6
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.080	58	66	34-134	13
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.036	39	43	31-117	10
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.041	32	34	25-122	6
Naphthalene	mg/kg (ppm)	2.5	<0.024	51	56	39-120	9
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.019	40	45	35-117	12

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	45	10-76
Chloromethane	mg/kg (ppm)	2.5	63	34-98
Vinyl chloride	mg/kg (ppm)	2.5	69	42-107
Bromomethane	mg/kg (ppm)	2.5	86	46-113
Chloroethane	mg/kg (ppm)	2.5	82	47-115
Trichlorofluoromethane	mg/kg (ppm)	2.5	80	53-112
Acetone	mg/kg (ppm)	12.5	86	39-147
1,1-Dichloroethene	mg/kg (ppm)	2.5	78	65-110
Methylene chloride	mg/kg (ppm)	2.5	82	62-119
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	82	72-122
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	83	71-113
1,1-Dichloroethane	mg/kg (ppm)	2.5	84	76-109
2,2-Dichloropropane	mg/kg (ppm)	2.5	93	64-151
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	83	77-110
Chloroform	mg/kg (ppm)	2.5	83	78-108
2-Butanone (MEK)	mg/kg (ppm)	12.5	83	60-121
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	82	80-109
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	90	72-116
1,1-Dichloropropene	mg/kg (ppm)	2.5	82	77-108
Carbon tetrachloride	mg/kg (ppm)	2.5	103	67-123
Benzene	mg/kg (ppm)	2.5	81	75-107
Trichloroethene	mg/kg (ppm)	2.5	82	72-107
1,2-Dichloropropane	mg/kg (ppm)	2.5	85	78-111
Bromodichloromethane	mg/kg (ppm)	2.5	97	75-126
Dibromomethane	mg/kg (ppm)	2.5	87	80-111
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	91	80-128
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	97	71-138
Toluene	mg/kg (ppm)	2.5	81	79-112
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	89	77-135
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	85	84-115
2-Hexanone	mg/kg (ppm)	12.5	86	71-129
1,3-Dichloropropane	mg/kg (ppm)	2.5	83	82-113
Tetrachloroethene	mg/kg (ppm)	2.5	80	77-110
Dibromochloromethane	mg/kg (ppm)	2.5	98	64-152
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	102	83-116
Chlorobenzene	mg/kg (ppm)	2.5	81 vo	82-113
Ethylbenzene	mg/kg (ppm)	2.5	82	81-114
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	107	76-125
m,p-Xylene	mg/kg (ppm)	5	84	82-115
o-Xylene	mg/kg (ppm)	2.5	83	81-116
Styrene	mg/kg (ppm)	2.5	85	81-118
Isopropylbenzene	mg/kg (ppm)	2.5	84	81-117
Bromoform	mg/kg (ppm)	2.5	102	50-174
n-Propylbenzene	mg/kg (ppm)	2.5	85	82-116
Bromobenzene	mg/kg (ppm)	2.5	82	82-118
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	87	83-120
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	91	83-125
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	82	79-116
2-Chlorotoluene	mg/kg (ppm)	2.5	82	80-114
4-Chlorotoluene	mg/kg (ppm)	2.5	84	82-114
tert-Butylbenzene	mg/kg (ppm)	2.5	86	82-116
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	85	82-116
sec-Butylbenzene	mg/kg (ppm)	2.5	87	81-123
p-Isopropyltoluene	mg/kg (ppm)	2.5	87	82-124
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	83	80-118
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	82	79-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	82	80-118
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	100	71-131
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	83	75-122
Hexachlorobutadiene	mg/kg (ppm)	2.5	83	74-130
Naphthalene	mg/kg (ppm)	2.5	86	83-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	81	80-126

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D

Laboratory Code: 306147-29 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Phenol	mg/kg (ppm)	1.7	<0.0054	78	85	50-150	9
Bis(2-chloroethyl) ether	mg/kg (ppm)	1.7	<0.0019	76	81	50-150	6
2-Chlorophenol	mg/kg (ppm)	1.7	<0.0058	79	86	50-150	8
1,3-Dichlorobenzene	mg/kg (ppm)	1.7	<0.0016	73	79	50-150	8
1,4-Dichlorobenzene	mg/kg (ppm)	1.7	<0.0013	76	80	50-150	5
1,2-Dichlorobenzene	mg/kg (ppm)	1.7	<0.0019	76	81	50-150	6
Benzyl alcohol	mg/kg (ppm)	1.7	0.016	87	100	50-150	14
Bis(2-chloroisopropyl) ether	mg/kg (ppm)	1.7	<0.0019	70	74	50-150	6
2-Methylphenol	mg/kg (ppm)	1.7	<0.0064	76	82	50-150	8
Hexachloroethane	mg/kg (ppm)	1.7	<0.0014	70	77	50-150	10
N-Nitroso-di-n-propylamine	mg/kg (ppm)	1.7	<0.0013	76	85	50-150	11
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	1.7	<0.012	76	82	50-150	8
Nitrobenzene	mg/kg (ppm)	1.7	<0.0022	79	87	50-150	10
Isophorone	mg/kg (ppm)	1.7	<0.00082	83	88	50-150	6
2-Nitrophenol	mg/kg (ppm)	1.7	<0.0058	84	97	50-150	14
2,4-Dimethylphenol	mg/kg (ppm)	1.7	<0.016	70	68	50-150	3
Benzoic acid	mg/kg (ppm)	2.5	<0.046	69	88	50-150	24 vo
Bis(2-chloroethoxy)methane	mg/kg (ppm)	1.7	<0.00094	82	86	50-150	5
2,4-Dichlorophenol	mg/kg (ppm)	1.7	<0.0052	85	93	50-150	9
1,2,4-Trichlorobenzene	mg/kg (ppm)	1.7	<0.0013	82	89	50-150	8
Hexachlorobutadiene	mg/kg (ppm)	1.7	<0.0014	83	90	50-150	8
4-Chloroaniline	mg/kg (ppm)	3.3	<0.28	67	73	50-150	9
4-Chloro-3-methylphenol	mg/kg (ppm)	1.7	<0.0042	85	92	50-150	8
2-Methylnaphthalene	mg/kg (ppm)	1.7	<0.0014	79	86	50-150	8
Hexachlorocyclopentadiene	mg/kg (ppm)	1.7	<0.0022	53	75	50-150	34 vo
2,4,6-Trichlorophenol	mg/kg (ppm)	1.7	<0.0038	86	95	50-150	10
2,4,5-Trichlorophenol	mg/kg (ppm)	1.7	<0.0078	91	100	50-150	9
2-Chloronaphthalene	mg/kg (ppm)	1.7	<0.0015	86	93	50-150	8
2-Nitroaniline	mg/kg (ppm)	1.7	<0.0022	85	96	50-150	12
Dimethyl phthalate	mg/kg (ppm)	1.7	<0.0011	90	95	50-150	5
2,6-Dinitrotoluene	mg/kg (ppm)	1.7	<0.0011	94	103	50-150	9
3-Nitroaniline	mg/kg (ppm)	3.3	<0.004	72	80	50-150	11
2,4-Dinitrophenol	mg/kg (ppm)	1.7	<0.02	48 vo	102	50-150	72 vo
Dibenzofuran	mg/kg (ppm)	1.7	<0.0013	88	94	50-150	7
2,4-Dinitrotoluene	mg/kg (ppm)	1.7	<0.00066	86	96	50-150	11
4-Nitrophenol	mg/kg (ppm)	1.7	<0.019	83	95	50-150	13
Diethyl phthalate	mg/kg (ppm)	1.7	0.0016	90	94	50-150	4
4-Chlorophenyl phenyl ether	mg/kg (ppm)	1.7	<0.0011	86	93	50-150	8
N-Nitrosodiphenylamine	mg/kg (ppm)	1.7	<0.0013	88	91	50-150	3
4-Nitroaniline	mg/kg (ppm)	3.3	<0.012	77	83	50-150	7
4,6-Dinitro-2-methylphenol	mg/kg (ppm)	1.7	<0.016	61	104	50-150	52 vo
4-Bromophenyl phenyl ether	mg/kg (ppm)	1.7	<0.0014	89	95	50-150	7
Hexachlorobenzene	mg/kg (ppm)	1.7	<0.0012	89	94	50-150	5
Pentachlorophenol	mg/kg (ppm)	1.7	<0.011	88	99	50-150	12
Carbazole	mg/kg (ppm)	1.7	<0.0028	86	92	50-150	7
Di-n-butyl phthalate	mg/kg (ppm)	1.7	<0.002	92	97	50-150	5
Benzyl butyl phthalate	mg/kg (ppm)	1.7	<0.0012	101	101	50-150	0
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	1.7	<0.046	99	97	50-150	2
Di-n-octyl phthalate	mg/kg (ppm)	1.7	<0.0017	111	101	50-150	9

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	mg/kg (ppm)	1.7	87	91	51-119	4
Bis(2-chloroethyl) ether	mg/kg (ppm)	1.7	92	85	60-112	8
2-Chlorophenol	mg/kg (ppm)	1.7	90	93	59-114	3
1,3-Dichlorobenzene	mg/kg (ppm)	1.7	90	91	62-113	1
1,4-Dichlorobenzene	mg/kg (ppm)	1.7	91	90	61-114	1
1,2-Dichlorobenzene	mg/kg (ppm)	1.7	91	92	61-113	1
Benzyl alcohol	mg/kg (ppm)	1.7	92	96	50-119	4
Bis(2-chloroisopropyl) ether	mg/kg (ppm)	1.7	85	85	59-113	0
2-Methylphenol	mg/kg (ppm)	1.7	85	92	58-115	8
Hexachloroethane	mg/kg (ppm)	1.7	91	90	63-114	1
N-Nitroso-di-n-propylamine	mg/kg (ppm)	1.7	91	96	62-114	5
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	1.7	86	94	54-120	9
Nitrobenzene	mg/kg (ppm)	1.7	93	94	59-114	1
Isophorone	mg/kg (ppm)	1.7	94	97	61-113	3
2-Nitrophenol	mg/kg (ppm)	1.7	99	101	59-114	2
2,4-Dimethylphenol	mg/kg (ppm)	1.7	75	85	54-107	12
Benzoic acid	mg/kg (ppm)	2.5	109	116	43-150	6
Bis(2-chloroethoxy)methane	mg/kg (ppm)	1.7	92	95	60-114	3
2,4-Dichlorophenol	mg/kg (ppm)	1.7	91	95	57-118	4
1,2,4-Trichlorobenzene	mg/kg (ppm)	1.7	93	95	56-112	2
Hexachlorobutadiene	mg/kg (ppm)	1.7	95	93	60-116	2
4-Chloroaniline	mg/kg (ppm)	3.3	56	44	10-126	24 vo
4-Chloro-3-methylphenol	mg/kg (ppm)	1.7	88	95	59-115	8
2-Methylnaphthalene	mg/kg (ppm)	1.7	88	91	60-115	3
Hexachlorocyclopentadiene	mg/kg (ppm)	1.7	97	95	41-107	2
2,4,6-Trichlorophenol	mg/kg (ppm)	1.7	92	96	47-119	4
2,4,5-Trichlorophenol	mg/kg (ppm)	1.7	93	99	61-121	6
2-Chloronaphthalene	mg/kg (ppm)	1.7	94	96	58-114	2
2-Nitroaniline	mg/kg (ppm)	1.7	92	97	55-119	5
Dimethyl phthalate	mg/kg (ppm)	1.7	96	98	58-116	2
2,6-Dinitrotoluene	mg/kg (ppm)	1.7	100	104	57-119	4
3-Nitroaniline	mg/kg (ppm)	3.3	85	92	10-143	8
2,4-Dinitrophenol	mg/kg (ppm)	1.7	73	79	40-122	8
Dibenzofuran	mg/kg (ppm)	1.7	94	99	56-115	5
2,4-Dinitrotoluene	mg/kg (ppm)	1.7	89	94	53-126	5
4-Nitrophenol	mg/kg (ppm)	1.7	94	102	40-124	8
Diethyl phthalate	mg/kg (ppm)	1.7	99	97	57-116	2
4-Chlorophenyl phenyl ether	mg/kg (ppm)	1.7	93	94	54-119	1
N-Nitrosodiphenylamine	mg/kg (ppm)	1.7	92	95	54-113	3
4-Nitroaniline	mg/kg (ppm)	3.3	93	97	47-109	4
4,6-Dinitro-2-methylphenol	mg/kg (ppm)	1.7	83	90	57-108	8
4-Bromophenyl phenyl ether	mg/kg (ppm)	1.7	97	98	56-116	1
Hexachlorobenzene	mg/kg (ppm)	1.7	95	98	57-115	3
Pentachlorophenol	mg/kg (ppm)	1.7	92	94	45-123	2
Carbazole	mg/kg (ppm)	1.7	95	98	57-116	3
Di-n-butyl phthalate	mg/kg (ppm)	1.7	100	102	56-118	2
Benzyl butyl phthalate	mg/kg (ppm)	1.7	102	101	56-122	1
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	1.7	93	99	56-125	6
Di-n-octyl phthalate	mg/kg (ppm)	1.7	97	104	58-120	7

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM

Laboratory Code: 306147-25 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	<0.00022	43 vo	49	44-129	13
Acenaphthylene	mg/kg (ppm)	0.17	<0.000091	62	67	52-121	8
Acenaphthene	mg/kg (ppm)	0.17	<0.00014	61	66	51-123	8
Fluorene	mg/kg (ppm)	0.17	<0.00015	70	75	37-137	7
Phenanthrene	mg/kg (ppm)	0.17	0.00061	73	77	45-124	5
Anthracene	mg/kg (ppm)	0.17	<0.000088	66	72	32-124	9
Fluoranthene	mg/kg (ppm)	0.17	<0.00028	75	81	50-125	8
Pyrene	mg/kg (ppm)	0.17	0.00032	76	82	41-135	8
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.00018	70	77	23-144	10
Chrysene	mg/kg (ppm)	0.17	<0.00019	71	80	45-122	12
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	0.00018	74	82	31-144	10
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.00036	75	84	45-130	11
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.00022	65	74	39-128	13
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.00062	68	77	28-146	12
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.00034	65	74	46-129	13
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	<0.00034	68	77	37-133	12

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	81	86	58-121	6
Acenaphthylene	mg/kg (ppm)	0.17	89	91	54-121	2
Acenaphthene	mg/kg (ppm)	0.17	86	89	54-123	3
Fluorene	mg/kg (ppm)	0.17	91	91	56-127	0
Phenanthrene	mg/kg (ppm)	0.17	89	91	55-122	2
Anthracene	mg/kg (ppm)	0.17	85	87	50-120	2
Fluoranthene	mg/kg (ppm)	0.17	93	94	54-129	1
Pyrene	mg/kg (ppm)	0.17	93	97	53-127	4
Benz(a)anthracene	mg/kg (ppm)	0.17	92	94	51-115	2
Chrysene	mg/kg (ppm)	0.17	94	95	55-129	1
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	97	101	56-123	4
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	94	96	54-131	2
Benzo(a)pyrene	mg/kg (ppm)	0.17	88	90	51-118	2
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	98	99	49-148	1
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	92	93	50-141	1
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	92	94	52-131	2

Date of Report: 07/22/13
Date Received: 06/07/13
Project: Crowley Seattle 101.00205.00019, F&BI 306117

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 306147-09 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Control Limits
Aroclor 1016	mg/kg (ppm)	0.8	<0.033	79	50-150
Aroclor 1260	mg/kg (ppm)	0.8	<0.033	93	50-150

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.8	81	89	70-130	9
Aroclor 1260	mg/kg (ppm)	0.8	90	90	70-130	0

Date of Report: 07/22/13
Date Received: 06/07/13
Project: Crowley Seattle 101.00205.00019, F&BI 306117

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 306147-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	mg/kg (ppm)	5	0.138	117	118	67-138	1
Chromium	mg/kg (ppm)	50	11.7	89 b	87 b	57-128	2 b
Nickel	mg/kg (ppm)	25	18.9	87 b	83 b	69-112	5 b
Copper	mg/kg (ppm)	50	15.7	78 b	74 b	57-120	5 b
Zinc	mg/kg (ppm)	50	22.1	117 b	87 b	55-129	29 b
Arsenic	mg/kg (ppm)	10	3.75	161 b	96 b	70-118	51 b
Selenium	mg/kg (ppm)	5	<0.912	99	96	64-117	3
Silver	mg/kg (ppm)	10	<0.0784	103	100	73-122	3
Cadmium	mg/kg (ppm)	10	<0.204	106	104	83-116	2
Antimony	mg/kg (ppm)	20	0.702	118 vo	97	54-116	20
Barium	mg/kg (ppm)	50	38.0	90 b	86 b	60-141	5 b
Thallium	mg/kg (ppm)	5	0.071	100	97	68-121	3
Lead	mg/kg (ppm)	50	2.61	115	100	59-148	14

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	mg/kg (ppm)	5	128	69-146
Chromium	mg/kg (ppm)	50	106	78-121
Nickel	mg/kg (ppm)	25	105	82-122
Copper	mg/kg (ppm)	50	100	82-119
Zinc	mg/kg (ppm)	50	106	81-120
Arsenic	mg/kg (ppm)	10	103	83-113
Selenium	mg/kg (ppm)	5	110	84-115
Silver	mg/kg (ppm)	10	103	81-116
Cadmium	mg/kg (ppm)	10	104	54-114
Antimony	mg/kg (ppm)	20	102	69-114
Barium	mg/kg (ppm)	50	102	85-116
Thallium	mg/kg (ppm)	5	102	77-123
Lead	mg/kg (ppm)	50	106	80-120

Date of Report: 07/22/13
Date Received: 06/07/13
Project: Crowley Seattle 101.00205.00019, F&BI 306117

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 306147-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	0.125	0.020	93	91	62-140	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	0.125	79	63-131

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

RECEIVED
JUL 05 2013

July 3, 2013

Michele Costales Poquiz
Friedman & Bruya
3012 16th Ave W
Seattle, WA 98119

RE: Project: 306117
ARI Job No.: WT61

Dear Michele:

Please find enclosed the Chain-of-Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted five solid samples on June 11, 2013, under ARI job WT61. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for TOC, as requested on the COC.

There were no anomalies associated with the analysis of these samples.

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

Respectfully,
ANALYTICAL RESOURCES, INC.

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

cc: eFile WT61

Enclosures

SAMPLE CHAIN OF CUSTODY

Send Report To Michele Costales Poquiz

Company Friedman & Bruya, Inc.

Address 3012 16th Ave. W.

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

Email Address mpoquiz@friedmanandbruya.com

SUBCONTRACTOR
Analytical Resources, Inc. (ARI)

PROJECT NAME/NO.: 306117

PO #: C-417

REMARKS

Please e-mail results

ELECTRONIC DATA REQUESTED (EIM)

TURNAROUND TIME
☒ Standard Turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☒ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Samples Received at ____ °C

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	Hexavalent Cr by 7196A	Total Organic Carbon by 9060				Notes
DP2 CB5 - 060613		6/6/13	1002	solids	1							X				
DP3 CB1 - 060613			1425													
DP10 CB1 - 060613			1525													
~~DP~~ DP6 CB1 - 060613			1645													
DP3 CB3 - 060613			1735													

MP 11/01/13

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michele Costales Poquiz	F&B1	6/11/13	11:05 AM
Received by:	Taylor Stratton	ARI	6-11-13	1755
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC SLRC.DOC

130668 : TGLM

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Friedman & Bruya Project Name: 306117

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

Assigned ARI Job No: WTH Tracking No: _____ (NA)

Preliminary Examination Phase:

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

Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)..... 5.2

If cooler temperature is out of compliance fill out form 00070F Temp Gun ID#: 90877952

Cooler Accepted by: TS Date: 6-11-13 Time: 1355

Complete custody forms and attach all shipping documents

Log-In Phase:

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

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

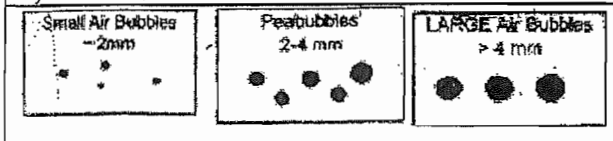
Samples Logged by: TS Date: 6-11-13 Time: 1415

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WT61
Client: Friedman & Bruya
Project Event: 306117
Project Name: N/A

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	DP2CB5-060613	WT61A	13-12497	Solid	06/06/13 10:02	06/11/13 13:55
2.	DP3CB1-060613	WT61B	13-12498	Solid	06/06/13 14:25	06/11/13 13:55
3.	DP10CB1-060613	WT61C	13-12499	Solid	06/06/13 15:25	06/11/13 13:55
4.	DP6CB1-060613	WT61D	13-12500	Solid	06/06/13 16:45	06/11/13 13:55
5.	DP3CB3-060613	WT61E	13-12501	Solid	06/06/13 17:35	06/11/13 13:55

SAMPLE RESULTS-CONVENTIONALS
WT61-Friedman & Bruya

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized: JM
Reported: 07/03/13

Project: NA
Event: 306117
Date Sampled: 06/06/13
Date Received: 06/11/13

Client ID: DP2CB5-060613
ARI ID: 13-12497 WT61A

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/17/13 061713#1	SM2540B	Percent	0.01	58.87
Total Organic Carbon	07/02/13 070213#1	EPA 9060M	Percent	0.176	7.90

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WT61-Friedman & Bruya

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized: NB
Reported: 07/03/13

Project: NA
Event: 306117
Date Sampled: 06/06/13
Date Received: 06/11/13

Client ID: DP3CB1-060613
ARI ID: 13-12498 WT61B

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/17/13 061713#1	SM2540B	Percent	0.01	80.00
Total Organic Carbon	07/02/13 070213#1	EPA 9060M	Percent	0.156	5.54

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WT61-Friedman & Bruya

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized:
Reported: 07/03/13

Project: NA
Event: 306117
Date Sampled: 06/06/13
Date Received: 06/11/13

Client ID: DP10CB1-060613
ARI ID: 13-12499 WT61C

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/17/13 061713#1	SM2540B	Percent	0.01	77.38
Total Organic Carbon	07/02/13 070213#1	EPA 9060M	Percent	0.200	4.76

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WT61-Friedman & Bruya

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized:
Reported: 07/03/13

Project: NA
Event: 306117
Date Sampled: 06/06/13
Date Received: 06/11/13

Client ID: DP6CB1-060613
ARI ID: 13-12500 WT61D

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/17/13 061713#1	SM2540B	Percent	0.01	69.25
Total Organic Carbon	07/02/13 070213#1	EPA 9060M	Percent	0.240	6.68

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WT61-Friedman & Bruya

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized: MB
Reported: 07/03/13

Project: NA
Event: 306117
Date Sampled: 06/06/13
Date Received: 06/11/13

Client ID: DP3CB3-060613
ARI ID: 13-12501 WT61E

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/17/13 061713#1	SM2540B	Percent	0.01	29.16
Total Organic Carbon	07/02/13 070213#1	EPA 9060M	Percent	0.174	33.8

RL Analytical reporting limit
U Undetected at reported detection limit

LAB CONTROL RESULTS-CONVENTIONALS
WT61-Friedman & Bruya

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized: MB
Reported: 07/03/13

Project: NA
Event: 306117
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Total Organic Carbon EPA 9060M	ICVL	07/02/13	Percent	0.098	0.100	98.0%

METHOD BLANK RESULTS-CONVENTIONALS
WT61-Friedman & Bruya

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized:
Reported: 07/03/13

Project: NA
Event: 306117
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Total Solids	06/17/13	Percent	< 0.01 U	ICB
Total Organic Carbon	07/02/13	Percent	< 0.020 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
WT61-Friedman & Bruya

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized:
Reported: 07/03/13

Project: NA
Event: 306117
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST 1941B	07/02/13	Percent	2.48	2.99	82.9%

Budinger & Associates

Geotechnical Engineering
Environmental Engineering
Construction Materials Testing
Subsurface Exploration
Special Inspection

Proudly serving the Inland Northwest for over 30 years

Michele Costales Poquiz
Friedman & Bruya
3012 16th Avenue West
Seattle, WA 98119

June 24, 2013

Project Number L13283

PROJECT: 306117 Soils
Seattle, WA

SUBJECT: Results of Laboratory Testing
Report # 1

At your request, we provided laboratory testing services for the subject project. Services were limited to the performance of specific laboratory tests, selected at your discretion.

For this period our involvement was limited to laboratory testing of five samples delivered to us on June 12, 2013. Laboratory tests were performed in general accordance with methods listed on the attached *Laboratory Summary* and *Particle Size Distribution* sheets.

If you have any questions, please call.

Respectfully Submitted,
BUDINGER & ASSOCIATES, INC.

Kyle L. Sanford
Mgr. Construction Services

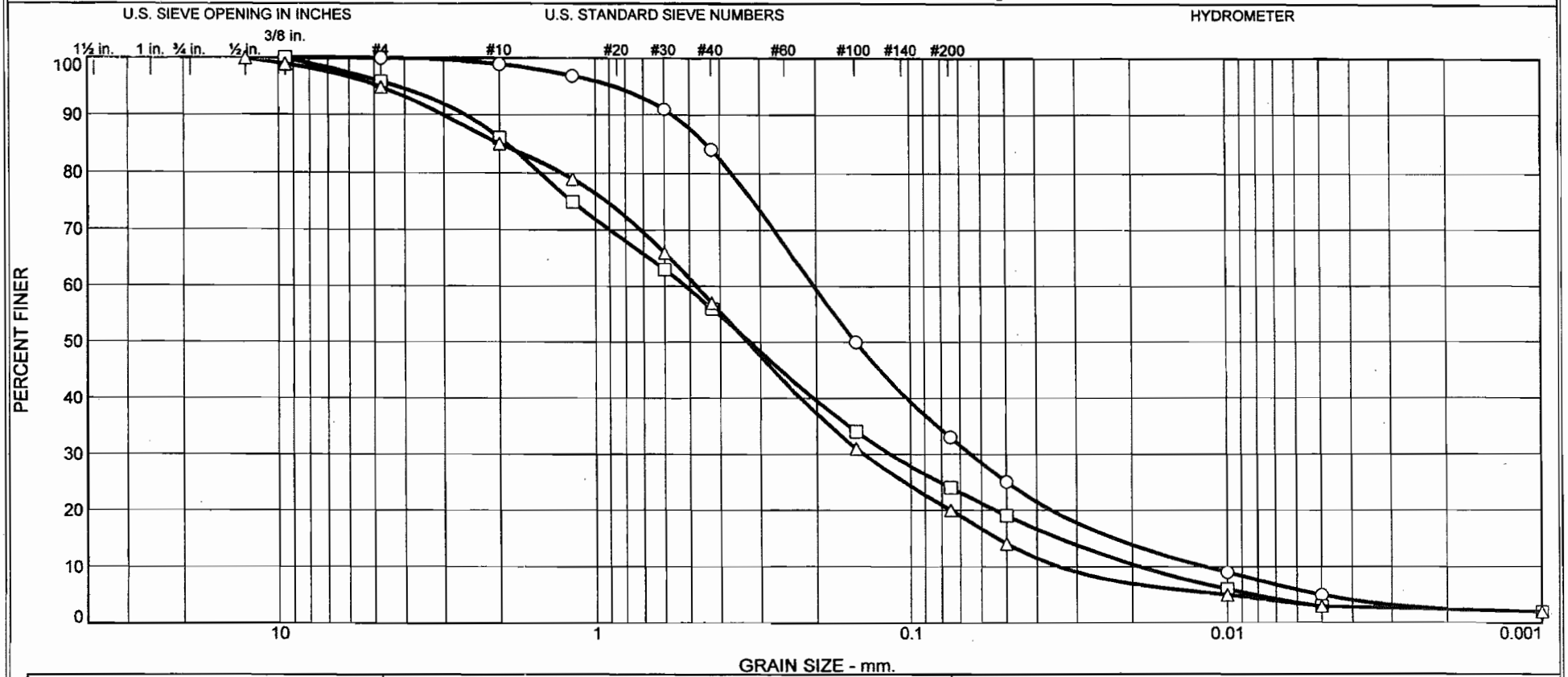
KLS/kh
Addressee – 2
Attachments:
- Soils - Laboratory Summary (1 page)
- Particle Size Distribution (2 pages)

1101 North Fancher Road
Spokane Valley, WA 99212
Tel: 509-535-8841
Fax:509-535-9589

SOILS
LABORATORY SUMMARY

LABORATORY NUMBER				13-0408	13-0409	13-0410	13-0411	13-0412
SAMPLE NUMBER				1	2	3	4	5
SAMPLED BY				Client	Client	Client	Client	Client
SAMPLE TYPE				Bulk	Bulk	Bulk	Bulk	Bulk
DATE RECEIVED				6/12/13	6/12/13	6/12/13	6/12/13	6/12/13
SAMPLE LOCATION				DP2CB5-060613	DP3CB1-060613	DP10CB1-060613	DP6CB1-060613	DP3CB3-060613
		Units	Test Method					
SIEVE ANALYSIS			ASTM D-422					
	3/4"						100	
S	1/2"	%				100	97	
I	3/8"			100	100	99	76	100
E	#4	P		100-	96	95	40	97
V	#10	A		99	86	85	25	92
E	#16	S		97	75	79	22	90
	#30	S		91	63	66	19	86
S	#40	I		84	56	57	12	82
I	#100	N		50	34	31	11	58
Z	#200	G		33	24	20	8.9	40
E	.05mm			25	19	14	7	30
	.01mm			9	6	5	2	10
	.005mm			5	3	3	2	8
	.001mm			2	2	2	1	5

Particle Size Distribution Report



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	1	15	51	28	5
□	0	4	10	30	32	21	3
△	0	5	10	28	37	17	3

	Identification		Date Sampled	Date Received	Date Tested
○	Source of Sample: on site	Sample Number: 1 (13-0408)		6/12/13	6/17/13
□	Source of Sample: on site	Sample Number: 2 (13-0409)		6/12/13	6/17/13
△	Source of Sample: on site	Sample Number: 3 (13-0410)		6/12/13	6/17/13

Client Friedman & Bruya

Project 306117 Soils

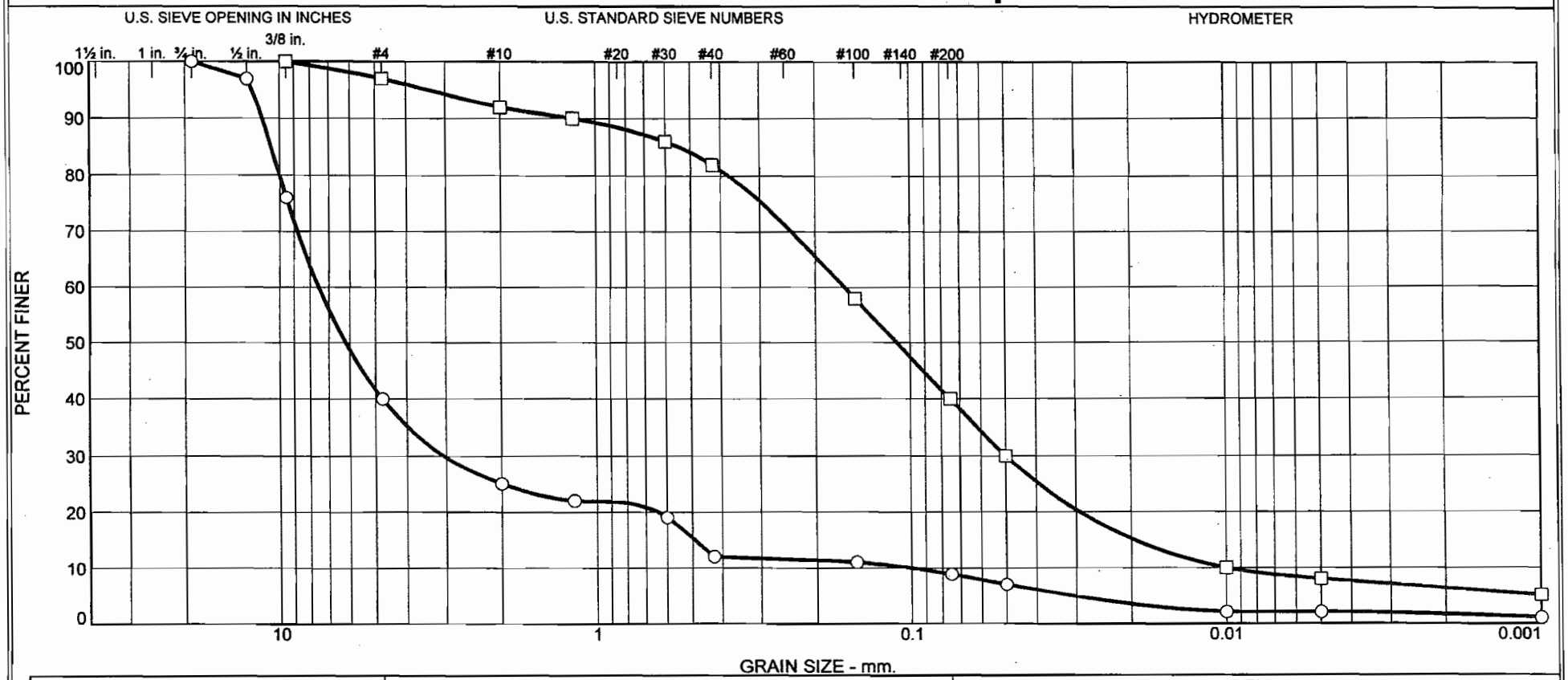
Project No. L13283 Date 6/21/13

BUDINGER & ASSOCIATES, INC.

○ Sampled by Client #DP2CB5-060613
□ Sampled by Client #DP3CB1-060613
△ Sampled by Client #DP10CB1-060613

Tested By: KC **Checked By:** TB

Particle Size Distribution Report



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	60	15	13	3	7	2
□	0	3	5	10	42	32	8

	Identification		Date Sampled	Date Received	Date Tested
○	Source of Sample: on site	Sample Number: 4 (13-0411)		6/12/13	6/17/13
□	Source of Sample: on site	Sample Number: 5 (13-0412)		6/12/13	6/17/13

Client Friedman & Bruya

Project 306117 Soils

Project No. L13283 Date 6/21/13

BUDINGER & ASSOCIATES, INC.

○ Sampled by Client #DP6CB1-060613
□ Sampled by Client #DP3CB3-060613

Tested By: KC **Checked By:** TB

306 117

SAMPLE CHAIN OF CUSTODY ~~KJ~~ ~~AKE~~ 06-07-13

BI4 / VS3

Page # 1 of 1

Send Report To NIKE STATON

Company SLR CONSULTING

Address 22118 20TH AVE SE, STE 142

City, State, ZIP BOTHELL, WA 98021

Phone #425-402-8800 Fax #

SAMPLERS (signature)

PROJECT NAME/NO. CROWLEY SEATTLE 101.00205.00019

PO#

REMARKS

TURNAROUND TIME
- ☑ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	HFS	Metals (Priority Pollutants + Ba) 6020	Hg 1631E	PAHs 8270D SIM	PCBs 8082A	TOC 9060	Grain Size ASTM D-422	Lab ID	Notes
DP2CB5-060613	1	6/6/13	1000	SOLIDS	~~14~~ 15	X	X		X	X		X	X	X	X	X	X	01 A-N	
DP3CB1-060613	2		1425		14	X	X		X	X		X	X	X	X	X	X	02	
DP10CB1-060613	3		1525		14	X	X		X	X		X	X	X	X	X	X	03	
DP6CB1-060613	4		1645		14	X	X		X	X		X	X	X	X	X	X	04	
DP3CB3-060613	5	✓	1735	✓	14	X	X		X	X		X	X	X	X	X	X	05	

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	GREG LIGHT	SLR	6/7/13	11:25
Received by:	VINH	FBI	6/7/13	1:30 PM
Relinquished by:				
Received by:		~~Samples received at~~ 4		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

July 22, 2013

Mike Staton
SLR International Corp.
22118 20th Ave. SE., G-202
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on June 12, 2013 from the Crowley/101.00205.00019, F&BI 306182 project. There are 65 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michele Costales Poquiz

Michele Costales Poquiz
Chemist

Enclosures
SLR0722R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 12, 2013 by Friedman & Bruya, Inc. from the SLR International Corp. Crowley/101.00205.00019, F&BI 306182 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
306182-01	DP4CB4-061013
306182-02	DP6CB4-061013
306182-03	DP1CB3-061013
306182-04	TRIP BLANK-061013B
306182-05	DP1CB2-061013
306182-06	DP2CB2-061013
306182-07	DP4CB2-061013
306182-08	DP5CB1-061013
306182-09	DP5CB4-061013

Total Petroluem Hydrocarbons as Gasoline by Method NWTPH-Gx

All quality control requirements were acceptable.

Total Petroluem Hydrocarbons as Diesel and Motor Oil by Method NWTPH-Dx with Silica Gel

All quality control requirements were acceptable.

Volatile Compounds by EPA Method 8260C

Analysis of the samples by direct sparge resulted in failing internal standards, indicating that the direct sparge extraction technique is not appropriate for the sample matrix. The samples were re-extracted using the methanolic technique. The results from the methanolic analysis are enclosed.

The presence of acetone, chloroform and methylene chloride in the samples is likely due to laboratory contamination. The results have been flagged accordingly.

The chlorobenzene result in the laboratory control sample was out of control limits. The values reported are estimates.

The trip blank sample was received with incorrect preservation for the 8260 analysis of vinyl chloride. The result should be considered an estimate.

The percent recovery for several compounds in the matrix spike (MS), matrix spike duplicate (MSD), laboratory control sample (LCS) and/or laboratory control sample duplicate (LCSD) exceeded acceptance criteria. The results have been flagged accordingly.

CASE NARRATIVE (continued)

Semivolatile Organic Compounds by EPA Method 8270D
The samples were diluted due to matrix interferences. The reporting limits have been raised accordingly.

The percent recovery for several compounds in the MS, MSD and/or LCS exceeded acceptance criteria. In addition, the relative percent difference (RPD) for the MS and MSD exceeded acceptance criteria for several compounds. The results have been flagged accordingly.

Semivolatile Organic Compounds by EPA Method 8270D SIM
The samples were diluted due to matrix interferences. The reporting limits have been raised accordingly.

Polychlorinated Biphenyls as Aroclor 1016/1260 by EPA Method 8082A
The samples were diluted due to matrix interferences. The reporting limits have been raised accordingly.

Total Metals by EPA Method 200.8
The samples DP4CB2-061013 and DP5CB1-061013 were diluted due to matrix interferences. The reporting limits have been raised accordingly.

Copper was identified at a low level in the method blank. The results have been flagged accordingly.

Total Mercury by EPA Method 1631E
All quality control requirements were acceptable.

Total Organic Carbon by EPA Method 9060M
The samples were sent to Analytical Resources, Inc. for analysis. Review of the enclosed report indicates all quality control requirements were acceptable.

Grain Size by ASTM D-422
The samples were sent to Budinger & Associates for analysis. The report generated by B&A is enclosed.

Date of Report: 07/22/13
Date Received: 06/12/13
Project: Crowley/101.00205.00019, F&BI 306182
Date Extracted: 06/19/13
Date Analyzed: 06/19/13

RESULTS FROM THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
DP4CB4-061013 306182-01	0.87	83
DP6CB4-061013 306182-02	9.6	81
DP1CB3-061013 306182-03	0.73	83
DP1CB2-061013 306182-05	2.7	79
DP2CB2-061013 306182-06	1.0	83
DP4CB2-061013 306182-07	0.83	83
DP5CB1-061013 306182-08	0.82	82
DP5CB4-061013 306182-09	0.77	80
Method Blank 03-1162 MB	<0.20	83

Date of Report: 07/22/13
Date Received: 06/12/13
Project: Crowley/101.00205.00019, F&BI 306182
Date Extracted: 06/13/13
Date Analyzed: 06/17/13 and 06/18/13

RESULTS FROM THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 53-144)
DP4CB4-061013 306182-01 1/10	6,000 x	21,000	92
DP6CB4-061013 306182-02 1/10	3,100 x	7,500	120
DP1CB3-061013 306182-03 1/10	88 x	1,400	107
DP1CB2-061013 306182-05 1/10	300 x	2,600	126
DP2CB2-061013 306182-06 1/10	720 x	7,900	111
DP4CB2-061013 306182-07 1/10	750 x	7,800	102
DP5CB1-061013 306182-08 1/10	2,200 x	19,000	105
DP5CB4-061013 306182-09 1/10	1,900 x	15,000	99
Method Blank 03-1149 MB	<2.8 j	<4.5 j	113

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DP4CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-01
Date Analyzed:	06/18/13	Data File:	061827.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.02	1,3-Dichloropropane	<0.02
Chloromethane	<0.026	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.026
Bromomethane	<0.034	1,2-Dibromoethane (EDB)	<0.03
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	<0.02	Ethylbenzene	<0.013
Acetone	<0.2	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.026	m,p-Xylene	<0.03
Methylene chloride	<0.054	o-Xylene	<0.034
Methyl t-butyl ether (MTBE)	<0.013	Styrene	<0.022
trans-1,2-Dichloroethene	<0.024	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.034
2,2-Dichloropropane	<0.026	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.022	Bromobenzene	<0.012
Chloroform	0.068 lc	1,3,5-Trimethylbenzene	<0.011
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.022	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.03	tert-Butylbenzene	<0.022
Benzene	<0.014	1,2,4-Trimethylbenzene	<0.016
Trichloroethene	<0.034	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	<0.012
Bromodichloromethane	<0.024	1,3-Dichlorobenzene	<0.02
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.022	1,2-Dibromo-3-chloropropane	<0.08
Toluene	<0.017	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.04
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.096	1,2,3-Trichlorobenzene	<0.019

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DP6CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-02
Date Analyzed:	06/18/13	Data File:	061828.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.02	1,3-Dichloropropane	<0.02
Chloromethane	<0.026	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.026
Bromomethane	<0.034	1,2-Dibromoethane (EDB)	<0.03
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	<0.02	Ethylbenzene	<0.013
Acetone	<0.2	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.026	m,p-Xylene	<0.03
Methylene chloride	<0.054	o-Xylene	<0.034
Methyl t-butyl ether (MTBE)	<0.013	Styrene	<0.022
trans-1,2-Dichloroethene	<0.024	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.034
2,2-Dichloropropane	<0.026	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.022	Bromobenzene	<0.012
Chloroform	0.043 lc	1,3,5-Trimethylbenzene	<0.011
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.022	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.03	tert-Butylbenzene	<0.022
Benzene	<0.014	1,2,4-Trimethylbenzene	<0.016
Trichloroethene	<0.034	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	<0.012
Bromodichloromethane	<0.024	1,3-Dichlorobenzene	<0.02
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.022	1,2-Dibromo-3-chloropropane	<0.08
Toluene	4.2	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.04
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.096	1,2,3-Trichlorobenzene	<0.019

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DP1CB3-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-03
Date Analyzed:	06/18/13	Data File:	061829.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	94	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.02	1,3-Dichloropropane	<0.02
Chloromethane	<0.026	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.026
Bromomethane	<0.034	1,2-Dibromoethane (EDB)	<0.03
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	0.021	Ethylbenzene	<0.013
Acetone	<0.2	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.026	m,p-Xylene	<0.03
Methylene chloride	<0.054	o-Xylene	<0.034
Methyl t-butyl ether (MTBE)	<0.013	Styrene	<0.022
trans-1,2-Dichloroethene	<0.024	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.034
2,2-Dichloropropane	<0.026	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.022	Bromobenzene	<0.012
Chloroform	0.027 lc	1,3,5-Trimethylbenzene	<0.011
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.022	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.03	tert-Butylbenzene	<0.022
Benzene	<0.014	1,2,4-Trimethylbenzene	0.025
Trichloroethene	<0.034	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	<0.012
Bromodichloromethane	<0.024	1,3-Dichlorobenzene	<0.02
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.022	1,2-Dibromo-3-chloropropane	<0.08
Toluene	<0.017	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.04
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.096	1,2,3-Trichlorobenzene	<0.019

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DP1CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-05
Date Analyzed:	06/18/13	Data File:	061830.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.02	1,3-Dichloropropane	<0.02
Chloromethane	<0.026	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.026
Bromomethane	<0.034	1,2-Dibromoethane (EDB)	<0.03
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	0.074	Ethylbenzene	<0.013
Acetone	<0.2	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.026	m,p-Xylene	<0.03
Methylene chloride	0.081 lc	o-Xylene	<0.034
Methyl t-butyl ether (MTBE)	<0.013	Styrene	0.046
trans-1,2-Dichloroethene	<0.024	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.034
2,2-Dichloropropane	<0.026	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.022	Bromobenzene	<0.012
Chloroform	<0.017	1,3,5-Trimethylbenzene	0.023
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.022	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.03	tert-Butylbenzene	<0.022
Benzene	<0.014	1,2,4-Trimethylbenzene	0.051
Trichloroethene	<0.034	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	0.018
Bromodichloromethane	<0.024	1,3-Dichlorobenzene	<0.02
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.022	1,2-Dibromo-3-chloropropane	<0.08
Toluene	<0.017	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.04
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.096	1,2,3-Trichlorobenzene	<0.019

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DP2CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-06
Date Analyzed:	06/18/13	Data File:	061831.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	59	116
Toluene-d8	93	51	121
4-Bromofluorobenzene	121	32	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.02	1,3-Dichloropropane	<0.02
Chloromethane	<0.026	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.026
Bromomethane	<0.034	1,2-Dibromoethane (EDB)	<0.03
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	<0.02	Ethylbenzene	<0.013
Acetone	0.29 lc	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.026	m,p-Xylene	<0.03
Methylene chloride	0.31 lc	o-Xylene	<0.034
Methyl t-butyl ether (MTBE)	<0.013	Styrene	<0.022
trans-1,2-Dichloroethene	<0.024	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.034
2,2-Dichloropropane	<0.026	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.022	Bromobenzene	<0.012
Chloroform	<0.017	1,3,5-Trimethylbenzene	0.038
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.022	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.03	tert-Butylbenzene	<0.022
Benzene	<0.014	1,2,4-Trimethylbenzene	0.083
Trichloroethene	<0.034	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	<0.012
Bromodichloromethane	<0.024	1,3-Dichlorobenzene	<0.02
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.022	1,2-Dibromo-3-chloropropane	<0.08
Toluene	<0.017	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.04
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.096	1,2,3-Trichlorobenzene	<0.019

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DP4CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-07
Date Analyzed:	06/18/13	Data File:	061832.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.02	1,3-Dichloropropane	<0.02
Chloromethane	<0.026	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.026
Bromomethane	<0.034	1,2-Dibromoethane (EDB)	<0.03
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	0.057	Ethylbenzene	<0.013
Acetone	0.24 lc	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.026	m,p-Xylene	<0.03
Methylene chloride	<0.054	o-Xylene	<0.034
Methyl t-butyl ether (MTBE)	<0.013	Styrene	<0.022
trans-1,2-Dichloroethene	<0.024	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.034
2,2-Dichloropropane	<0.026	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.022	Bromobenzene	<0.012
Chloroform	<0.017	1,3,5-Trimethylbenzene	<0.011
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.022	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.03	tert-Butylbenzene	<0.022
Benzene	<0.014	1,2,4-Trimethylbenzene	<0.016
Trichloroethene	<0.034	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	<0.012
Bromodichloromethane	<0.024	1,3-Dichlorobenzene	<0.02
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.022	1,2-Dibromo-3-chloropropane	<0.08
Toluene	<0.017	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.04
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.096	1,2,3-Trichlorobenzene	<0.019

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DP5CB1-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-08
Date Analyzed:	06/18/13	Data File:	061833.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	59	116
Toluene-d8	92	51	121
4-Bromofluorobenzene	120	32	146

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.02	1,3-Dichloropropane	<0.02
Chloromethane	<0.026	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.026
Bromomethane	<0.034	1,2-Dibromoethane (EDB)	<0.03
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	<0.02	Ethylbenzene	<0.013
Acetone	0.41 lc	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.026	m,p-Xylene	<0.03
Methylene chloride	0.31 lc	o-Xylene	<0.034
Methyl t-butyl ether (MTBE)	<0.013	Styrene	<0.022
trans-1,2-Dichloroethene	<0.024	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.034
2,2-Dichloropropane	<0.026	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.022	Bromobenzene	<0.012
Chloroform	<0.017	1,3,5-Trimethylbenzene	<0.011
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.022	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.03	tert-Butylbenzene	<0.022
Benzene	<0.014	1,2,4-Trimethylbenzene	<0.016
Trichloroethene	<0.034	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	<0.012
Bromodichloromethane	<0.024	1,3-Dichlorobenzene	<0.02
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.022	1,2-Dibromo-3-chloropropane	<0.08
Toluene	<0.017	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.04
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.096	1,2,3-Trichlorobenzene	<0.019

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	DP5CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-09
Date Analyzed:	06/18/13	Data File:	061834.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.02	1,3-Dichloropropane	<0.02
Chloromethane	<0.026	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.026
Bromomethane	<0.034	1,2-Dibromoethane (EDB)	<0.03
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	0.046	Ethylbenzene	<0.013
Acetone	0.37 lc	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.026	m,p-Xylene	<0.03
Methylene chloride	<0.054	o-Xylene	<0.034
Methyl t-butyl ether (MTBE)	<0.013	Styrene	<0.022
trans-1,2-Dichloroethene	<0.024	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.034
2,2-Dichloropropane	<0.026	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.022	Bromobenzene	<0.012
Chloroform	<0.017	1,3,5-Trimethylbenzene	<0.011
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.022	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.03	tert-Butylbenzene	<0.022
Benzene	<0.014	1,2,4-Trimethylbenzene	<0.016
Trichloroethene	<0.034	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	<0.012
Bromodichloromethane	<0.024	1,3-Dichlorobenzene	<0.02
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.022	1,2-Dibromo-3-chloropropane	<0.08
Toluene	<0.017	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.04
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.096	1,2,3-Trichlorobenzene	<0.019

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	03-1113 mb
Date Analyzed:	06/18/13	Data File:	061810.D
Matrix:	Soil/Solid	Instrument:	GCMS9
Units:	mg/kg (ppm)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Dichlorodifluoromethane	<0.020	1,3-Dichloropropane	<0.020
Chloromethane	<0.025	Tetrachloroethene	<0.026
Vinyl chloride	<0.016	Dibromochloromethane	<0.025
Bromomethane	<0.034	1,2-Dibromoethane (EDB)	<0.029
Chloroethane	<0.024	Chlorobenzene	<0.014 jl
Trichlorofluoromethane	<0.021	Ethylbenzene	<0.013
Acetone	<0.21	1,1,1,2-Tetrachloroethane	<0.028
1,1-Dichloroethene	<0.027	m,p-Xylene	<0.03
Methylene chloride	<0.054	o-Xylene	<0.020
Methyl t-butyl ether (MTBE)	<0.013	Styrene	<0.021
trans-1,2-Dichloroethene	<0.023	Isopropylbenzene	<0.019
1,1-Dichloroethane	<0.017	Bromoform	<0.035
2,2-Dichloropropane	<0.025	n-Propylbenzene	<0.017
cis-1,2-Dichloroethene	<0.021	Bromobenzene	<0.012
Chloroform	<0.017	1,3,5-Trimethylbenzene	<0.011
2-Butanone (MEK)	<0.14	1,1,2,2-Tetrachloroethane	<0.036
1,2-Dichloroethane (EDC)	<0.016	1,2,3-Trichloropropane	<0.022
1,1,1-Trichloroethane	<0.021	2-Chlorotoluene	<0.016
1,1-Dichloropropene	<0.024	4-Chlorotoluene	<0.019
Carbon tetrachloride	<0.030	tert-Butylbenzene	<0.021
Benzene	<0.014	1,2,4-Trimethylbenzene	<0.016
Trichloroethene	<0.033	sec-Butylbenzene	<0.015
1,2-Dichloropropane	<0.034	p-Isopropyltoluene	<0.012
Bromodichloromethane	<0.025	1,3-Dichlorobenzene	<0.020
Dibromomethane	<0.022	1,4-Dichlorobenzene	<0.032
4-Methyl-2-pentanone	<0.14	1,2-Dichlorobenzene	<0.016
cis-1,3-Dichloropropene	<0.023	1,2-Dibromo-3-chloropropane	<0.080
Toluene	<0.017	1,2,4-Trichlorobenzene	<0.036
trans-1,3-Dichloropropene	<0.015	Hexachlorobutadiene	<0.041
1,1,2-Trichloroethane	<0.014	Naphthalene	<0.024
2-Hexanone	<0.095	1,2,3-Trichlorobenzene	<0.019

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	TRIP BLANK-061013B	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-04
Date Analyzed:	06/18/13	Data File:	061812.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13 pr	Dibromochloromethane	<0.24
Bromomethane	<0.2	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	03-1114 mb
Date Analyzed:	06/18/13	Data File:	061809.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13	Dibromochloromethane	<0.24
Bromomethane	<0.2	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18	Chlorobenzene	<0.1
Trichlorofluoromethane	<0.17	Ethylbenzene	<0.16
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15
1,1-Dichloroethane	<0.18	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18
2-Butanone (MEK)	<0.94	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15
Benzene	<0.13	1,2,4-Trimethylbenzene	<0.11
Trichloroethene	<0.17	sec-Butylbenzene	<0.12
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DP4CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-01 1/400
Date Analyzed:	06/24/13	Data File:	062409.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	86 ds	56	115
Phenol-d6	70 ds	54	113
Nitrobenzene-d5	64 ds	31	164
2-Fluorobiphenyl	90 ds	47	133
2,4,6-Tribromophenol	22 ds	35	141
Terphenyl-d14	156 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<2.2	2,4,6-Trichlorophenol	<3.2
Bis(2-chloroethyl) ether	<0.64	2,4,5-Trichlorophenol	<3.8
2-Chlorophenol	<2.5	2-Chloronaphthalene	<0.56
1,3-Dichlorobenzene	<1	2-Nitroaniline	<1
1,4-Dichlorobenzene	<0.96	Dimethyl phthalate	<0.48
1,2-Dichlorobenzene	<1.6	2,6-Dinitrotoluene	<0.72
Benzyl alcohol	<2	3-Nitroaniline	<7
Bis(2-chloroisopropyl) ether	<0.64	2,4-Dinitrophenol	<5.5
2-Methylphenol	<2.6	Dibenzofuran	<0.4
Hexachloroethane	<1.4	2,4-Dinitrotoluene	<0.64
N-Nitroso-di-n-propylamine	<1.2	4-Nitrophenol	<7.1
3-Methylphenol + 4-Methylphenol	<5.8	Diethyl phthalate	<1.6
Nitrobenzene	<1	4-Chlorophenyl phenyl ether	<0.64
Isophorone	<0.48	N-Nitrosodiphenylamine	<0.4
2-Nitrophenol	<3.3	4-Nitroaniline	<7.3
2,4-Dimethylphenol	<7.4	4,6-Dinitro-2-methylphenol	<4.2
Benzoic acid	<22	4-Bromophenyl phenyl ether	<0.64
Bis(2-chloroethoxy)methane	<0.56	Hexachlorobenzene	<0.4
2,4-Dichlorophenol	<2.3	Pentachlorophenol	<2.5
1,2,4-Trichlorobenzene	<1.4	Carbazole	<0.8
Hexachlorobutadiene	<0.8	Di-n-butyl phthalate	<8
4-Chloroaniline	<71	Benzyl butyl phthalate	3.2
4-Chloro-3-methylphenol	<1.8	Bis(2-ethylhexyl) phthalate	<5.4
2-Methylnaphthalene	<0.4	Di-n-octyl phthalate	2.2
Hexachlorocyclopentadiene	<0.88		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DP6CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-02 1/400
Date Analyzed:	06/24/13	Data File:	062410.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	90 ds	56	115
Phenol-d6	44 ds	54	113
Nitrobenzene-d5	100 ds	31	164
2-Fluorobiphenyl	88 ds	47	133
2,4,6-Tribromophenol	64 ds	35	141
Terphenyl-d14	114 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<2.2	2,4,6-Trichlorophenol	<3.2
Bis(2-chloroethyl) ether	<0.64	2,4,5-Trichlorophenol	<3.8
2-Chlorophenol	<2.5	2-Chloronaphthalene	<0.56
1,3-Dichlorobenzene	<1	2-Nitroaniline	<1
1,4-Dichlorobenzene	<0.96	Dimethyl phthalate	<0.48
1,2-Dichlorobenzene	<1.6	2,6-Dinitrotoluene	<0.72
Benzyl alcohol	<2	3-Nitroaniline	<7
Bis(2-chloroisopropyl) ether	<0.64	2,4-Dinitrophenol	<5.5
2-Methylphenol	<2.6	Dibenzofuran	<0.4
Hexachloroethane	<1.4	2,4-Dinitrotoluene	<0.64
N-Nitroso-di-n-propylamine	<1.2	4-Nitrophenol	<7.1
3-Methylphenol + 4-Methylphenol	<5.8	Diethyl phthalate	<1.6
Nitrobenzene	<1	4-Chlorophenyl phenyl ether	<0.64
Isophorone	<0.48	N-Nitrosodiphenylamine	<0.4
2-Nitrophenol	<3.3	4-Nitroaniline	<7.3
2,4-Dimethylphenol	<7.4	4,6-Dinitro-2-methylphenol	<4.2
Benzoic acid	<22	4-Bromophenyl phenyl ether	<0.64
Bis(2-chloroethoxy)methane	<0.56	Hexachlorobenzene	<0.4
2,4-Dichlorophenol	<2.3	Pentachlorophenol	<2.5
1,2,4-Trichlorobenzene	<1.4	Carbazole	<0.8
Hexachlorobutadiene	<0.8	Di-n-butyl phthalate	<8
4-Chloroaniline	<71	Benzyl butyl phthalate	<2.3
4-Chloro-3-methylphenol	<1.8	Bis(2-ethylhexyl) phthalate	40
2-Methylnaphthalene	<0.4	Di-n-octyl phthalate	2.8
Hexachlorocyclopentadiene	<0.88		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DP1CB3-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-03 1/400
Date Analyzed:	06/24/13	Data File:	062411.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	76 ds	56	115
Phenol-d6	54 ds	54	113
Nitrobenzene-d5	60 ds	31	164
2-Fluorobiphenyl	80 ds	47	133
2,4,6-Tribromophenol	66 ds	35	141
Terphenyl-d14	100 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<2.2	2,4,6-Trichlorophenol	<3.2
Bis(2-chloroethyl) ether	<0.64	2,4,5-Trichlorophenol	<3.8
2-Chlorophenol	<2.5	2-Chloronaphthalene	<0.56
1,3-Dichlorobenzene	<1	2-Nitroaniline	<1
1,4-Dichlorobenzene	<0.96	Dimethyl phthalate	<0.48
1,2-Dichlorobenzene	<1.6	2,6-Dinitrotoluene	<0.72
Benzyl alcohol	<2	3-Nitroaniline	<7
Bis(2-chloroisopropyl) ether	<0.64	2,4-Dinitrophenol	<5.5
2-Methylphenol	<2.6	Dibenzofuran	<0.4
Hexachloroethane	<1.4	2,4-Dinitrotoluene	<0.64
N-Nitroso-di-n-propylamine	<1.2	4-Nitrophenol	<7.1
3-Methylphenol + 4-Methylphenol	<5.8	Diethyl phthalate	<1.6
Nitrobenzene	<1	4-Chlorophenyl phenyl ether	<0.64
Isophorone	<0.48	N-Nitrosodiphenylamine	<0.4
2-Nitrophenol	<3.3	4-Nitroaniline	<7.3
2,4-Dimethylphenol	<7.4	4,6-Dinitro-2-methylphenol	<4.2
Benzoic acid	<22	4-Bromophenyl phenyl ether	<0.64
Bis(2-chloroethoxy)methane	<0.56	Hexachlorobenzene	<0.4
2,4-Dichlorophenol	<2.3	Pentachlorophenol	<2.5
1,2,4-Trichlorobenzene	<1.4	Carbazole	<0.8
Hexachlorobutadiene	<0.8	Di-n-butyl phthalate	<8
4-Chloroaniline	<71	Benzyl butyl phthalate	<2.3
4-Chloro-3-methylphenol	<1.8	Bis(2-ethylhexyl) phthalate	<5.4
2-Methylnaphthalene	<0.4	Di-n-octyl phthalate	<1.4
Hexachlorocyclopentadiene	<0.88		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DP1CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-05 1/400
Date Analyzed:	06/24/13	Data File:	062412.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	14 ds	56	115
Phenol-d6	18 ds	54	113
Nitrobenzene-d5	50 ds	31	164
2-Fluorobiphenyl	72 ds	47	133
2,4,6-Tribromophenol	56 ds	35	141
Terphenyl-d14	126 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<2.2	2,4,6-Trichlorophenol	<3.2
Bis(2-chloroethyl) ether	<0.64	2,4,5-Trichlorophenol	<3.8
2-Chlorophenol	<2.5	2-Chloronaphthalene	<0.56
1,3-Dichlorobenzene	<1	2-Nitroaniline	<1
1,4-Dichlorobenzene	<0.96	Dimethyl phthalate	<0.48
1,2-Dichlorobenzene	<1.6	2,6-Dinitrotoluene	<0.72
Benzyl alcohol	2.0	3-Nitroaniline	<7
Bis(2-chloroisopropyl) ether	<0.64	2,4-Dinitrophenol	<5.5
2-Methylphenol	<2.6	Dibenzofuran	<0.4
Hexachloroethane	<1.4	2,4-Dinitrotoluene	<0.64
N-Nitroso-di-n-propylamine	<1.2	4-Nitrophenol	<7.1
3-Methylphenol + 4-Methylphenol	<5.8	Diethyl phthalate	<1.6
Nitrobenzene	<1	4-Chlorophenyl phenyl ether	<0.64
Isophorone	<0.48	N-Nitrosodiphenylamine	<0.4
2-Nitrophenol	<3.3	4-Nitroaniline	<7.3
2,4-Dimethylphenol	<7.4	4,6-Dinitro-2-methylphenol	<4.2
Benzoic acid	<22	4-Bromophenyl phenyl ether	<0.64
Bis(2-chloroethoxy)methane	<0.56	Hexachlorobenzene	<0.4
2,4-Dichlorophenol	<2.3	Pentachlorophenol	<2.5
1,2,4-Trichlorobenzene	<1.4	Carbazole	<0.8
Hexachlorobutadiene	<0.8	Di-n-butyl phthalate	<8
4-Chloroaniline	<71	Benzyl butyl phthalate	<2.3
4-Chloro-3-methylphenol	<1.8	Bis(2-ethylhexyl) phthalate	9.1
2-Methylnaphthalene	<0.4	Di-n-octyl phthalate	<1.4 J
Hexachlorocyclopentadiene	<0.88		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DP2CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-06 1/400
Date Analyzed:	06/24/13	Data File:	062413.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	12 ds	56	115
Phenol-d6	40 ds	54	113
Nitrobenzene-d5	82 ds	31	164
2-Fluorobiphenyl	68 ds	47	133
2,4,6-Tribromophenol	54 ds	35	141
Terphenyl-d14	100 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<2.2	2,4,6-Trichlorophenol	<3.2
Bis(2-chloroethyl) ether	<0.64	2,4,5-Trichlorophenol	<3.8
2-Chlorophenol	<2.5	2-Chloronaphthalene	<0.56
1,3-Dichlorobenzene	<1	2-Nitroaniline	<1
1,4-Dichlorobenzene	<0.96	Dimethyl phthalate	<0.48
1,2-Dichlorobenzene	<1.6	2,6-Dinitrotoluene	<0.72
Benzyl alcohol	<2	3-Nitroaniline	<7
Bis(2-chloroisopropyl) ether	<0.64	2,4-Dinitrophenol	<5.5
2-Methylphenol	<2.6	Dibenzofuran	<0.4
Hexachloroethane	<1.4	2,4-Dinitrotoluene	<0.64
N-Nitroso-di-n-propylamine	<1.2	4-Nitrophenol	<7.1
3-Methylphenol + 4-Methylphenol	<5.8	Diethyl phthalate	<1.6
Nitrobenzene	<1	4-Chlorophenyl phenyl ether	<0.64
Isophorone	<0.48	N-Nitrosodiphenylamine	<0.4
2-Nitrophenol	<3.3	4-Nitroaniline	<7.3
2,4-Dimethylphenol	<7.4	4,6-Dinitro-2-methylphenol	<4.2
Benzoic acid	<22	4-Bromophenyl phenyl ether	<0.64
Bis(2-chloroethoxy)methane	<0.56	Hexachlorobenzene	<0.4
2,4-Dichlorophenol	<2.3	Pentachlorophenol	<2.5
1,2,4-Trichlorobenzene	<1.4	Carbazole	<0.8
Hexachlorobutadiene	<0.8	Di-n-butyl phthalate	<8
4-Chloroaniline	<71	Benzyl butyl phthalate	<2.3
4-Chloro-3-methylphenol	<1.8	Bis(2-ethylhexyl) phthalate	6.6
2-Methylnaphthalene	<0.4	Di-n-octyl phthalate	<1.4
Hexachlorocyclopentadiene	<0.88		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DP4CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-07 1/400
Date Analyzed:	06/24/13	Data File:	062414.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	26 ds	56	115
Phenol-d6	40 ds	54	113
Nitrobenzene-d5	80 ds	31	164
2-Fluorobiphenyl	80 ds	47	133
2,4,6-Tribromophenol	26 ds	35	141
Terphenyl-d14	100 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<2.2	2,4,6-Trichlorophenol	<3.2
Bis(2-chloroethyl) ether	<0.64	2,4,5-Trichlorophenol	<3.8
2-Chlorophenol	<2.5	2-Chloronaphthalene	<0.56
1,3-Dichlorobenzene	<1	2-Nitroaniline	<1
1,4-Dichlorobenzene	<0.96	Dimethyl phthalate	<0.48
1,2-Dichlorobenzene	<1.6	2,6-Dinitrotoluene	<0.72
Benzyl alcohol	<2	3-Nitroaniline	<7
Bis(2-chloroisopropyl) ether	<0.64	2,4-Dinitrophenol	<5.5
2-Methylphenol	<2.6	Dibenzofuran	<0.4
Hexachloroethane	<1.4	2,4-Dinitrotoluene	<0.64
N-Nitroso-di-n-propylamine	<1.2	4-Nitrophenol	<7.1
3-Methylphenol + 4-Methylphenol	<5.8	Diethyl phthalate	<1.6
Nitrobenzene	<1	4-Chlorophenyl phenyl ether	<0.64
Isophorone	<0.48	N-Nitrosodiphenylamine	<0.4
2-Nitrophenol	<3.3	4-Nitroaniline	<7.3
2,4-Dimethylphenol	<7.4	4,6-Dinitro-2-methylphenol	<4.2
Benzoic acid	<22	4-Bromophenyl phenyl ether	<0.64
Bis(2-chloroethoxy)methane	<0.56	Hexachlorobenzene	<0.4
2,4-Dichlorophenol	<2.3	Pentachlorophenol	<2.5
1,2,4-Trichlorobenzene	<1.4	Carbazole	<0.8
Hexachlorobutadiene	<0.8	Di-n-butyl phthalate	<8
4-Chloroaniline	<71	Benzyl butyl phthalate	<2.3
4-Chloro-3-methylphenol	<1.8	Bis(2-ethylhexyl) phthalate	55
2-Methylnaphthalene	<0.4	Di-n-octyl phthalate	<1.4
Hexachlorocyclopentadiene	<0.88		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DP5CB1-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-08 1/400
Date Analyzed:	06/24/13	Data File:	062415.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	14 ds	56	115
Phenol-d6	40 ds	54	113
Nitrobenzene-d5	60 ds	31	164
2-Fluorobiphenyl	80 ds	47	133
2,4,6-Tribromophenol	54 ds	35	141
Terphenyl-d14	120 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<2.2	2,4,6-Trichlorophenol	<3.2
Bis(2-chloroethyl) ether	<0.64	2,4,5-Trichlorophenol	<3.8
2-Chlorophenol	<2.5	2-Chloronaphthalene	<0.56
1,3-Dichlorobenzene	<1	2-Nitroaniline	<1
1,4-Dichlorobenzene	<0.96	Dimethyl phthalate	<0.48
1,2-Dichlorobenzene	<1.6	2,6-Dinitrotoluene	<0.72
Benzyl alcohol	<2	3-Nitroaniline	<7
Bis(2-chloroisopropyl) ether	<0.64	2,4-Dinitrophenol	<5.5
2-Methylphenol	<2.6	Dibenzofuran	<0.4
Hexachloroethane	<1.4	2,4-Dinitrotoluene	<0.64
N-Nitroso-di-n-propylamine	<1.2	4-Nitrophenol	<7.1
3-Methylphenol + 4-Methylphenol	<5.8	Diethyl phthalate	9.7
Nitrobenzene	<1	4-Chlorophenyl phenyl ether	<0.64
Isophorone	<0.48	N-Nitrosodiphenylamine	<0.4
2-Nitrophenol	<3.3	4-Nitroaniline	<7.3
2,4-Dimethylphenol	<7.4	4,6-Dinitro-2-methylphenol	<4.2
Benzoic acid	<22	4-Bromophenyl phenyl ether	<0.64
Bis(2-chloroethoxy)methane	<0.56	Hexachlorobenzene	<0.4
2,4-Dichlorophenol	<2.3	Pentachlorophenol	<2.5
1,2,4-Trichlorobenzene	<1.4	Carbazole	<0.8
Hexachlorobutadiene	<0.8	Di-n-butyl phthalate	<8
4-Chloroaniline	<71	Benzyl butyl phthalate	<2.3
4-Chloro-3-methylphenol	<1.8	Bis(2-ethylhexyl) phthalate	20
2-Methylnaphthalene	<0.4	Di-n-octyl phthalate	<1.4
Hexachlorocyclopentadiene	<0.88		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	DP5CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-09 1/400
Date Analyzed:	06/24/13	Data File:	062408.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	48 ds	56	115
Phenol-d6	46 ds	54	113
Nitrobenzene-d5	60 ds	31	164
2-Fluorobiphenyl	72 ds	47	133
2,4,6-Tribromophenol	74 ds	35	141
Terphenyl-d14	234 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<2.2	2,4,6-Trichlorophenol	<3.2
Bis(2-chloroethyl) ether	<0.64	2,4,5-Trichlorophenol	<3.8
2-Chlorophenol	<2.5	2-Chloronaphthalene	<0.56
1,3-Dichlorobenzene	<1	2-Nitroaniline	<1
1,4-Dichlorobenzene	<0.96	Dimethyl phthalate	<0.48
1,2-Dichlorobenzene	<1.6	2,6-Dinitrotoluene	<0.72
Benzyl alcohol	<2	3-Nitroaniline	<7
Bis(2-chloroisopropyl) ether	<0.64	2,4-Dinitrophenol	<5.5
2-Methylphenol	<2.6	Dibenzofuran	<0.4
Hexachloroethane	<1.4	2,4-Dinitrotoluene	<0.64
N-Nitroso-di-n-propylamine	<1.2	4-Nitrophenol	<7.1
3-Methylphenol + 4-Methylphenol	<5.8	Diethyl phthalate	<1.6
Nitrobenzene	<1	4-Chlorophenyl phenyl ether	<0.64
Isophorone	<0.48	N-Nitrosodiphenylamine	<0.4
2-Nitrophenol	<3.3	4-Nitroaniline	<7.3
2,4-Dimethylphenol	<7.4	4,6-Dinitro-2-methylphenol	<4.2
Benzoic acid	<22	4-Bromophenyl phenyl ether	<0.64
Bis(2-chloroethoxy)methane	<0.56	Hexachlorobenzene	<0.4
2,4-Dichlorophenol	<2.3	Pentachlorophenol	<2.5
1,2,4-Trichlorobenzene	<1.4	Carbazole	<0.8
Hexachlorobutadiene	<0.8	Di-n-butyl phthalate	<8
4-Chloroaniline	<71	Benzyl butyl phthalate	<2.3
4-Chloro-3-methylphenol	<1.8	Bis(2-ethylhexyl) phthalate	24
2-Methylnaphthalene	<0.4	Di-n-octyl phthalate	<1.4
Hexachlorocyclopentadiene	<0.88		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	03-1189 mb
Date Analyzed:	06/21/13	Data File:	062105.D
Matrix:	Soil/Solid	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	84	56	115
Phenol-d6	94	54	113
Nitrobenzene-d5	95	31	164
2-Fluorobiphenyl	92	47	133
2,4,6-Tribromophenol	101	35	141
Terphenyl-d14	98	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.0054	2,4,6-Trichlorophenol	<0.0038
Bis(2-chloroethyl) ether	<0.0019	2,4,5-Trichlorophenol	<0.0078
2-Chlorophenol	<0.0058	2-Chloronaphthalene	<0.0015
1,3-Dichlorobenzene	<0.0016	2-Nitroaniline	<0.0022
1,4-Dichlorobenzene	<0.0013	Dimethyl phthalate	<0.0011
1,2-Dichlorobenzene	<0.0019	2,6-Dinitrotoluene	<0.0011
Benzyl alcohol	<0.002	3-Nitroaniline	<0.004
Bis(2-chloroisopropyl) ether	<0.0019	2,4-Dinitrophenol	<0.02
2-Methylphenol	<0.0064	Dibenzofuran	<0.0013
Hexachloroethane	<0.0014	2,4-Dinitrotoluene	<0.00066
N-Nitroso-di-n-propylamine	<0.0013	4-Nitrophenol	<0.019
3-Methylphenol + 4-Methylphenol	<0.012	Diethyl phthalate	<0.0014
Nitrobenzene	<0.0022	4-Chlorophenyl phenyl ether	<0.0011
Isophorone	<0.00082	N-Nitrosodiphenylamine	<0.0013
2-Nitrophenol	<0.0058	4-Nitroaniline	<0.012
2,4-Dimethylphenol	<0.016	4,6-Dinitro-2-methylphenol	<0.016
Benzoic acid	<0.046	4-Bromophenyl phenyl ether	<0.0014
Bis(2-chloroethoxy)methane	<0.00094	Hexachlorobenzene	<0.0012
2,4-Dichlorophenol	<0.0052	Pentachlorophenol	<0.011
1,2,4-Trichlorobenzene	0.0017	Carbazole	<0.0028
Hexachlorobutadiene	<0.0014	Di-n-butyl phthalate	<0.002
4-Chloroaniline	<0.28	Benzyl butyl phthalate	<0.0012
4-Chloro-3-methylphenol	<0.0042	Bis(2-ethylhexyl) phthalate	<0.046
2-Methylnaphthalene	<0.0014	Di-n-octyl phthalate	<0.0017
Hexachlorocyclopentadiene	<0.0022		

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DP4CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-01 1/400
Date Analyzed:	06/22/13	Data File:	062221.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	738 ds	50	150
Benzo(a)anthracene-d12	198 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.088
Acenaphthylene	<0.036
Acenaphthene	0.087
Fluorene	<0.06
Phenanthrene	0.81
Anthracene	0.33
Fluoranthene	1.4
Pyrene	1.3
Benz(a)anthracene	0.42
Chrysene	0.79
Benzo(a)pyrene	0.40
Benzo(b)fluoranthene	0.71
Benzo(k)fluoranthene	0.20
Indeno(1,2,3-cd)pyrene	0.44
Dibenz(a,h)anthracene	0.17
Benzo(g,h,i)perylene	0.57

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DP6CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-02 1/400
Date Analyzed:	06/22/13	Data File:	062222.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	616 ds	50	150
Benzo(a)anthracene-d12	224 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.088
Acenaphthylene	<0.036
Acenaphthene	<0.056
Fluorene	<0.06
Phenanthrene	0.44
Anthracene	<0.035
Fluoranthene	0.69
Pyrene	0.73
Benz(a)anthracene	0.24
Chrysene	0.38
Benzo(a)pyrene	0.20
Benzo(b)fluoranthene	0.34
Benzo(k)fluoranthene	<0.14
Indeno(1,2,3-cd)pyrene	<0.25
Dibenz(a,h)anthracene	<0.14
Benzo(g,h,i)perylene	0.28

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DP1CB3-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-03 1/400
Date Analyzed:	06/22/13	Data File:	062223.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	912 ds	50	150
Benzo(a)anthracene-d12	130 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.088
Acenaphthylene	<0.036
Acenaphthene	<0.056
Fluorene	<0.06
Phenanthrene	<0.13
Anthracene	<0.035
Fluoranthene	0.12
Pyrene	0.11
Benz(a)anthracene	0.10
Chrysene	0.098
Benzo(a)pyrene	<0.088
Benzo(b)fluoranthene	0.094
Benzo(k)fluoranthene	<0.14
Indeno(1,2,3-cd)pyrene	<0.25
Dibenz(a,h)anthracene	<0.14
Benzo(g,h,i)perylene	<0.14

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DP1CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-05 1/400
Date Analyzed:	06/22/13	Data File:	062224.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	624 ds	50	150
Benzo(a)anthracene-d12	192 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.088
Acenaphthylene	<0.036
Acenaphthene	<0.056
Fluorene	<0.06
Phenanthrene	<0.13
Anthracene	<0.035
Fluoranthene	0.24
Pyrene	0.22
Benz(a)anthracene	0.11
Chrysene	0.23
Benzo(a)pyrene	<0.088
Benzo(b)fluoranthene	0.18
Benzo(k)fluoranthene	<0.14
Indeno(1,2,3-cd)pyrene	<0.25
Dibenz(a,h)anthracene	<0.14
Benzo(g,h,i)perylene	<0.14

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DP2CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-06 1/400
Date Analyzed:	06/22/13	Data File:	062225.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	548 ds	50	150
Benzo(a)anthracene-d12	134 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.088
Acenaphthylene	<0.036
Acenaphthene	<0.056
Fluorene	<0.06
Phenanthrene	0.29
Anthracene	<0.035
Fluoranthene	0.60
Pyrene	0.57
Benz(a)anthracene	0.25
Chrysene	0.44
Benzo(a)pyrene	0.21
Benzo(b)fluoranthene	0.46
Benzo(k)fluoranthene	<0.14
Indeno(1,2,3-cd)pyrene	<0.25
Dibenz(a,h)anthracene	<0.14
Benzo(g,h,i)perylene	0.24

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DP4CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-07 1/400
Date Analyzed:	06/22/13	Data File:	062226.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	562 ds	50	150
Benzo(a)anthracene-d12	190 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.088
Acenaphthylene	<0.036
Acenaphthene	<0.056
Fluorene	<0.06
Phenanthrene	0.66
Anthracene	0.047
Fluoranthene	1.0
Pyrene	0.79
Benz(a)anthracene	0.30
Chrysene	0.48
Benzo(a)pyrene	0.21
Benzo(b)fluoranthene	0.44
Benzo(k)fluoranthene	<0.14
Indeno(1,2,3-cd)pyrene	<0.25
Dibenz(a,h)anthracene	<0.14
Benzo(g,h,i)perylene	0.20

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DP5CB1-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-08 1/400
Date Analyzed:	06/23/13	Data File:	062227.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	658 ds	50	150
Benzo(a)anthracene-d12	308 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.088
Acenaphthylene	<0.036
Acenaphthene	<0.056
Fluorene	<0.06
Phenanthrene	0.38
Anthracene	0.084
Fluoranthene	0.73
Pyrene	0.79
Benz(a)anthracene	0.27
Chrysene	0.56
Benzo(a)pyrene	0.14
Benzo(b)fluoranthene	0.40
Benzo(k)fluoranthene	<0.14
Indeno(1,2,3-cd)pyrene	<0.25
Dibenz(a,h)anthracene	<0.14
Benzo(g,h,i)perylene	0.17

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	DP5CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	306182-09 1/400
Date Analyzed:	06/23/13	Data File:	062228.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	876 ds	50	150
Benzo(a)anthracene-d12	258 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.088
Acenaphthylene	<0.036
Acenaphthene	<0.056
Fluorene	<0.06
Phenanthrene	0.27
Anthracene	0.17
Fluoranthene	0.92
Pyrene	1.1
Benz(a)anthracene	0.50
Chrysene	1.1
Benzo(a)pyrene	0.31
Benzo(b)fluoranthene	0.88
Benzo(k)fluoranthene	0.28
Indeno(1,2,3-cd)pyrene	0.25
Dibenz(a,h)anthracene	<0.14
Benzo(g,h,i)perylene	0.24

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley/101.00205.00019
Date Extracted:	06/20/13	Lab ID:	03-1188 mb
Date Analyzed:	06/21/13	Data File:	062119.D
Matrix:	Soil/Solid	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	101	50	150
Benzo(a)anthracene-d12	121	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.00022
Acenaphthylene	<0.000091
Acenaphthene	<0.00014
Fluorene	<0.00015
Phenanthrene	<0.00032
Anthracene	<0.000088
Fluoranthene	<0.00028
Pyrene	<0.00026
Benz(a)anthracene	<0.00018
Chrysene	<0.00019
Benzo(a)pyrene	<0.00022
Benzo(b)fluoranthene	<0.00018
Benzo(k)fluoranthene	<0.00036
Indeno(1,2,3-cd)pyrene	<0.00062
Dibenz(a,h)anthracene	<0.00034
Benzo(g,h,i)perylene	<0.00034

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DP4CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/13/13	Lab ID:	306182-01 1/20
Date Analyzed:	07/12/13	Data File:	24.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	70 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.66
Aroclor 1232	<0.66
Aroclor 1016	<0.66
Aroclor 1242	<0.66
Aroclor 1248	<0.66
Aroclor 1254	<0.66
Aroclor 1260	<0.66

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DP6CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/13/13	Lab ID:	306182-02 1/20
Date Analyzed:	07/12/13	Data File:	26.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	100 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.66
Aroclor 1232	<0.66
Aroclor 1016	<0.66
Aroclor 1242	<0.66
Aroclor 1248	<0.66
Aroclor 1254	<0.66
Aroclor 1260	<0.66

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DP1CB3-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/13/13	Lab ID:	306182-03 1/10
Date Analyzed:	06/25/13	Data File:	16.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	80 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.33
Aroclor 1232	<0.33
Aroclor 1016	<0.33
Aroclor 1242	<0.33
Aroclor 1248	<0.33
Aroclor 1254	<0.33
Aroclor 1260	<0.33

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DP1CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/13/13	Lab ID:	306182-05 1/10
Date Analyzed:	06/25/13	Data File:	18.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	65 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.33
Aroclor 1232	<0.33
Aroclor 1016	<0.33
Aroclor 1242	<0.33
Aroclor 1248	<0.33
Aroclor 1254	<0.33
Aroclor 1260	<0.33

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DP2CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/13/13	Lab ID:	306182-06 1/20
Date Analyzed:	07/12/13	Data File:	30.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	120 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.66
Aroclor 1232	<0.66
Aroclor 1016	<0.66
Aroclor 1242	<0.66
Aroclor 1248	<0.66
Aroclor 1254	<0.66
Aroclor 1260	<0.66

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DP4CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/13/13	Lab ID:	306182-07 1/20
Date Analyzed:	07/12/13	Data File:	32.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	110 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.66
Aroclor 1232	<0.66
Aroclor 1016	<0.66
Aroclor 1242	<0.66
Aroclor 1248	<0.66
Aroclor 1254	<0.66
Aroclor 1260	<0.66

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DP5CB1-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/13/13	Lab ID:	306182-08 1/20
Date Analyzed:	07/12/13	Data File:	34.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	70 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.66
Aroclor 1232	<0.66
Aroclor 1016	<0.66
Aroclor 1242	<0.66
Aroclor 1248	<0.66
Aroclor 1254	<0.66
Aroclor 1260	<0.66

Analysis For PCBs By EPA Method 8082

Client Sample ID:	DP5CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/13/13	Lab ID:	306182-09 1/20
Date Analyzed:	07/12/13	Data File:	36.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	110 ds	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.66
Aroclor 1232	<0.66
Aroclor 1016	<0.66
Aroclor 1242	<0.66
Aroclor 1248	<0.66
Aroclor 1254	<0.66
Aroclor 1260	<0.66

Analysis For PCBs By EPA Method 8082

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley/101.00205.00019
Date Extracted:	06/13/13	Lab ID:	03-1150 mb 1/0.2
Date Analyzed:	06/18/13	Data File:	10.D\ECD1A.CH
Matrix:	Soil/Solid	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	92	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.033
Aroclor 1232	<0.033
Aroclor 1016	<0.033
Aroclor 1242	<0.033
Aroclor 1248	<0.033
Aroclor 1254	<0.033
Aroclor 1260	<0.033

Analysis For Total Metals By EPA Method 200.8

Client ID:	DP4CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-01
Date Analyzed:	06/19/13	Data File:	306182-01.039
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	105	60	125
Indium	88	60	125
Holmium	97	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	0.196
Chromium	114
Nickel	39.6
Copper	202 fb
Zinc	1,230
Arsenic	14.3
Selenium	<0.912
Silver	0.481
Cadmium	3.89
Antimony	5.19
Barium	209
Thallium	0.404
Lead	526

Analysis For Total Metals By EPA Method 200.8

Client ID:	DP6CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-02
Date Analyzed:	06/19/13	Data File:	306182-02.040
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	97	60	125
Indium	91	60	125
Holmium	99	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	0.163
Chromium	87.8
Nickel	35.4
Copper	163 fb
Zinc	878
Arsenic	8.61
Selenium	<0.912
Silver	0.378
Cadmium	2.01
Antimony	4.17
Barium	102
Thallium	0.234
Lead	327

Analysis For Total Metals By EPA Method 200.8

Client ID:	DP1CB3-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-03
Date Analyzed:	06/19/13	Data File:	306182-03.041
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	92	60	125
Indium	87	60	125
Holmium	97	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	0.170
Chromium	19.1
Nickel	20.8
Copper	53.4 fb
Zinc	285
Arsenic	3.87
Selenium	<0.912
Silver	0.145
Cadmium	0.866
Antimony	0.681
Barium	122
Thallium	<0.0434
Lead	52.6

Analysis For Total Metals By EPA Method 200.8

Client ID:	DP1CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-05
Date Analyzed:	06/19/13	Data File:	306182-05.042
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	110	60	125
Indium	90	60	125
Holmium	101	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	0.116
Chromium	30.9
Nickel	20.5
Copper	77.7 fb
Zinc	543
Arsenic	9.19
Selenium	<0.912
Silver	0.134
Cadmium	1.50
Antimony	0.845
Barium	173
Thallium	0.0459
Lead	84.3

Analysis For Total Metals By EPA Method 200.8

Client ID:	DP2CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-06
Date Analyzed:	06/19/13	Data File:	306182-06.043
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	121	60	125
Indium	92	60	125
Holmium	102	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	0.129
Chromium	51.3
Nickel	41.9
Copper	187 fb
Zinc	882
Arsenic	8.05
Selenium	<0.912
Silver	0.339
Cadmium	1.68
Antimony	2.61
Barium	158
Thallium	<0.0434
Lead	78.7

Analysis For Total Metals By EPA Method 200.8

Client ID:	DP4CB2-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-07 x10
Date Analyzed:	06/19/13	Data File:	306182-07 x10.048
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	97	60	125
Indium	90	60	125
Holmium	97	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.858
Chromium	105
Nickel	56.6
Copper	149 fb
Zinc	2,300
Arsenic	25.1
Selenium	<9.12
Silver	<0.784
Cadmium	<2.04
Antimony	2.83
Barium	215
Thallium	0.596
Lead	206

Analysis For Total Metals By EPA Method 200.8

Client ID:	DP5CB1-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-08 x10
Date Analyzed:	06/19/13	Data File:	306182-08 x10.049
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	95	60	125
Indium	90	60	125
Holmium	98	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.858
Chromium	124
Nickel	132
Copper	447 fb
Zinc	983
Arsenic	16.5
Selenium	<9.12
Silver	<0.784
Cadmium	<2.04
Antimony	4.23
Barium	152
Thallium	0.452
Lead	87.7

Analysis For Total Metals By EPA Method 200.8

Client ID:	DP5CB4-061013	Client:	SLR International Corp.
Date Received:	06/12/13	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	306182-09
Date Analyzed:	06/19/13	Data File:	306182-09.047
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	114	60	125
Indium	90	60	125
Holmium	97	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	0.197
Chromium	56.9
Nickel	32.7
Copper	119 fb
Zinc	983
Arsenic	18.6
Selenium	<0.912
Silver	0.308
Cadmium	2.22
Antimony	4.66
Barium	127
Thallium	0.136
Lead	181

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley/101.00205.00019
Date Extracted:	06/18/13	Lab ID:	I3-354 mb
Date Analyzed:	06/19/13	Data File:	I3-354 mb.021
Matrix:	Soil/Solid	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	86	60	125
Indium	87	60	125
Holmium	94	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.0858
Chromium	<0.471
Nickel	<0.206
Copper	0.0790 j
Zinc	<0.969
Arsenic	<0.422
Selenium	<0.912
Silver	<0.0784
Cadmium	<0.204
Antimony	<0.106
Barium	<0.0524
Thallium	<0.0434 j
Lead	<0.0496

Date of Report: 07/22/13
Date Received: 06/12/13
Project: Crowley/101.00205.00019, F&BI 306182
Date Extracted: 06/18/13
Date Analyzed: 06/19/13

RESULTS FROM THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
DP4CB4-061013 306182-01	0.086
DP6CB4-061013 306182-02	0.10
DP1CB3-061013 306182-03	0.097
DP1CB2-061013 306182-05	0.27
DP2CB2-061013 306182-06	0.10
DP4CB2-061013 306182-07	0.086
DP5CB1-061013 306182-08	0.099
DP5CB4-061013 306182-09	0.14
Method Blank	<0.002

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	mg/kg (ppm)	10	90	90	61-153	0

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QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 306183-03 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	500	88	102	64-133	15

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	500	107	58-147

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 306117-05 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	mg/kg (ppm)	2.5	<0.5	8 vo	8 vo	10-56	0
Chloromethane	mg/kg (ppm)	2.5	<0.5	34	34	10-90	0
Vinyl chloride	mg/kg (ppm)	2.5	<0.05	31	31	10-91	0
Bromomethane	mg/kg (ppm)	2.5	<0.5	107	120 vo	10-110	11
Chloroethane	mg/kg (ppm)	2.5	<0.5	59	61	10-101	3
Trichlorofluoromethane	mg/kg (ppm)	2.5	<0.5	35	35	10-95	0
Acetone	mg/kg (ppm)	12.5	<0.5	70	72	11-141	3
1,1-Dichloroethene	mg/kg (ppm)	2.5	<0.05	39	36	11-103	8
Methylene chloride	mg/kg (ppm)	2.5	<0.5	61	62	14-128	2
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	68	71	17-134	4
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	52	53	13-112	2
1,1-Dichloroethane	mg/kg (ppm)	2.5	<0.05	58	59	23-115	2
2,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	53	58	18-117	9
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	<0.05	60	62	25-120	3
Chloroform	mg/kg (ppm)	2.5	<0.05	60	62	29-117	3
2-Butanone (MEK)	mg/kg (ppm)	12.5	<0.5	67	72	20-133	7
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	62	65	22-124	5
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	<0.05	54	57	27-112	5
1,1-Dichloropropene	mg/kg (ppm)	2.5	<0.05	49	50	26-107	2
Carbon tetrachloride	mg/kg (ppm)	2.5	<0.05	54	57	22-115	5
Benzene	mg/kg (ppm)	2.5	<0.03	57	58	26-114	2
Trichloroethene	mg/kg (ppm)	2.5	<0.03	55	56	30-112	2
1,2-Dichloropropane	mg/kg (ppm)	2.5	<0.05	60	64	31-119	6
Bromodichloromethane	mg/kg (ppm)	2.5	<0.05	65	68	31-131	5
Dibromomethane	mg/kg (ppm)	2.5	<0.05	64	67	27-124	5
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	<0.5	74	79	16-147	7
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	63	68	28-137	8
Toluene	mg/kg (ppm)	2.5	<0.05	55	57	34-112	4
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	<0.05	58	64	30-136	10
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	<0.05	64	68	32-126	6
2-Hexanone	mg/kg (ppm)	12.5	<0.5	73	77	17-147	5
1,3-Dichloropropane	mg/kg (ppm)	2.5	<0.05	63	66	29-125	5
Tetrachloroethene	mg/kg (ppm)	2.5	<0.025	46	48	27-110	4
Dibromochloromethane	mg/kg (ppm)	2.5	<0.05	65	69	32-143	6
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	65	73	32-126	12
Chlorobenzene	mg/kg (ppm)	2.5	<0.05	57	60	37-113	5
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	54	56	38-111	4
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	67	74	35-126	10
m,p-Xylene	mg/kg (ppm)	5	<0.1	54	56	38-112	4
o-Xylene	mg/kg (ppm)	2.5	<0.05	56	58	38-113	4
Styrene	mg/kg (ppm)	2.5	<0.05	58	61	38-118	5
Isopropylbenzene	mg/kg (ppm)	2.5	<0.05	52	56	37-114	7
Bromoform	mg/kg (ppm)	2.5	<0.05	64	71	18-155	10
n-Propylbenzene	mg/kg (ppm)	2.5	<0.05	48	52	36-114	8
Bromobenzene	mg/kg (ppm)	2.5	<0.05	54	57	40-115	5
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	48	52	35-116	8
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	<0.05	65	70	33-128	7
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	<0.05	62	65	33-123	5
2-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	51	54	39-110	6
4-Chlorotoluene	mg/kg (ppm)	2.5	<0.05	52	55	39-111	6
tert-Butylbenzene	mg/kg (ppm)	2.5	<0.05	49	52	36-116	6
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	<0.05	48	52	35-116	8
sec-Butylbenzene	mg/kg (ppm)	2.5	<0.05	46	49	33-118	6
p-Isopropyltoluene	mg/kg (ppm)	2.5	<0.05	45	48	32-119	6
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	50	53	38-111	6
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	50	54	39-109	8
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	<0.05	53	56	40-111	6
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	<0.5	58	66	34-134	13
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	39	43	31-117	10
Hexachlorobutadiene	mg/kg (ppm)	2.5	<0.25	32	34	25-122	6
Naphthalene	mg/kg (ppm)	2.5	<0.05	51	56	39-120	9
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	<0.25	40	45	35-117	12

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Dichlorodifluoromethane	mg/kg (ppm)	2.5	45	10-76
Chloromethane	mg/kg (ppm)	2.5	63	34-98
Vinyl chloride	mg/kg (ppm)	2.5	69	42-107
Bromomethane	mg/kg (ppm)	2.5	86	46-113
Chloroethane	mg/kg (ppm)	2.5	82	47-115
Trichlorofluoromethane	mg/kg (ppm)	2.5	80	53-112
Acetone	mg/kg (ppm)	12.5	86	39-147
1,1-Dichloroethene	mg/kg (ppm)	2.5	78	65-110
Methylene chloride	mg/kg (ppm)	2.5	82	62-119
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	82	72-122
trans-1,2-Dichloroethene	mg/kg (ppm)	2.5	83	71-113
1,1-Dichloroethane	mg/kg (ppm)	2.5	84	76-109
2,2-Dichloropropane	mg/kg (ppm)	2.5	93	64-151
cis-1,2-Dichloroethene	mg/kg (ppm)	2.5	83	77-110
Chloroform	mg/kg (ppm)	2.5	83	78-108
2-Butanone (MEK)	mg/kg (ppm)	12.5	83	60-121
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	82	80-109
1,1,1-Trichloroethane	mg/kg (ppm)	2.5	90	72-116
1,1-Dichloropropene	mg/kg (ppm)	2.5	82	77-108
Carbon tetrachloride	mg/kg (ppm)	2.5	103	67-123
Benzene	mg/kg (ppm)	2.5	81	75-107
Trichloroethene	mg/kg (ppm)	2.5	82	72-107
1,2-Dichloropropane	mg/kg (ppm)	2.5	85	78-111
Bromodichloromethane	mg/kg (ppm)	2.5	97	75-126
Dibromomethane	mg/kg (ppm)	2.5	87	80-111
4-Methyl-2-pentanone	mg/kg (ppm)	12.5	91	80-128
cis-1,3-Dichloropropene	mg/kg (ppm)	2.5	97	71-138
Toluene	mg/kg (ppm)	2.5	81	79-112
trans-1,3-Dichloropropene	mg/kg (ppm)	2.5	89	77-135
1,1,2-Trichloroethane	mg/kg (ppm)	2.5	85	84-115
2-Hexanone	mg/kg (ppm)	12.5	86	71-129
1,3-Dichloropropane	mg/kg (ppm)	2.5	83	82-113
Tetrachloroethene	mg/kg (ppm)	2.5	80	77-110
Dibromochloromethane	mg/kg (ppm)	2.5	98	64-152
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	102	83-116
Chlorobenzene	mg/kg (ppm)	2.5	81 vo	82-113
Ethylbenzene	mg/kg (ppm)	2.5	82	81-114
1,1,1,2-Tetrachloroethane	mg/kg (ppm)	2.5	107	76-125
m,p-Xylene	mg/kg (ppm)	5	84	82-115
o-Xylene	mg/kg (ppm)	2.5	83	81-116
Styrene	mg/kg (ppm)	2.5	85	81-118
Isopropylbenzene	mg/kg (ppm)	2.5	84	81-117
Bromoform	mg/kg (ppm)	2.5	102	50-174
n-Propylbenzene	mg/kg (ppm)	2.5	85	82-116
Bromobenzene	mg/kg (ppm)	2.5	82	82-118
1,3,5-Trimethylbenzene	mg/kg (ppm)	2.5	87	83-120
1,1,2,2-Tetrachloroethane	mg/kg (ppm)	2.5	91	83-125
1,2,3-Trichloropropane	mg/kg (ppm)	2.5	82	79-116
2-Chlorotoluene	mg/kg (ppm)	2.5	82	80-114
4-Chlorotoluene	mg/kg (ppm)	2.5	84	82-114
tert-Butylbenzene	mg/kg (ppm)	2.5	86	82-116
1,2,4-Trimethylbenzene	mg/kg (ppm)	2.5	85	82-116
sec-Butylbenzene	mg/kg (ppm)	2.5	87	81-123
p-Isopropyltoluene	mg/kg (ppm)	2.5	87	82-124
1,3-Dichlorobenzene	mg/kg (ppm)	2.5	83	80-118
1,4-Dichlorobenzene	mg/kg (ppm)	2.5	82	79-117
1,2-Dichlorobenzene	mg/kg (ppm)	2.5	82	80-118
1,2-Dibromo-3-chloropropane	mg/kg (ppm)	2.5	100	71-131
1,2,4-Trichlorobenzene	mg/kg (ppm)	2.5	83	75-122
Hexachlorobutadiene	mg/kg (ppm)	2.5	83	74-130
Naphthalene	mg/kg (ppm)	2.5	86	83-128
1,2,3-Trichlorobenzene	mg/kg (ppm)	2.5	81	80-126

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 306247-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<0.16	105	55-144
Chloromethane	ug/L (ppb)	50	<0.22	104	67-131
Vinyl chloride	ug/L (ppb)	50	0.52	106	61-139
Bromomethane	ug/L (ppb)	50	<0.2	635 vo	66-129
Chloroethane	ug/L (ppb)	50	<0.18	191 vo	68-126
Trichlorofluoromethane	ug/L (ppb)	50	<0.17	136 vo	71-128
Acetone	ug/L (ppb)	250	<2.6	109	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<0.19	105	71-123
Methylene chloride	ug/L (ppb)	50	<3	101	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<0.13	106	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<0.24	104	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<0.18	103	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<0.3	119	58-132
cis-1,2-Dichloroethene	ug/L (ppb)	50	3.6	102	73-119
Chloroform	ug/L (ppb)	50	<0.24	100	80-112
2-Butanone (MEK)	ug/L (ppb)	250	<0.94	105	69-123
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<0.11	100	78-113
1,1,1-Trichloroethane	ug/L (ppb)	50	<0.2	113	79-116
1,1-Dichloropropene	ug/L (ppb)	50	<0.26	99	67-121
Carbon tetrachloride	ug/L (ppb)	50	<0.24	128 vo	72-123
Benzene	ug/L (ppb)	50	<0.13	98	79-109
Trichloroethene	ug/L (ppb)	50	1.4	100	75-109
1,2-Dichloropropane	ug/L (ppb)	50	<0.32	101	80-111
Bromodichloromethane	ug/L (ppb)	50	<0.38	116	78-117
Dibromomethane	ug/L (ppb)	50	<0.28	106	80-112
4-Methyl-2-pentanone	ug/L (ppb)	250	<1.3	111	79-123
cis-1,3-Dichloropropene	ug/L (ppb)	50	<0.2	116	76-120
Toluene	ug/L (ppb)	50	<0.13	96	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<0.34	105	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<0.28	102	81-111
2-Hexanone	ug/L (ppb)	250	<1	111	75-126
1,3-Dichloropropane	ug/L (ppb)	50	<0.2	100	81-111
Tetrachloroethene	ug/L (ppb)	50	<0.28	97	72-113
Dibromochloromethane	ug/L (ppb)	50	<0.24	113	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<0.24	124 vo	83-114
Chlorobenzene	ug/L (ppb)	50	<0.1	98	75-115
Ethylbenzene	ug/L (ppb)	50	<0.16	98	71-120
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<0.32	128 vo	78-122
m,p-Xylene	ug/L (ppb)	100	<0.5	100	63-128
o-Xylene	ug/L (ppb)	50	<0.22	100	64-129
Styrene	ug/L (ppb)	50	<0.22	101	70-122
Isopropylbenzene	ug/L (ppb)	50	<0.15	101	76-118
Bromoform	ug/L (ppb)	50	<0.22	117	49-138
n-Propylbenzene	ug/L (ppb)	50	<0.14	99	74-117
Bromobenzene	ug/L (ppb)	50	<0.18	98	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<0.18	102	81-112
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<0.24	109	79-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<0.28	101	72-119
2-Chlorotoluene	ug/L (ppb)	50	<0.13	97	77-114
4-Chlorotoluene	ug/L (ppb)	50	<0.16	98	81-109
tert-Butylbenzene	ug/L (ppb)	50	<0.15	101	81-116
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<0.11	101	74-118
sec-Butylbenzene	ug/L (ppb)	50	<0.12	101	77-118
p-Isopropyltoluene	ug/L (ppb)	50	<0.15	101	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<0.15	97	81-111
1,4-Dichlorobenzene	ug/L (ppb)	50	<0.094	97	78-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<0.13	97	81-111
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<0.44	112	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<0.34	94	74-115
Hexachlorobutadiene	ug/L (ppb)	50	<0.46	89	67-120
Naphthalene	ug/L (ppb)	50	<0.28	102	63-136
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<0.38	90	79-115

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	100	104	54-149	4
Chloromethane	ug/L (ppb)	50	97	102	67-133	5
Vinyl chloride	ug/L (ppb)	50	98	103	73-132	5
Bromomethane	ug/L (ppb)	50	604 vo	614 vo	69-123	2
Chloroethane	ug/L (ppb)	50	175 vo	186 vo	68-126	6
Trichlorofluoromethane	ug/L (ppb)	50	123	132	70-132	7
Acetone	ug/L (ppb)	250	102	110	44-145	8
1,1-Dichloroethene	ug/L (ppb)	50	100	106	75-119	6
Methylene chloride	ug/L (ppb)	50	98	104	63-132	6
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	91	98	70-122	7
trans-1,2-Dichloroethene	ug/L (ppb)	50	98	104	76-118	6
1,1-Dichloroethane	ug/L (ppb)	50	96	102	80-116	6
2,2-Dichloropropane	ug/L (ppb)	50	111	125	62-141	12
cis-1,2-Dichloroethene	ug/L (ppb)	50	95	100	81-111	5
Chloroform	ug/L (ppb)	50	118 vo	124 vo	81-109	5
2-Butanone (MEK)	ug/L (ppb)	250	98	101	53-140	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	93	98	79-109	5
1,1,1-Trichloroethane	ug/L (ppb)	50	106	113	80-116	6
1,1-Dichloropropene	ug/L (ppb)	50	94	99	78-112	5
Carbon tetrachloride	ug/L (ppb)	50	128	136 vo	72-128	6
Benzene	ug/L (ppb)	50	93	96	81-108	3
Trichloroethene	ug/L (ppb)	50	94	99	77-108	5
1,2-Dichloropropane	ug/L (ppb)	50	96	101	82-109	5
Bromodichloromethane	ug/L (ppb)	50	116	121 vo	76-120	4
Dibromomethane	ug/L (ppb)	50	100	105	80-110	5
4-Methyl-2-pentanone	ug/L (ppb)	250	104	110	59-142	6
cis-1,3-Dichloropropene	ug/L (ppb)	50	113	120	76-128	6
Toluene	ug/L (ppb)	50	92	96	83-108	4
trans-1,3-Dichloropropene	ug/L (ppb)	50	104	108	76-128	4
1,1,2-Trichloroethane	ug/L (ppb)	50	97	101	82-110	4
2-Hexanone	ug/L (ppb)	250	99	105	53-145	6
1,3-Dichloropropane	ug/L (ppb)	50	94	99	83-110	5
Tetrachloroethene	ug/L (ppb)	50	91	94	78-109	3
Dibromochloromethane	ug/L (ppb)	50	118	123	63-140	4
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	118 vo	124 vo	85-113	5
Chlorobenzene	ug/L (ppb)	50	92	96	84-108	4
Ethylbenzene	ug/L (ppb)	50	93	97	84-110	4
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	128 vo	135 vo	76-125	5
m,p-Xylene	ug/L (ppb)	100	95	99	84-112	4
o-Xylene	ug/L (ppb)	50	94	100	82-113	6
Styrene	ug/L (ppb)	50	96	101	84-116	5
Isopropylbenzene	ug/L (ppb)	50	95	100	81-122	5
Bromoform	ug/L (ppb)	50	127	130	40-161	2
n-Propylbenzene	ug/L (ppb)	50	95	99	81-115	4
Bromobenzene	ug/L (ppb)	50	93	96	80-113	3
1,3,5-Trimethylbenzene	ug/L (ppb)	50	97	102	83-117	5
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	105	110	79-118	5
1,2,3-Trichloropropane	ug/L (ppb)	50	96	100	74-116	4
2-Chlorotoluene	ug/L (ppb)	50	94	97	79-112	3
4-Chlorotoluene	ug/L (ppb)	50	94	98	81-113	4
tert-Butylbenzene	ug/L (ppb)	50	97	101	81-119	4
1,2,4-Trimethylbenzene	ug/L (ppb)	50	96	100	83-116	4
sec-Butylbenzene	ug/L (ppb)	50	97	102	83-116	5
p-Isopropyltoluene	ug/L (ppb)	50	98	102	82-119	4
1,3-Dichlorobenzene	ug/L (ppb)	50	92	97	83-111	5
1,4-Dichlorobenzene	ug/L (ppb)	50	92	95	82-109	3
1,2-Dichlorobenzene	ug/L (ppb)	50	92	96	83-111	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	124	125	62-133	1
1,2,4-Trichlorobenzene	ug/L (ppb)	50	93	95	77-117	2
Hexachlorobutadiene	ug/L (ppb)	50	89	95	74-118	7
Naphthalene	ug/L (ppb)	50	98	102	75-131	4
1,2,3-Trichlorobenzene	ug/L (ppb)	50	91	94	82-115	3

Date of Report: 07/22/13
Date Received: 06/12/13
Project: Crowley/101.00205.00019, F&BI 306182

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D

Laboratory Code: 306183-16 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20
Phenol	mg/kg (ppm)	1.7	<0.0054	82	80	50-150	2
Bis(2-chloroethyl) ether	mg/kg (ppm)	1.7	<0.0019	79	73	50-150	8
2-Chlorophenol	mg/kg (ppm)	1.7	<0.0058	87	84	50-150	4
1,3-Dichlorobenzene	mg/kg (ppm)	1.7	<0.0016	79	73	50-150	8
1,4-Dichlorobenzene	mg/kg (ppm)	1.7	<0.0013	79	74	50-150	7
1,2-Dichlorobenzene	mg/kg (ppm)	1.7	<0.0019	82	75	50-150	9
Benzyl alcohol	mg/kg (ppm)	1.7	0.0037	88	83	50-150	6
Bis(2-chloroisopropyl) ether	mg/kg (ppm)	1.7	<0.0019	74	69	50-150	7
2-Methylphenol	mg/kg (ppm)	1.7	<0.0064	87	85	50-150	2
Hexachloroethane	mg/kg (ppm)	1.7	<0.0014	75	68	50-150	10
N-Nitroso-di-n-propylamine	mg/kg (ppm)	1.7	<0.0013	86	82	50-150	5
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	1.7	<0.012	91	89	50-150	2
Nitrobenzene	mg/kg (ppm)	1.7	<0.0022	86	80	50-150	7
Isophorone	mg/kg (ppm)	1.7	<0.00082	83	86	50-150	4
2-Nitrophenol	mg/kg (ppm)	1.7	<0.0058	94	91	50-150	3
2,4-Dimethylphenol	mg/kg (ppm)	1.7	<0.016	88	87	50-150	1
Benzoic acid	mg/kg (ppm)	2.5	<0.046	122	124	50-150	2
Bis(2-chloroethoxy)methane	mg/kg (ppm)	1.7	<0.00094	85	84	50-150	1
2,4-Dichlorophenol	mg/kg (ppm)	1.7	<0.0052	97	97	50-150	0
1,2,4-Trichlorobenzene	mg/kg (ppm)	1.7	<0.0013	87	86	50-150	1
Hexachlorobutadiene	mg/kg (ppm)	1.7	<0.0014	86	85	50-150	1
4-Chloroaniline	mg/kg (ppm)	3.3	<0.28	12 vo	14 vo	50-150	15
4-Chloro-3-methylphenol	mg/kg (ppm)	1.7	<0.0042	99	99	50-150	0
2-Methylnaphthalene	mg/kg (ppm)	1.7	<0.0014	87	88	50-150	1
Hexachlorocyclopentadiene	mg/kg (ppm)	1.7	<0.0022	53	39 vo	50-150	30 vo
2,4,6-Trichlorophenol	mg/kg (ppm)	1.7	<0.0038	99	97	50-150	2
2,4,5-Trichlorophenol	mg/kg (ppm)	1.7	<0.0078	95	104	50-150	9
2-Chloronaphthalene	mg/kg (ppm)	1.7	<0.0015	89	92	50-150	3
2-Nitroaniline	mg/kg (ppm)	1.7	<0.0022	93	98	50-150	5
Dimethyl phthalate	mg/kg (ppm)	1.7	<0.0011	93	95	50-150	2
2,6-Dinitrotoluene	mg/kg (ppm)	1.7	<0.0011	90	91	50-150	1
3-Nitroaniline	mg/kg (ppm)	3.3	<0.004	31 vo	33 vo	50-150	6
2,4-Dinitrophenol	mg/kg (ppm)	1.7	<0.02	50	8 vo	50-150	145 vo
Dibenzofuran	mg/kg (ppm)	1.7	<0.0013	91	94	50-150	3
2,4-Dinitrotoluene	mg/kg (ppm)	1.7	<0.00066	80	79	50-150	1
4-Nitrophenol	mg/kg (ppm)	1.7	<0.019	93	101	50-150	8
Diethyl phthalate	mg/kg (ppm)	1.7	0.0015	84	93	50-150	10
4-Chlorophenyl phenyl ether	mg/kg (ppm)	1.7	<0.0011	91	94	50-150	3
N-Nitrosodiphenylamine	mg/kg (ppm)	1.7	<0.0013	94	93	50-150	1
4-Nitroaniline	mg/kg (ppm)	3.3	<0.012	31 vo	37 vo	50-150	18
4,6-Dinitro-2-methylphenol	mg/kg (ppm)	1.7	<0.016	56	31 vo	50-150	57 vo
4-Bromophenyl phenyl ether	mg/kg (ppm)	1.7	<0.0014	97	101	50-150	4
Hexachlorobenzene	mg/kg (ppm)	1.7	<0.0012	97	97	50-150	0
Pentachlorophenol	mg/kg (ppm)	1.7	<0.011	106	109	50-150	3
Carbazole	mg/kg (ppm)	1.7	<0.0028	86	88	50-150	2
Di-n-butyl phthalate	mg/kg (ppm)	1.7	<0.002	89	90	50-150	1
Benzyl butyl phthalate	mg/kg (ppm)	1.7	<0.0012 J	15 vo	29 vo	50-150	64 vo
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	1.7	<0.046 J	21 vo	41 vo	50-150	65 vo
Di-n-octyl phthalate	mg/kg (ppm)	1.7	<0.0017	95	106	50-150	11

Date of Report: 07/22/13
Date Received: 06/12/13
Project: Crowley/101.00205.00019, F&BI 306182

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	mg/kg (ppm)	1.7	88	95	51-119	8
Bis(2-chloroethyl) ether	mg/kg (ppm)	1.7	87	84	60-112	4
2-Chlorophenol	mg/kg (ppm)	1.7	91	95	59-114	4
1,3-Dichlorobenzene	mg/kg (ppm)	1.7	86	87	62-113	1
1,4-Dichlorobenzene	mg/kg (ppm)	1.7	87	89	61-114	2
1,2-Dichlorobenzene	mg/kg (ppm)	1.7	88	91	61-113	3
Benzyl alcohol	mg/kg (ppm)	1.7	94	98	50-119	4
Bis(2-chloroisopropyl) ether	mg/kg (ppm)	1.7	81	83	59-113	2
2-Methylphenol	mg/kg (ppm)	1.7	86	95	58-115	10
Hexachloroethane	mg/kg (ppm)	1.7	86	89	63-114	3
N-Nitroso-di-n-propylamine	mg/kg (ppm)	1.7	93	99	62-114	6
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	1.7	88	99	54-120	12
Nitrobenzene	mg/kg (ppm)	1.7	92	92	59-114	0
Isophorone	mg/kg (ppm)	1.7	95	94	61-113	1
2-Nitrophenol	mg/kg (ppm)	1.7	102	104	59-114	2
2,4-Dimethylphenol	mg/kg (ppm)	1.7	74	84	54-107	13
Benzoic acid	mg/kg (ppm)	2.5	125	129	43-150	3
Bis(2-chloroethoxy)methane	mg/kg (ppm)	1.7	90	93	60-114	3
2,4-Dichlorophenol	mg/kg (ppm)	1.7	99	104	57-118	5
1,2,4-Trichlorobenzene	mg/kg (ppm)	1.7	91	92	56-112	1
Hexachlorobutadiene	mg/kg (ppm)	1.7	90	92	60-116	2
4-Chloroaniline	mg/kg (ppm)	3.3	61	62	10-126	2
4-Chloro-3-methylphenol	mg/kg (ppm)	1.7	99	105	59-115	6
2-Methylnaphthalene	mg/kg (ppm)	1.7	88	93	60-115	6
Hexachlorocyclopentadiene	mg/kg (ppm)	1.7	97	95	41-107	2
2,4,6-Trichlorophenol	mg/kg (ppm)	1.7	101	101	47-119	0
2,4,5-Trichlorophenol	mg/kg (ppm)	1.7	102	103	61-121	1
2-Chloronaphthalene	mg/kg (ppm)	1.7	95	96	58-114	1
2-Nitroaniline	mg/kg (ppm)	1.7	102	103	55-119	1
Dimethyl phthalate	mg/kg (ppm)	1.7	99	99	58-116	0
2,6-Dinitrotoluene	mg/kg (ppm)	1.7	108	109	57-119	1
3-Nitroaniline	mg/kg (ppm)	3.3	86	88	10-143	2
2,4-Dinitrophenol	mg/kg (ppm)	1.7	120	106	40-122	12
Dibenzofuran	mg/kg (ppm)	1.7	98	100	56-115	2
2,4-Dinitrotoluene	mg/kg (ppm)	1.7	102	100	53-126	2
4-Nitrophenol	mg/kg (ppm)	1.7	105	102	40-124	3
Diethyl phthalate	mg/kg (ppm)	1.7	100	99	57-116	1
4-Chlorophenyl phenyl ether	mg/kg (ppm)	1.7	97	98	54-119	1
N-Nitrosodiphenylamine	mg/kg (ppm)	1.7	94	97	54-113	3
4-Nitroaniline	mg/kg (ppm)	3.3	96	97	47-109	1
4,6-Dinitro-2-methylphenol	mg/kg (ppm)	1.7	117 vo	107	57-108	9
4-Bromophenyl phenyl ether	mg/kg (ppm)	1.7	99	100	56-116	1
Hexachlorobenzene	mg/kg (ppm)	1.7	100	101	57-115	1
Pentachlorophenol	mg/kg (ppm)	1.7	110	110	45-123	0
Carbazole	mg/kg (ppm)	1.7	97	100	57-116	3
Di-n-butyl phthalate	mg/kg (ppm)	1.7	101	104	56-118	3
Benzyl butyl phthalate	mg/kg (ppm)	1.7	107	109	56-122	2
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	1.7	103	110	56-125	7
Di-n-octyl phthalate	mg/kg (ppm)	1.7	109	111	58-120	2

Date of Report: 07/22/13
Date Received: 06/12/13
Project: Crowley/101.00205.00019, F&BI 306182

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM

Laboratory Code: 306183-10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	<0.00022	65	66	44-129	2
Acenaphthylene	mg/kg (ppm)	0.17	<0.000091	75	80	52-121	6
Acenaphthene	mg/kg (ppm)	0.17	<0.00014	76	80	51-123	5
Fluorene	mg/kg (ppm)	0.17	<0.00015	98	108	37-137	10
Phenanthrene	mg/kg (ppm)	0.17	0.00075	79	87	45-124	10
Anthracene	mg/kg (ppm)	0.17	<0.000088	71	75	32-124	5
Fluoranthene	mg/kg (ppm)	0.17	<0.00028	89	101	50-125	13
Pyrene	mg/kg (ppm)	0.17	<0.00026	92	98	41-135	6
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.00018	75	87	23-144	15
Chrysene	mg/kg (ppm)	0.17	<0.00019	74	79	45-122	7
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.00018	73	80	31-144	9
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.00036	72	72	45-130	0
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.00022	62	68	39-128	9
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.00062	71	79	28-146	11
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.00034	69	77	46-129	11
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	<0.00034	69	71	37-133	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	88	88	58-121	0
Acenaphthylene	mg/kg (ppm)	0.17	94	96	54-121	2
Acenaphthene	mg/kg (ppm)	0.17	93	95	54-123	2
Fluorene	mg/kg (ppm)	0.17	120	120	56-127	0
Phenanthrene	mg/kg (ppm)	0.17	96	97	55-122	1
Anthracene	mg/kg (ppm)	0.17	90	90	50-120	0
Fluoranthene	mg/kg (ppm)	0.17	111	108	54-129	3
Pyrene	mg/kg (ppm)	0.17	110	111	53-127	1
Benz(a)anthracene	mg/kg (ppm)	0.17	99	102	51-115	3
Chrysene	mg/kg (ppm)	0.17	91	93	55-129	2
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	96	97	56-123	1
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	84	86	54-131	2
Benzo(a)pyrene	mg/kg (ppm)	0.17	80	78	51-118	3
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	97	97	49-148	0
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	93	93	50-141	0
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	87	87	52-131	0

Date of Report: 07/22/13
Date Received: 06/12/13
Project: Crowley/101.00205.00019, F&BI 306182

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 306183-08 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.8	<0.033	83	83	50-150	0
Aroclor 1260	mg/kg (ppm)	0.8	<0.033	87	89	50-150	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.8	81	70-130
Aroclor 1260	mg/kg (ppm	0.8	89	70-130

Date of Report: 07/22/13
Date Received: 06/12/13
Project: Crowley/101.00205.00019, F&BI 306182

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 306183-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	mg/kg (ppm)	5	0.141	101	103	67-138	2
Chromium	mg/kg (ppm)	50	12.4	84 b	86 b	57-128	2 b
Nickel	mg/kg (ppm)	25	24.0	77 b	81 b	69-112	5 b
Copper	mg/kg (ppm)	50	9.32	82	85	57-120	4
Zinc	mg/kg (ppm)	50	25.0	71 b	76 b	55-129	7 b
Arsenic	mg/kg (ppm)	10	1.97	90	97	70-118	7
Selenium	mg/kg (ppm)	5	<0.911	85	87	64-117	2
Silver	mg/kg (ppm)	10	<0.0785	96	98	73-122	2
Cadmium	mg/kg (ppm)	10	<0.203	99	100	83-116	1
Antimony	mg/kg (ppm)	20	0.200	94	96	54-116	2
Barium	mg/kg (ppm)	50	35.0	91 b	93 b	60-141	2 b
Thallium	mg/kg (ppm)	5	0.050	97	102	68-121	5
Lead	mg/kg (ppm)	50	3.20	99	101	59-148	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	mg/kg (ppm)	5	110	69-146
Chromium	mg/kg (ppm)	50	98	78-121
Nickel	mg/kg (ppm)	25	98	82-122
Copper	mg/kg (ppm)	50	97	82-119
Zinc	mg/kg (ppm)	50	96	81-120
Arsenic	mg/kg (ppm)	10	94	83-113
Selenium	mg/kg (ppm)	5	94	84-115
Silver	mg/kg (ppm)	10	98	81-116
Cadmium	mg/kg (ppm)	10	99	54-114
Antimony	mg/kg (ppm)	20	97	69-114
Barium	mg/kg (ppm)	50	100	85-116
Thallium	mg/kg (ppm)	5	102	77-123
Lead	mg/kg (ppm)	50	102	80-120

Date of Report: 07/22/13
Date Received: 06/12/13
Project: Crowley/101.00205.00019, F&BI 306182

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SOLID SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 306183-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	0.125	0.012	93	97	62-140	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	0.125	90	63-131

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

July 3, 2013

Michele Costales Poquiz
Friedman & Bruya
3012 16th Ave W
Seattle, WA 98119

RE: Project: 306182
ARI Job No.: WT94

Dear Michele:

Please find enclosed the Chain-of-Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted eight solid samples on June 13, 2013, under ARI job WT94. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for TOC, as requested on the COC.

There were no anomalies associated with the analysis of these samples.

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

Respectfully,
ANALYTICAL RESOURCES, INC.

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

cc: eFile WT94

Enclosures

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

SAMPLE CHAIN OF CUSTODY

Send Report To Michele Costales Poquiz

Company Friedman & Bruya, Inc.

Address 3012 16th Ave. W.

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

Email Address mpoquiz@friedmanandbruya.com

SUBCONTRACTOR
Analytical Resources, Inc. (ARI)

PROJECT NAME/NO.	PO #
306182	C-423

REMARKS

Please e-mail results

ELECTRONIC DATA REQUESTED (EIM)

TURNAROUND TIME
- [x] Standard Turnaround
- [ ] RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Dispose after 30 days
- [ ] Return samples
- [ ] Will call with instructions

Samples Received at ____ °C

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	Hexavalent Cr by 7196A	Total Organic Carbon by 9060				Notes
						ANALYSES REQUESTED										
DP4CB4-061013		6/10/13	1430	Solids	1							X				
DP6CB4-061013		"	1615	"	"							X				
DP1CB3-061013		"	1725	"	"							X				
DP1CB2-061113		6/11/13	1030	"	"							X				
DP2CB2-061113		"	1130	"	"							X				
DP4CB2-061113		"	1330	"	"							X				
DP5CB1-061113		"	1435	"	"							X				
DP5CB4-061113		"	1535	"	"							X				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michele Costales Poquiz	Michele Costales Poquiz	F&B1	6/12/13	4:22 PM
Received by:		A. Volgardsen	ARI	6/13/13	1237
Relinquished by:					
Received by:					

FORMS\COC\COC SLRC.DOC

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Friedman & Bruya
Project Name:
COC No(s): (NA)
Delivered by: Fed-Ex UPS (Courier) Hand Delivered Other: Postal Express
Assigned ARI Job No: WTGH
Tracking No: (NA)

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc)	(YES)	NO
Temperature of Cooler(s) (°C) (recommended 2 0-6 0 °C for chemistry)	4.6	

If cooler temperature is out of compliance fill out form 00070F — Temp Gun ID#: 90877952

Cooler Accepted by: AV Date: 6/13/13 Time: 1237

Complete custody forms and attach all shipping documents

Log-In Phase:

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

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

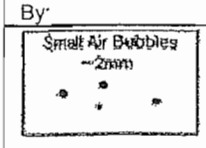
Samples Logged by: IS Date: 6.13.13 Time: 1350

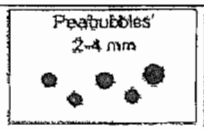
*** Notify Project Manager of discrepancies or concerns ***

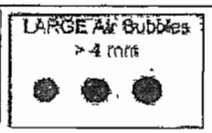
Sample ID on Bottle	Sample ID on COC	Sample ID on Bottle	Sample ID on COC

Additional Notes, Discrepancies, & Resolutions:

By: Date:







Small → "sm"	
Peabubbles → "pb"	
Large → "lg"	
Headspace → "hs"	

WTGH : 00003

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WT94
Client: Friedman and Bruya, Inc
Project Event: 306182
Project Name: N/A

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	DP4CB4-061013	WT94A	13-12730	Solid	06/10/13 14:30	06/13/13 12:37
2.	DP6CB4-061013	WT94B	13-12731	Solid	06/10/13 16:15	06/13/13 12:37
3.	DP1CB3-061013	WT94C	13-12732	Solid	06/10/13 17:25	06/13/13 12:37
4.	DP1CB2-061113	WT94D	13-12733	Solid	06/11/13 10:30	06/13/13 12:37
5.	DP2CB2-061113	WT94E	13-12734	Solid	06/11/13 11:30	06/13/13 12:37
6.	DP4CB2-061113	WT94F	13-12735	Solid	06/11/13 13:30	06/13/13 12:37
7.	DP5CB1-061113	WT94G	13-12736	Solid	06/11/13 14:35	06/13/13 12:37
8.	DP5CB4-061113	WT94H	13-12737	Solid	06/11/13 15:35	06/13/13 12:37

WT94 : 00004

SAMPLE RESULTS-CONVENTIONALS
WT94-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized:
Reported: 07/03/13

Project: NA
Event: 306182
Date Sampled: 06/10/13
Date Received: 06/13/13

Client ID: DP4CB4-061013
ARI ID: 13-12730 WT94A

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/17/13 061713#1	SM2540B	Percent	0.01	29.25
Total Organic Carbon	07/03/13 070313#1	EPA 9060M	Percent	0.200	10.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WT94-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized:
Reported: 07/03/13

Project: NA
Event: 306182
Date Sampled: 06/10/13
Date Received: 06/13/13

Client ID: DP6CB4-061013
ARI ID: 13-12731 WT94B

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/17/13 061713#1	SM2540B	Percent	0.01	43.09
Total Organic Carbon	07/03/13 070313#1	EPA 9060M	Percent	0.020	5.29

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WT94-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized:
Reported: 07/03/13

Project: NA
Event: 306182
Date Sampled: 06/10/13
Date Received: 06/13/13

Client ID: DP1CB3-061013
ARI ID: 13-12732 WT94C

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/17/13 061713#1	SM2540B	Percent	0.01	44.39
Total Organic Carbon	07/03/13 070313#1	EPA 9060M	Percent	0.200	19.1

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WT94-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized:
Reported: 07/03/13

Project: NA
Event: 306182
Date Sampled: 06/11/13
Date Received: 06/13/13

Client ID: DP1CB2-061113
ARI ID: 13-12733 WT94D

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/17/13 061713#1	SM2540B	Percent	0.01	65.54
Total Organic Carbon	07/03/13 070313#1	EPA 9060M	Percent	0.198	19.9

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WT94-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized: DMB
Reported: 07/03/13

Project: NA
Event: 306182
Date Sampled: 06/11/13
Date Received: 06/13/13

Client ID: DP2CB2-061113
ARI ID: 13-12734 WT94E

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/17/13 061713#1	SM2540B	Percent	0.01	61.87
Total Organic Carbon	07/03/13 070313#1	EPA 9060M	Percent	0.020	6.24

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WT94-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized: NR
Reported: 07/03/13

Project: NA
Event: 306182
Date Sampled: 06/11/13
Date Received: 06/13/13

Client ID: DP4CB2-061113
ARI ID: 13-12735 WT94F

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/17/13 061713#1	SM2540B	Percent	0.01	46.51
Total Organic Carbon	07/03/13 070313#1	EPA 9060M	Percent	0.020	12.0

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WT94-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized: DR
Reported: 07/03/13

Project: NA
Event: 306182
Date Sampled: 06/11/13
Date Received: 06/13/13

Client ID: DP5CB1-061113
ARI ID: 13-12736 WT94G

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/17/13 061713#1	SM2540B	Percent	0.01	50.38
Total Organic Carbon	07/03/13 070313#1	EPA 9060M	Percent	0.020	10.8

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WT94-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized: MB
Reported: 07/03/13

Project: NA
Event: 306182
Date Sampled: 06/11/13
Date Received: 06/13/13

Client ID: DP5CB4-061113
ARI ID: 13-12737 WT94H

Analyte	Date	Method	Units	RL	Sample
Total Solids	06/17/13 061713#1	SM2540B	Percent	0.01	60.92
Total Organic Carbon	07/03/13 070313#1	EPA 9060M	Percent	0.020	8.61

RL Analytical reporting limit
U Undetected at reported detection limit

LAB CONTROL RESULTS-CONVENTIONALS
WT94-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized: JB
Reported: 07/03/13

Project: NA
Event: 306182
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Total Organic Carbon EPA 9060M	ICVL	07/03/13	Percent	0.098	0.100	98.0%

METHOD BLANK RESULTS-CONVENTIONALS
WT94-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized:
Reported: 07/03/13

Project: NA
Event: 306182
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Total Solids	06/17/13	Percent	< 0.01 U	ICB
Total Organic Carbon	07/03/13	Percent	< 0.020 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
WT94-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Solid
Data Release Authorized: JWB
Reported: 07/03/13

Project: NA
Event: 306182
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST 1941B	07/03/13	Percent	2.51	2.99	83.9%

Budinger & Associates

Geotechnical Engineering
Environmental Engineering
Construction Materials Testing
Subsurface Exploration
Special Inspection

Proudly serving the Inland Northwest for over 30 years

Michele Costales Poquiz
Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119

July 1, 2013

Project Number L13300

PROJECT: 3061812 Soils
Seattle, WA

SUBJECT: Results of Laboratory Testing
Report # 1

At your request, we provided laboratory testing services for the subject project. Services were limited to the performance of specific laboratory tests, selected at your discretion.

For this period our involvement was limited to laboratory testing of eight samples delivered to us on June 17, 2013. Laboratory tests were performed in general accordance with methods listed on the attached *Laboratory Summary* and *Particle Size Distribution* sheets.

If you have any questions, please call.

Respectfully Submitted,
BUDINGER & ASSOCIATES, INC.

Kyle L. Sanford
Mgr. Construction Services

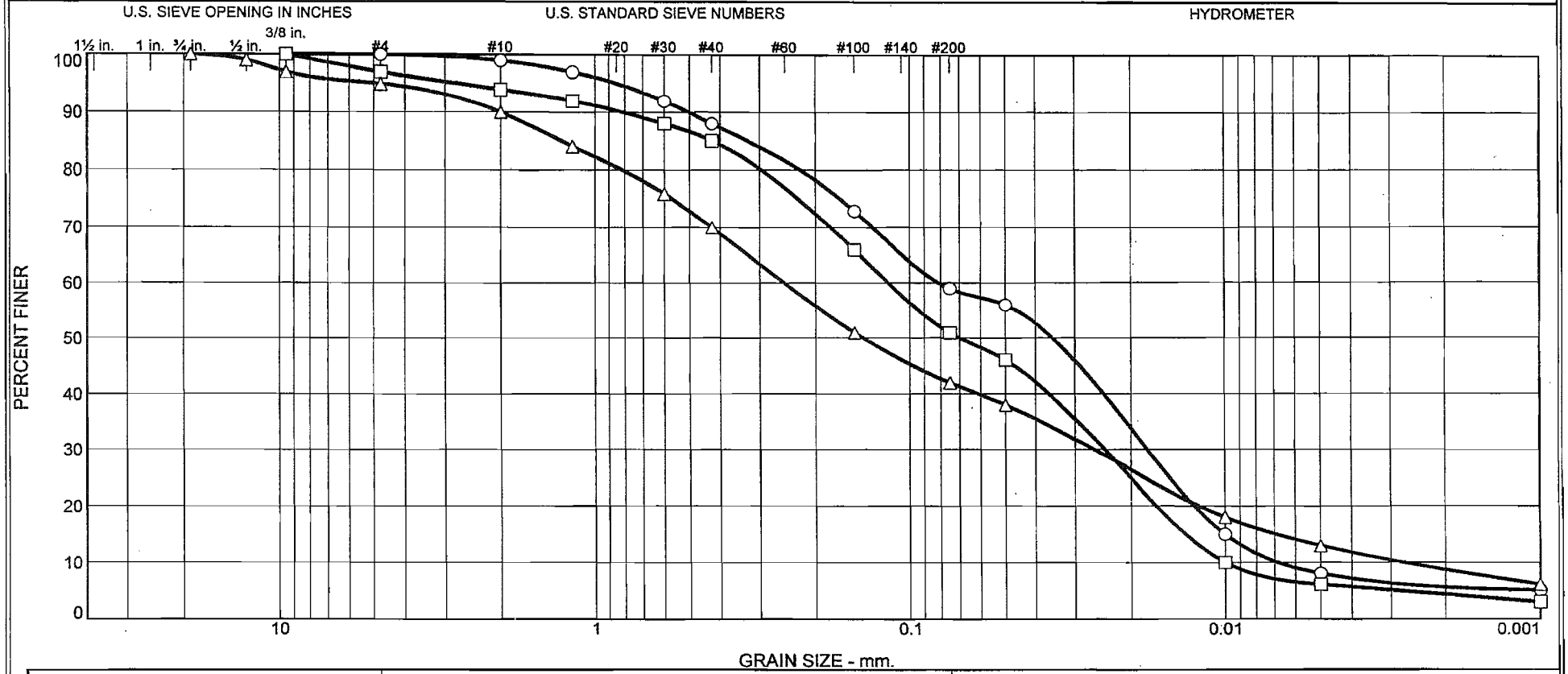
KLS/kh
Addressee – 2
Attachments:
- Soil - Laboratory Summary (1 page)
- Particle Size Distribution Report (3 pages)

1101 North Fancher Road
Spokane Valley, WA 99212
Tel: 509-535-8841
Fax:509-535-9589

SOILS
LABORATORY SUMMARY

LABORATORY NUMBER			13-0464	13-0465	13-0466	13-0467	13-0468	13-0469	13-0470	13-0471
SAMPLE NUMBER			1	2	3	4	5	6	7	8
SAMPLED BY			Client	Client	Client	Client	Client	Client	Client	Client
SAMPLE TYPE			Bulk	Bulk	Bulk	Bulk	Bulk	Bulk	Bulk	Bulk
DATE RECEIVED			6/17/13	6/17/13	6/17/13	6/17/13	6/17/13	6/17/13	6/17/13	6/17/13
SAMPLE LOCATION			DP4CB4 -061013	DP6CB4 -061013	DP1CB3 -061013	DP1CB2 -061113	DP2CB2 -061113	DP4CB2 -061113	DP5CB1 -061113	DP5CB4 -061113
		Units	Test Method								
SIEVE ANALYSIS			ASTM D-422								
	3/4"					100		100	100		
S	1/2"	%				99	100	99	97	100	
I	3/8"			100	100	97	99	97	96	93	100
E	#4	P		100-	97	95	94	88	92	76	94
V	#10	A		99	94	90	90	78	84	63	88
E	#16	S		97	92	84	81	71	75	55	82
	#30	S		92	88	76	69	62	67	48	73
S	#40	I		88	85	70	61	56	62	44	68
I	#100	N		73	66	51	39	36	46	30	52
Z	#200	G		59	51	42	31	24	37	25	43
E	.05mm			56	46	38	29	20	30	20	40
	.01mm			15	10	18	13	8	12	12	17
	.005mm			8	6	13	8	5	9	7	8
	.001mm			5	3	6	5	2	4	5	4

Particle Size Distribution Report



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	1	11	29	51	8
□	0	3	3	9	34	45	6
△	0	5	5	20	28	29	13

	Identification	Date Sampled	Date Received	Date Tested
○	Sample Number: 1 (13-0464)	6/10/13	6/17/13	6/24/13
□	Sample Number: 2 (13-0465)	6/10/13	6/17/13	6/24/13
△	Sample Number: 3 (13-0466)	6/10/13	6/17/13	6/24/13

Client Friedman & Bruya, Inc.

Project 306182 Soils

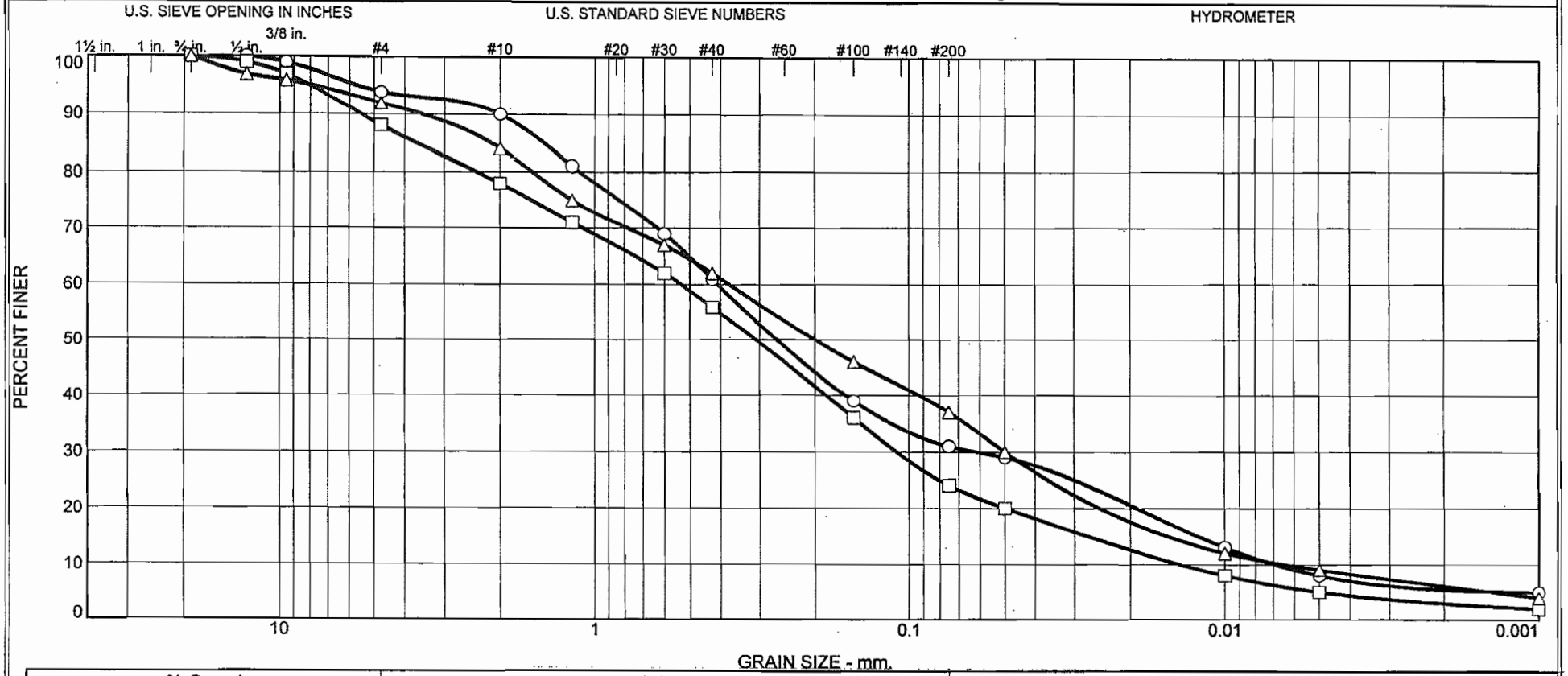
Project No. L13300 Date 6/29/13

BUDINGER & ASSOCIATES, INC.

○ Sampled by Client from DP4CB4
□ Sampled by Client from DP6CB4
△ Sampled by Client from DP1CB3

Tested By: JS **Checked By:** TB

Particle Size Distribution Report



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	6	4	29	30	23	8
□	0	12	10	22	32	19	5
△	0	8	8	22	25	28	9

	Identification	Date Sampled	Date Received	Date Tested
○	Sample Number: 4 (13-0467)	6/11/13	6/17/13	6/24/13
□	Sample Number: 5 (13-0468)	6/11/13	6/17/13	6/26/13
△	Sample Number: 6 (13-0469)	6/11/13	6/17/13	6/26/13

Client Friedman & Bruya, Inc.

Project 306182 Soils

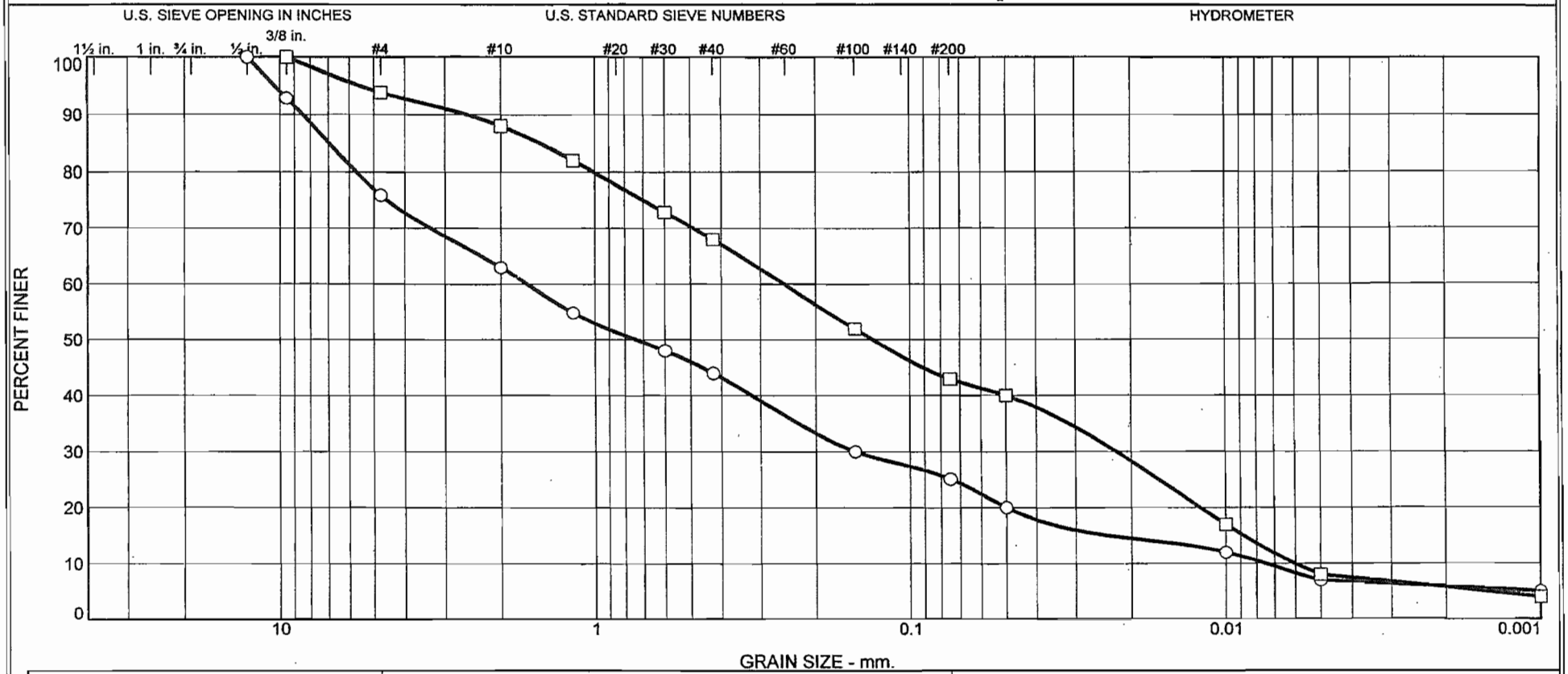
Project No. L13300 Date 6/29/13

BUDINGER & ASSOCIATES, INC.

○ Sampled by Client from DP1CB2
□ Sampled by Client from DP2 CB2
△ Sampled by Client from DP4CB2

Tested By: JS **Checked By:** TB

Particle Size Distribution Report



	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	24	13	19	19	18	7
□	0	6	6	20	25	35	8

	Identification	Date Sampled	Date Received	Date Tested
○	Sample Number: 7 (13-0470)	6/11/13	6/17/13	6/26/13
□	Sample Number: 8 (13-0471)	6/11/13	6/17/13	6/26/13

Client Friedman & Bruya, Inc.

Project 306182 Soils

Project No. L13300 Date 6/29/13

BUDINGER & ASSOCIATES, INC.

○ Sampled by Client from DP5CB1
□ Sampled by Client from DP5CB4

Tested By: JS **Checked By:** TB

306182

SAMPLE CHAIN OF CUSTODY

~~KE~~ KJ 06-12-13 BI4/VI/VS4

Page # 1 of 1

Send Report To MIKE STATON

Company SLR CONSULTING

Address 22118 20TH AVE SE, STE. G207

City, State, ZIP BOTHELL, WA 98021

Phone # 425-402-8800 Fax #

SAMPLERS (signature)

PROJECT NAME/NO. EDMONDS/101 00205.00019

PO#

REMARKS
P = HELD

TURNAROUND TIME
☑ Standard (2 Weeks)
☐ RUSH
Rush charges authorized by

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

x Updated per mike station e-mail 6/17/13

Lab ID	Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	HFS	Metals (Pb only) 200.8	Hg 1631E	PAHs 8270D SIM	PCBs 8082A	TOC Plumb	Grain Size ASTM D 422	Notes
01 A-N	DP4CB4-060613	1	6/6/13	1430	soil	14	X	X		X	X		✓	X	X	X	X	X	
02	DP6CB4-060613	2		1615			X	X		X	X		X	X	X	X	X	X	
03	DP1CB3-060613	3		1725			X	X		X	X		X	X	X	X	X	X	
04 A-B	TRIPBLANK-060613	4		1745	H2O	2				X H									
05A-N	DP1CB2-061113	4	6/11/13	1030	soil	14	X	X		X	X		X	X	X	✓	X	X	
06A-N	DP2CB2-061113	5		1130			✓	X		X	✓		✓	X	X	✓	X	X	
07	DP4CB2-061113	6		1330			X	X		X	✓		X	X	X	X	X	X	
08	DP5CB1-061113	7		1435			X	X		X	X		X	X	X	X	X	X	
09	DP5CB4-061113	8		1535			X	X		X	X		X	✓	X	X	X	X	
							X	X		X	X		X	X	X	X	X	X	Samples received at 3 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	GREG LIGH	SLR	6/11/13	16:45
Received by:	Amanda Mengarini	SLR	6/11/13	1645
Relinquished by:	Amanda Mengarini	SLR	6/12/13	0925
Received by:			6/12/13	925

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

SGS ANALYTICAL PERSPECTIVES

17 July 2013

Mike Staton
SLR Consulting
22118 20th Ave SE
Suite G202
Bothell, WA 98021

Ph.: 425-402-8800
Email: mstaton@slrconsulting.com

Subject: Certificate of Results - Amended

Dear Mike;

Attached to this narrative are the analytical results you requested on the samples submitted for the determination of polychlorinated dibenzo-*p*-dioxins and dibenzofurans. The insert below summarizes the relevant information pertaining to your project. In particular, QC annotations bring to your attention specific analytical observations and assessments made during the sample handling and data interpretation phases. Results reported relate only to the items tested.

Project Information Summary	When applicable, see QC Annotations for details
Client Project No.	101.00205.00019 Crowley
AP Project #	**A5633**
Analytical Protocol	Method 8290
No. Samples Submitted	2
No. Samples Analyzed	2
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
No. Outstanding Samples	0
Date Received	18-Jun-2013
Condition Received	good
Temperature upon Receipt (C)	1
Extraction within Holding Time	yes
Analysis within Holding Time	yes
Data meet QA/QC Requirements	yes
Exceptions	none
Analytical Difficulties	none

ANALYTICAL PERSPECTIVES IS NOW PART OF SGS, THE WORLD'S LEADING INSPECTION, VERIFICATION, TESTING AND CERTIFICATION COMPANY.

QC Annotations:

1. Please see Appendix A & B attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.
2. The project has been amended so that the results are reported in pg/kg rather than pg/g.

Analytical Perspectives Certification IDs:

SOUTH CAROLINA	99054
ARKANSAS	88-0628
NEW JERSEY-NELAP SECONDARY	NC005
FLORIDA-NELAP PRIMARY	E87608
LOUISIANA	4024
NORTH CAROLINA	37783
WASHINGTON	C2027
NEW YORK	11988
VIRGINIA	460180
MINNESOTA	037-999-448
OREGON	pending
TEXAS	T104704484-10-1
PENNSYLVANIA-NELAP SECONDARY	68-01849

SGS Analytical Perspectives remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, please do not hesitate to contact us.

The management and staff of SGS Analytical Perspectives welcomes customer feedback, both positive and negative, as we continually improve our services. Please visit our web site at www.ultratrace.com and click on the 'Leave Your Feedback Here!' link on the Home Page. Thank you for choosing SGS Analytical Perspectives.

Sincerely,

Heather Distel

Heather Distel, Ph.D.
Senior Project Scientist/Team Lead

APPENDIX A: DATA QUALIFIERS / DATA ATTRIBUTES	
>	Indicates high recoveries. Shown with the numeric value at the top of the range.[1]
B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve).
EMPC	Represents an Estimated Maximum Possible Concentration. EMPC's arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
ETH	Indicates the presence of a diphenyl ether that appears to interfere with the quantitation of a furan. The reported concentration is the maximum.
H/h	If the standard recovery is below the method or SOP specified value "H" is assigned. If the obtained value is less than half the specified value "h" is assigned.[1]
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve).
ND	Indicates a non-detect.
NR	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes "Single Ion Mode" and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.[1]
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.
X	Indicates results reported from reinjection, refractionation, or repeat analyses.
APPENDIX B: LAB ID IDENTIFIERS	
AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

[1]Denotes data qualifiers/attributes whose use will be phased out over time

Sample ID: Method Blank A5633

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5633	Date Received:	n/a
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	MB1_11062_DF_SDS-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	n/a	% Solids:	100.0 %	QC Batch No:	11062	Date Analyzed:	09-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	17:40:35

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	60.4			ES 2378-TCDD	98.5	
12378-PeCDD	ND	69.6			ES 12378-PeCDD	90.7	
123478-HxCDD	ND	63.9			ES 123478-HxCDD	98.5	
123678-HxCDD	ND	72.9			ES 123678-HxCDD	98.9	
123789-HxCDD	ND	69.1			ES 123789-HxCDD	101	
1234678-HpCDD	ND	81.5			ES 1234678-HpCDD	91.7	
OCDD	316			J	ES OCDD	80.1	
2378-TCDF	ND	46.2			ES 2378-TCDF	95.7	
12378-PeCDF	ND	49.8			ES 12378-PeCDF	74	
23478-PeCDF	ND	44			ES 23478-PeCDF	74.5	
123478-HxCDF	ND	41.4			ES 123478-HxCDF	90.2	
123678-HxCDF	ND	43.5			ES 123678-HxCDF	83.8	
234678-HxCDF	ND	39.2			ES 234678-HxCDF	94.5	
123789-HxCDF	ND	55.4			ES 123789-HxCDF	99.8	
1234678-HpCDF	ND	47.5			ES 1234678-HpCDF	90.6	
1234789-HpCDF	ND	71			ES 1234789-HpCDF	89.5	
OCDF	ND	147			ES OCDF	84.3	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	101	
Total TCDD	ND	60.4	ND		CS 12347-PeCDD	91.2	
Total PeCDD	ND	69.6	ND		CS 12346-PeCDF	73.3	
Total HxCDD	ND	68.4	ND		CS 123469-HxCDF	100	
Total HpCDD	124		124		CS 1234689-HpCDF	92.6	
					AS 1368-TCDD	104	
Total TCDF	ND	46.2	ND		AS 1368-TCDF	95.8	
Total PeCDF	ND	46.9	ND				
Total HxCDF	ND	44.7	ND				
Total HpCDF	ND	58.1	ND				
Total PCDD/Fs	**441**		**441**				
WHO-2005 TEQs							
TEQ: ND=0	0.0949		0.0949				
TEQ: ND=DL/2	95.1	95	95.1				
TEQ: ND=DL	190	190	190				

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Wilmington, NC 28405 , USA
www.us.sgs.com
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Sample ID: DP6CB1-060613

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5633	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5633_11062_DF_001-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	06-Jun-2013	% Solids:	65.1 %	QC Batch No:	11062	Date Analyzed:	09-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	18:33:55

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	34500				ES 2378-TCDD	88.2	
12378-PeCDD	76800				ES 12378-PeCDD	87	
123478-HxCDD	78400				ES 123478-HxCDD	76.3	
123678-HxCDD	206000				ES 123678-HxCDD	49.5	
123789-HxCDD	237000				ES 123789-HxCDD	45.7	
1234678-HpCDD	5890000			E	ES 1234678-HpCDD	68.6	
OCDD	28700000			E	ES OCDD	64.9	
2378-TCDF	2640				ES 2378-TCDF	93.5	
12378-PeCDF	2500				ES 12378-PeCDF	90.3	
23478-PeCDF	5230				ES 23478-PeCDF	88.3	
123478-HxCDF	6250				ES 123478-HxCDF	67.3	
123678-HxCDF	7410				ES 123678-HxCDF	59.1	
234678-HxCDF	11200				ES 234678-HxCDF	60.7	
123789-HxCDF	ND	84.4			ES 123789-HxCDF	57.8	
1234678-HpCDF	91200				ES 1234678-HpCDF	63	
1234789-HpCDF	6780				ES 1234789-HpCDF	70.8	
OCDF	128000				ES OCDF	67.2	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	90.2	
Total TCDD	115000		117000		CS 12347-PeCDD	92.3	
Total PeCDD	351000		351000		CS 12346-PeCDF	66.5	
Total HxCDD	2390000		2390000		CS 123469-HxCDF	65.7	
Total HpCDD	10700000		10700000		CS 1234689-HpCDF	68.9	
					AS 1368-TCDD	104	
Total TCDF	45700		46500		AS 1368-TCDF	99.5	
Total PeCDF	81900		82200				
Total HxCDF	198000		199000				
Total HpCDF	241000		241000				
Total PCDD/Fs	**42900000**		**42900000**				
WHO-2005 TEQs							
TEQ: ND=0	236000		236000				
TEQ: ND=DL/2	236000	169	236000				
TEQ: ND=DL	236000	338	236000				

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Sample ID: DP4CB4-061013

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5633	Date Received:	18-Jun-2013
Project ID:	101.00205.00019 Crowley	Weight/Volume:	0.0081 Kg	Lab Sample ID	A5633_11062_DF_002-RJ2	Date Extracted:	21-Jun-2013
Date Collected:	10-Jun-2013	% Solids:	27.1 %	QC Batch No:	11062	Date Analyzed:	09-Jul-2013
		Split:	-	Dilution:	-	Time Analyzed:	19:27:15

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	3420				ES 2378-TCDD	94	
12378-PeCDD	15100				ES 12378-PeCDD	62.1	
123478-HxCDD	24800				ES 123478-HxCDD	87	
123678-HxCDD	51100				ES 123678-HxCDD	61.9	
123789-HxCDD	44100				ES 123789-HxCDD	63.4	
1234678-HpCDD	1200000				ES 1234678-HpCDD	82.3	
OCDD	8800000				ES OCDD	73.9	
2378-TCDF	8290				ES 2378-TCDF	98	
12378-PeCDF	5780				ES 12378-PeCDF	85.4	
23478-PeCDF	13000				ES 23478-PeCDF	81.2	
123478-HxCDF	14100				ES 123478-HxCDF	91.9	
123678-HxCDF	14500				ES 123678-HxCDF	61.4	
234678-HxCDF	20800				ES 234678-HxCDF	74.3	
123789-HxCDF	1950			J	ES 123789-HxCDF	71	
1234678-HpCDF	212000				ES 1234678-HpCDF	78.8	
1234789-HpCDF	12400				ES 1234789-HpCDF	90	
OCDF	437000				ES OCDF	75.2	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	99.2	
Total TCDD	46000		52700		CS 12347-PeCDD	82.2	
Total PeCDD	149000		149000		CS 12346-PeCDF	67.4	
Total HxCDD	550000		550000		CS 123469-HxCDF	81.8	
Total HpCDD	2630000		2630000		CS 1234689-HpCDF	86.2	
					AS 1368-TCDD	109	
Total TCDF	170000		172000		AS 1368-TCDF	110	
Total PeCDF	219000		219000				
Total HxCDF	362000		362000				
Total HpCDF	520000		520000				
Total PCDD/Fs	**13900000**		**13900000**				
WHO-2005 TEQs							
TEQ: ND=0	57700		57700				
TEQ: ND=DL/2	57700	658	57700				
TEQ: ND=DL	57700	1320	57700				

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AS633

ANALYTICAL PERSPECTIVES

CHAIN-OF-CUSTODY RECORD

PROJECT ID: 101.002.05.0019 CROWLEY | P.O. No.: 101.002.05.0019 | SAMPLER: GREG LIGHT (PRINTED NAME) (SIGNATURE)

RELINQUISHED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:	RECEIVED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:
GREG LIGHT	6/17/13	14:45	Barbara Hager / Barbara Hager	18-June-13	1113
RELINQUISHED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:	RECEIVED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:

PLEASE SEE NOTES ON THE BACK OF THE COC REGARDING THE SAMPLE ACCEPTANCE POLICY AND THE METHOD 8290 MS/MSD & DUP

REQUESTED TAT: 21 DAYS

SHIP TO: ANALYTICAL PERSPECTIVES, 2714 EXCHANGE DRIVE, WILMINGTON, NC 28405, PH.: 910-794-1613

METHOD OF SHIPMENT: FED EX

SHIPMENT ID:

ATTN: YVES TONDEUR

QAPP REFERENCE: _____
SAMPLE ACCEPTANCE POLICY (ON BACK SIDE)

SAMPLE ID	DATE	TIME	SAMPLE DESCRIPTION	MS/MSD	DUP	METHOD 8290	METHOD 1613	METHOD 1668A	METHOD 1668 B	METHOD 1668 C	PAHs BY HRMS	QUANTIC	U-SVOA	WHO-2/WHO-2S	CONTAINER(S) QTY	CONTAINER(S) TYPE	MATRIX
DP6CB1-060613	6/6/13	1645	SEDIMENT/SOLIDS			X									1	4 OZ.	SED/SOLIDS
DP4CB4-061013	6/10/13	1430	"			X									"	"	"

SPECIAL INSTRUCTIONS/COMMENTS: (PLEASE CIRCLE OPTION BELOW)

"DF ONLY" "DF & PCB" "DF & PAH" "DF & PCB & PAH

"TRI – OCTA" "2,3,7,8-TCDD & F ONLY" "2,3,7,8-TCDD ONLY"

PLEASE SPECIFY TEFs: (PLEASE CHECK BOXES BELOW)

☐ "ITEFS" ☐ "WHO-98" ☒ "WHO-05" ☐ "MA-TEFS" ☐ "CT-TEFS"

SEND DOCUMENTATION & RESULTS TO:

NAME: MIKE STATON
COMPANY: SLR CONSULTING
ADDRESS: 22118 20TH AVE SE, SUITE G202
CITY: BOTHELL
STATE: WA ZIP: 98021
PH.: 425-402-8800
E-MAIL: mstaton@slrconsulting.com

BILL TO: (☑ CHECK IF SAME)

NAME: _____
COMPANY: _____
ADDRESS: _____
CITY: _____
STATE: ___ ZIP: _____
PH.: _____

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 6, 2013

Mike Staton
SLR International Corp.
22118 20th Ave. SE., G-202
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on June 27, 2013 from the Crowley 101.00205.00030, F&BI 306444 project. There are 53 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michele Costales Poquiz

Michele Costales Poquiz
Chemist

Enclosures
SLR0806R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on June 27, 2013 by Friedman & Bruya, Inc. from the SLR International Corp. Crowley 101.00205.00030, F&BI 306444 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
306444-01	OF-1-062613
306444-02	OF-2-062613
306444-03	OF-4-062613
306444-04	OF-6-062613
306444-05	OF-3-062613
306444-06	OF-5-062613

Total Petroleum Hydrocarbons as Gasoline by Method NWTPH-Gx

All quality control requirements were acceptable.

Total Petroleum Hydrocarbons as Diesel and Motor Oil by Method NWTPH-Dx with Silica Gel

All quality control requirements were acceptable.

Volatile Compounds by EPA Method 8260C

The percent recovery for the matrix spike (MS), laboratory control sample (LCS), and laboratory control sample duplicate (LCSD) exceeded acceptance criteria for bromomethane and chloroethane. These compounds were not found in the samples, therefore the results are valid.

The presence of acetone in the sample OF-5-062613 is likely due to laboratory contamination. The result has been flagged accordingly.

Semivolatile Organic Compounds by EPA Method 8270D

The internal standard associated with benzyl butyl phthalate and the surrogate terphenyl-d14 exceeded acceptance criteria for the sample OF-1-062613. The results have been flagged accordingly.

The presence of diethyl phthalate and bis(2-ethylhexyl) phthalate in the samples and method blank is likely due to laboratory contamination. The results have been flagged accordingly.

The calibration result for di-n-octyl phthalate fell outside of acceptance criteria for the sample OF-2-062613, OF-6-062613, and OF-3-062613. The values reported are estimates.

The percent recovery for the LCS and LCSD as well as the RPD for the LCS/LCSD exceeded acceptance criteria for several compounds. The results have been flagged accordingly.

Semivolatile Organic Compounds by EPA Method 8270D SIM
The samples were extracted outside of the EPA recommended holding time. The results have been flagged accordingly.

A surrogate recovery fell outside of acceptance criteria for the sample OF-3-062613. The results have been flagged accordingly.

Polychlorinated Biphenyls as Aroclor 1016/1260 by EPA Method 8082A
All quality control requirements were acceptable.

Total Metals by EPA Method 200.8
All quality control requirements were acceptable.

Total Mercury by EPA Method 1631E
All quality control requirements were acceptable.

Total Suspended Solids by Method 2540C
All quality control requirements were acceptable.

Total Organic Carbon by EPA Method 9060M
The report generated by Analytical Resouces, Inc. is enclosed.

Chloride by Method SM4500
The report generated by Analytical Resouces, Inc. is enclosed.

Date of Report: 08/06/13
Date Received: 06/27/13
Project: Crowley 101.00205.00030, F&BI 306444
Date Extracted: 07/02/13
Date Analyzed: 07/02/13

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
OF-1-062613 306444-01	<12	74
OF-2-062613 306444-02	<12	76
OF-4-062613 306444-03	<12	74
OF-6-062613 306444-04	<12	76
OF-3-062613 306444-05	<12	73
OF-5-062613 306444-06	<12	76
Method Blank 03-1271 MB	<12	75

Date of Report: 08/06/13
Date Received: 06/27/13
Project: Crowley 101.00205.00030, F&BI 306444
Date Extracted: 06/28/13
Date Analyzed: 07/05/13

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 51-134)
OF-1-062613 306444-01	18 x	120	93
OF-2-062613 306444-02	420 x	1,400	90
OF-4-062613 306444-03	26 x	130	114
OF-6-062613 306444-04	43 x	240	99
OF-3-062613 306444-05	63 x	510	92
OF-5-062613 306444-06	27 x	190	93
Method Blank 03-1289 MB3	<6.9	<52	92

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	OF-1-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	06/28/13	Lab ID:	306444-01
Date Analyzed:	06/28/13	Data File:	062820.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16 j	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13 j	Dibromochloromethane	<0.24
Bromomethane	<0.2 j	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18 j	Chlorobenzene	<0.1 j
Trichlorofluoromethane	<0.17 j	Ethylbenzene	<0.16 j
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19 j	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13 j	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15 j
1,1-Dichloroethane	<0.18 j	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14 j
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18 j
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18 j
2-Butanone (MEK)	<0.94	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11 j	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13 j
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16 j
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15 j
Benzene	<0.13 j	1,2,4-Trimethylbenzene	<0.11 j
Trichloroethene	<0.17 j	sec-Butylbenzene	<0.12 j
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15 j
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15 j
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13 j
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13 j	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	OF-2-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	06/28/13	Lab ID:	306444-02
Date Analyzed:	06/28/13	Data File:	062821.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16 j	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13 j	Dibromochloromethane	<0.24
Bromomethane	<0.2 j	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18 j	Chlorobenzene	<0.1 j
Trichlorofluoromethane	<0.17 j	Ethylbenzene	<0.16 j
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19 j	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13 j	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15 j
1,1-Dichloroethane	<0.18 j	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14 j
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18 j
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18 j
2-Butanone (MEK)	<0.94	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11 j	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13 j
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16 j
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15 j
Benzene	<0.13 j	1,2,4-Trimethylbenzene	<0.11 j
Trichloroethene	<0.17 j	sec-Butylbenzene	<0.12 j
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15 j
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15 j
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13 j
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13 j	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	OF-4-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	06/28/13	Lab ID:	306444-03
Date Analyzed:	06/28/13	Data File:	062822.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16 j	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13 j	Dibromochloromethane	<0.24
Bromomethane	<0.2 j	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18 j	Chlorobenzene	<0.1 j
Trichlorofluoromethane	<0.17 j	Ethylbenzene	<0.16 j
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19 j	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13 j	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15 j
1,1-Dichloroethane	<0.18 j	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14 j
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18 j
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18 j
2-Butanone (MEK)	<0.94	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11 j	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13 j
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16 j
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15 j
Benzene	<0.13 j	1,2,4-Trimethylbenzene	<0.11 j
Trichloroethene	<0.17 j	sec-Butylbenzene	<0.12 j
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15 j
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15 j
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13 j
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13 j	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	OF-6-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	06/28/13	Lab ID:	306444-04
Date Analyzed:	06/28/13	Data File:	062823.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16 j	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13 j	Dibromochloromethane	<0.24
Bromomethane	<0.2 j	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18 j	Chlorobenzene	<0.1 j
Trichlorofluoromethane	<0.17 j	Ethylbenzene	<0.16 j
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19 j	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13 j	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15 j
1,1-Dichloroethane	<0.18 j	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14 j
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18 j
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18 j
2-Butanone (MEK)	<0.94	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11 j	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13 j
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16 j
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15 j
Benzene	<0.13 j	1,2,4-Trimethylbenzene	<0.11 j
Trichloroethene	<0.17 j	sec-Butylbenzene	<0.12 j
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15 j
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15 j
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13 j
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13 j	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	OF-3-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	06/28/13	Lab ID:	306444-05
Date Analyzed:	06/28/13	Data File:	062824.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16 j	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13 j	Dibromochloromethane	<0.24
Bromomethane	<0.2 j	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18 j	Chlorobenzene	<0.1 j
Trichlorofluoromethane	<0.17 j	Ethylbenzene	<0.16 j
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19 j	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13 j	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15 j
1,1-Dichloroethane	<0.18 j	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14 j
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18 j
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18 j
2-Butanone (MEK)	<0.94	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11 j	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13 j
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16 j
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15 j
Benzene	<0.13 j	1,2,4-Trimethylbenzene	<0.11 j
Trichloroethene	<0.17 j	sec-Butylbenzene	<0.12 j
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15 j
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15 j
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13 j
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13 j	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	OF-5-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	06/28/13	Lab ID:	306444-06
Date Analyzed:	06/28/13	Data File:	062825.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16 j	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13 j	Dibromochloromethane	<0.24
Bromomethane	<0.2 j	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18 j	Chlorobenzene	<0.1 j
Trichlorofluoromethane	<0.17 j	Ethylbenzene	<0.16 j
Acetone	3.4 lc	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19 j	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13 j	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15 j
1,1-Dichloroethane	<0.18 j	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14 j
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18 j
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18 j
2-Butanone (MEK)	<0.94	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11 j	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13 j
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16 j
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15 j
Benzene	<0.13 j	1,2,4-Trimethylbenzene	<0.11 j
Trichloroethene	<0.17 j	sec-Butylbenzene	<0.12 j
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15 j
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15 j
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13 j
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13 j	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley 101.00205.00030
Date Extracted:	06/28/13	Lab ID:	03-1281 mb
Date Analyzed:	06/28/13	Data File:	062819.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	JS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<0.16 j	1,3-Dichloropropane	<0.2
Chloromethane	<0.22	Tetrachloroethene	<0.28
Vinyl chloride	<0.13 j	Dibromochloromethane	<0.24
Bromomethane	<0.2 j	1,2-Dibromoethane (EDB)	<0.24
Chloroethane	<0.18 j	Chlorobenzene	<0.1 j
Trichlorofluoromethane	<0.17 j	Ethylbenzene	<0.16 j
Acetone	<2.6	1,1,1,2-Tetrachloroethane	<0.32
1,1-Dichloroethene	<0.19 j	m,p-Xylene	<0.5
Methylene chloride	<3	o-Xylene	<0.22
Methyl t-butyl ether (MTBE)	<0.13 j	Styrene	<0.22
trans-1,2-Dichloroethene	<0.24	Isopropylbenzene	<0.15 j
1,1-Dichloroethane	<0.18 j	Bromoform	<0.22
2,2-Dichloropropane	<0.3	n-Propylbenzene	<0.14 j
cis-1,2-Dichloroethene	<0.24	Bromobenzene	<0.18 j
Chloroform	<0.24	1,3,5-Trimethylbenzene	<0.18 j
2-Butanone (MEK)	<0.94	1,1,2,2-Tetrachloroethane	<0.24
1,2-Dichloroethane (EDC)	<0.11 j	1,2,3-Trichloropropane	<0.28
1,1,1-Trichloroethane	<0.2	2-Chlorotoluene	<0.13 j
1,1-Dichloropropene	<0.26	4-Chlorotoluene	<0.16 j
Carbon tetrachloride	<0.24	tert-Butylbenzene	<0.15 j
Benzene	<0.13 j	1,2,4-Trimethylbenzene	<0.11 j
Trichloroethene	<0.17 j	sec-Butylbenzene	<0.12 j
1,2-Dichloropropane	<0.32	p-Isopropyltoluene	<0.15 j
Bromodichloromethane	<0.38	1,3-Dichlorobenzene	<0.15 j
Dibromomethane	<0.28	1,4-Dichlorobenzene	<0.094 j
4-Methyl-2-pentanone	<1.3	1,2-Dichlorobenzene	<0.13 j
cis-1,3-Dichloropropene	<0.2	1,2-Dibromo-3-chloropropane	<0.44
Toluene	<0.13 j	1,2,4-Trichlorobenzene	<0.34
trans-1,3-Dichloropropene	<0.34	Hexachlorobutadiene	<0.46
1,1,2-Trichloroethane	<0.28	Naphthalene	<0.28
2-Hexanone	<1	1,2,3-Trichlorobenzene	<0.38

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	OF-1-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/02/13	Lab ID:	306444-01
Date Analyzed:	07/11/13	Data File:	071107.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	67	32	162
Phenol-d6	40	10	170
Nitrobenzene-d5	135	50	150
2-Fluorobiphenyl	140	43	158
2,4,6-Tribromophenol	149 ip	43	146
Terphenyl-d14	156 J	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.14	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	0.30
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	0.27 fb
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	0.035	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.6
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<7.4	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086 J
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	1.4 J fb jr
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	OF-2-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/02/13	Lab ID:	306444-02
Date Analyzed:	07/11/13	Data File:	071108.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	63	32	162
Phenol-d6	41	10	170
Nitrobenzene-d5	133	50	150
2-Fluorobiphenyl	138	43	158
2,4,6-Tribromophenol	147 ip	43	146
Terphenyl-d14	163	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.14	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	0.28
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	0.25 fb
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.6
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<7.4	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	8.3 fb jr
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	0.21 ca
Hexachlorocyclopentadiene	<0.094		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	OF-4-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/02/13	Lab ID:	306444-03
Date Analyzed:	07/11/13	Data File:	071109.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	67	32	162
Phenol-d6	43	10	170
Nitrobenzene-d5	137	50	150
2-Fluorobiphenyl	135	43	158
2,4,6-Tribromophenol	160 ip	43	146
Terphenyl-d14	155	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.14	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	0.22 fb
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	0.035	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.6
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<7.4	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	0.18
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	2.8 fb jr
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	OF-6-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/02/13	Lab ID:	306444-04
Date Analyzed:	07/11/13	Data File:	071110.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	65	32	162
Phenol-d6	40	10	170
Nitrobenzene-d5	120	50	150
2-Fluorobiphenyl	136	43	158
2,4,6-Tribromophenol	166 ip	43	146
Terphenyl-d14	170 ip	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.14	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	0.075
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	0.17 fb
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.6
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<7.4	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	0.10
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	2.3 fb jr
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	0.11 ca
Hexachlorocyclopentadiene	<0.094		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	OF-3-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/02/13	Lab ID:	306444-05
Date Analyzed:	07/11/13	Data File:	071111.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	65	32	162
Phenol-d6	43	10	170
Nitrobenzene-d5	123	50	150
2-Fluorobiphenyl	127	43	158
2,4,6-Tribromophenol	152 ip	43	146
Terphenyl-d14	150	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.14	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	0.080
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	0.77 fb
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.6
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<7.4	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	3.6 fb jr
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	0.14 ca
Hexachlorocyclopentadiene	<0.094		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	OF-5-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/02/13	Lab ID:	306444-06
Date Analyzed:	07/11/13	Data File:	071112.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	69	32	162
Phenol-d6	43	10	170
Nitrobenzene-d5	140	50	150
2-Fluorobiphenyl	146	43	158
2,4,6-Tribromophenol	164 ip	43	146
Terphenyl-d14	166	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.14	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	0.077
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	0.22 fb
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	0.032	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.6
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<7.4	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	0.070
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	1.0 fb jr
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley 101.00205.00030
Date Extracted:	07/02/13	Lab ID:	03-1303 mb
Date Analyzed:	07/11/13	Data File:	071106.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	36	32	162
Phenol-d6	36	10	170
Nitrobenzene-d5	128	50	150
2-Fluorobiphenyl	129	43	158
2,4,6-Tribromophenol	77	43	146
Terphenyl-d14	155	39	168

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Phenol	<0.14	2,4,6-Trichlorophenol	<0.28
Bis(2-chloroethyl) ether	<0.06	2,4,5-Trichlorophenol	<0.22
2-Chlorophenol	<0.16	2-Chloronaphthalene	<0.044
1,3-Dichlorobenzene	<0.034	2-Nitroaniline	<0.086
1,4-Dichlorobenzene	<0.068	Dimethyl phthalate	<0.05
1,2-Dichlorobenzene	<0.024	2,6-Dinitrotoluene	<0.062
Benzyl alcohol	<0.4	3-Nitroaniline	<0.46
Bis(2-chloroisopropyl) ether	<0.03	2,4-Dinitrophenol	<2.4
2-Methylphenol	<0.26	Dibenzofuran	<0.034
Hexachloroethane	<0.06	2,4-Dinitrotoluene	<0.056
N-Nitroso-di-n-propylamine	<0.11	4-Nitrophenol	<1.3
3-Methylphenol + 4-Methylphenol	<0.4	Diethyl phthalate	0.085 lc
Nitrobenzene	<0.044	4-Chlorophenyl phenyl ether	<0.072
Isophorone	<0.03	N-Nitrosodiphenylamine	<0.05
2-Nitrophenol	<0.17	4-Nitroaniline	<0.6
2,4-Dimethylphenol	<0.28 jl	4,6-Dinitro-2-methylphenol	<0.38
Benzoic acid	<7.4	4-Bromophenyl phenyl ether	<0.056
Bis(2-chloroethoxy)methane	<0.034	Hexachlorobenzene	<0.05
2,4-Dichlorophenol	<0.26	Pentachlorophenol	<0.32
1,2,4-Trichlorobenzene	<0.05	Carbazole	<0.048
Hexachlorobutadiene	<0.07	Di-n-butyl phthalate	<0.068
4-Chloroaniline	<0.056	Benzyl butyl phthalate	<0.086
4-Chloro-3-methylphenol	<0.24	Bis(2-ethylhexyl) phthalate	0.50 lc
2-Methylnaphthalene	<0.034	Di-n-octyl phthalate	<0.044
Hexachlorocyclopentadiene	<0.094		

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OF-1-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	306444-01
Date Analyzed:	07/17/13	Data File:	071725.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	50	150
Benzo(a)anthracene-d12	90	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0045
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	0.0075
Anthracene	0.0029
Fluoranthene	0.015
Pyrene	0.0077
Benz(a)anthracene	<0.0042
Chrysene	0.0043
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

Note - Analysis performed outside the method or client-specified holding time requirement.

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OF-2-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	306444-02
Date Analyzed:	07/17/13	Data File:	071726.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	69	50	150
Benzo(a)anthracene-d12	81	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	0.0075
Anthracene	0.0054
Fluoranthene	0.019
Pyrene	0.025
Benz(a)anthracene	0.0055
Chrysene	0.017
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	0.0071
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

Note - Analysis performed outside the method or client-specified holding time requirement.

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OF-4-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	306444-03
Date Analyzed:	07/17/13	Data File:	071727.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	79	50	150
Benzo(a)anthracene-d12	95	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	0.0030
Fluoranthene	0.0070
Pyrene	0.0054
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

Note - Analysis performed outside the method or client-specified holding time requirement.

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OF-6-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	306444-04
Date Analyzed:	07/17/13	Data File:	071728.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	74	50	150
Benzo(a)anthracene-d12	75	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.0045
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	0.0030
Fluoranthene	0.0077
Pyrene	0.0080
Benz(a)anthracene	<0.0042
Chrysene	0.0059
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

Note - Analysis performed outside the method or client-specified holding time requirement.

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OF-3-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	306444-05
Date Analyzed:	07/17/13	Data File:	071729.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	61	50	150
Benzo(a)anthracene-d12	36 vo	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	0.004
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	0.0083
Anthracene	0.0045
Fluoranthene	0.014
Pyrene	0.019
Benz(a)anthracene	0.0048 js
Chrysene	0.0088 js
Benzo(a)pyrene	<0.0078 js
Benzo(b)fluoranthene	0.0053 js
Benzo(k)fluoranthene	<0.0076 js
Indeno(1,2,3-cd)pyrene	<0.007 js
Dibenz(a,h)anthracene	<0.004 js
Benzo(g,h,i)perylene	<0.0044 js

Note - Analysis performed outside the method or client-specified holding time requirement.

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OF-5-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	306444-06
Date Analyzed:	07/17/13	Data File:	071730.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	85	50	150
Benzo(a)anthracene-d12	105	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	0.011
Anthracene	0.013
Fluoranthene	0.014
Pyrene	0.020
Benz(a)anthracene	<0.0042
Chrysene	0.012
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

Note - Analysis performed outside the method or client-specified holding time requirement.

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley 101.00205.00030
Date Extracted:	07/16/13	Lab ID:	03-1378 mb2
Date Analyzed:	07/16/13	Data File:	071608.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	88	50	150
Benzo(a)anthracene-d12	95	50	129

Compounds:	Concentration ug/L (ppb)
Naphthalene	<0.004
Acenaphthylene	<0.0024
Acenaphthene	<0.0038
Fluorene	<0.004
Phenanthrene	<0.0066
Anthracene	<0.0028
Fluoranthene	<0.0046
Pyrene	<0.0036
Benz(a)anthracene	<0.0042
Chrysene	<0.0038
Benzo(a)pyrene	<0.0078
Benzo(b)fluoranthene	<0.0052
Benzo(k)fluoranthene	<0.0076
Indeno(1,2,3-cd)pyrene	<0.007
Dibenz(a,h)anthracene	<0.004
Benzo(g,h,i)perylene	<0.0044

Analysis For PCBs By EPA Method 8082

Client Sample ID:	OF-1-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/02/13	Lab ID:	306444-01
Date Analyzed:	07/05/13	Data File:	16.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	54	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

Analysis For PCBs By EPA Method 8082

Client Sample ID:	OF-2-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/02/13	Lab ID:	306444-02
Date Analyzed:	07/05/13	Data File:	18.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	65	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

Analysis For PCBs By EPA Method 8082

Client Sample ID:	OF-4-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/02/13	Lab ID:	306444-03
Date Analyzed:	07/05/13	Data File:	20.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	64	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

Analysis For PCBs By EPA Method 8082

Client Sample ID:	OF-6-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/02/13	Lab ID:	306444-04
Date Analyzed:	07/05/13	Data File:	22.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	70	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

Analysis For PCBs By EPA Method 8082

Client Sample ID:	OF-3-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/02/13	Lab ID:	306444-05
Date Analyzed:	07/05/13	Data File:	24.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	81	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

Analysis For PCBs By EPA Method 8082

Client Sample ID:	OF-5-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/02/13	Lab ID:	306444-06
Date Analyzed:	07/05/13	Data File:	26.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	53	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

Analysis For PCBs By EPA Method 8082

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley 101.00205.00030
Date Extracted:	07/02/13	Lab ID:	MB 03-1330
Date Analyzed:	07/05/13	Data File:	28.D\ECD1A.CH
Matrix:	Water	Instrument:	GC7
Units:	ug/L (ppb)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	50	50	150

Compounds:	Concentration ug/L (ppb)
Aroclor 1221	<0.01 j
Aroclor 1232	<0.01 j
Aroclor 1016	<0.01 j
Aroclor 1242	<0.01 j
Aroclor 1248	<0.01 j
Aroclor 1254	<0.01 j
Aroclor 1260	<0.01 j

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	OF-1-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306444-01
Date Analyzed:	07/11/13	Data File:	306444-01.063
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	103	60	125
Indium	99	60	125
Holmium	95	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	2.20
Nickel	2.31
Copper	15.8
Zinc	81.0
Arsenic	1.33
Selenium	<0.56
Silver	<0.064
Cadmium	0.147
Antimony	1.04
Barium	38.6
Thallium	<0.074 j
Lead	2.43

Analysis For Total Metals By EPA Method 200.8

Client ID:	OF-2-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306444-02
Date Analyzed:	07/11/13	Data File:	306444-02.064
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	103	60	125
Indium	97	60	125
Holmium	98	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	4.16
Nickel	3.87
Copper	21.1
Zinc	91.9
Arsenic	2.31
Selenium	<0.56
Silver	<0.064
Cadmium	0.197
Antimony	1.52
Barium	56.0
Thallium	<0.074 j
Lead	4.98

Analysis For Total Metals By EPA Method 200.8

Client ID:	OF-4-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306444-03
Date Analyzed:	07/11/13	Data File:	306444-03.065
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	102	60	125
Indium	102	60	125
Holmium	98	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	3.76
Nickel	3.30
Copper	35.4
Zinc	134
Arsenic	2.28
Selenium	<0.56
Silver	<0.064
Cadmium	0.252
Antimony	1.55
Barium	33.3
Thallium	<0.074 j
Lead	5.37

Analysis For Total Metals By EPA Method 200.8

Client ID:	OF-6-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306444-04
Date Analyzed:	07/11/13	Data File:	306444-04.066
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	100	60	125
Indium	95	60	125
Holmium	94	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	2.39
Nickel	2.09
Copper	13.1
Zinc	183
Arsenic	2.15
Selenium	<0.56
Silver	<0.064
Cadmium	0.164
Antimony	1.71
Barium	27.0
Thallium	<0.074 j
Lead	3.58

Analysis For Total Metals By EPA Method 200.8

Client ID:	OF-3-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306444-05
Date Analyzed:	07/11/13	Data File:	306444-05.067
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	98	60	125
Indium	96	60	125
Holmium	96	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	3.56
Nickel	4.69
Copper	18.7
Zinc	89.9
Arsenic	3.13
Selenium	<0.56
Silver	<0.064
Cadmium	0.387
Antimony	1.14
Barium	40.8
Thallium	<0.074 j
Lead	5.75

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 200.8

Client ID:	OF-5-062613	Client:	SLR International Corp.
Date Received:	06/27/13	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	306444-06
Date Analyzed:	07/11/13	Data File:	306444-06.068
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	99	60	125
Indium	98	60	125
Holmium	95	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	2.12
Nickel	3.05
Copper	16.9
Zinc	134
Arsenic	1.23
Selenium	<0.56
Silver	<0.064
Cadmium	0.241
Antimony	0.925
Barium	28.0
Thallium	<0.074 j
Lead	3.99

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	I3-407 mb
Date Analyzed:	07/09/13	Data File:	I3-407 mb.050
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	95	60	125
Indium	92	60	125
Holmium	93	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	<0.138
Nickel	<0.46
Copper	<0.34
Zinc	<0.61
Arsenic	<0.15
Selenium	<0.56
Silver	<0.064
Cadmium	<0.094
Antimony	<0.086 j
Barium	<0.26
Thallium	<0.074 j
Lead	<0.144

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley 101.00205.00030
Date Extracted:	07/09/13	Lab ID:	I3-407 mb
Date Analyzed:	07/11/13	Data File:	I3-407 mb.036
Matrix:	Water	Instrument:	ICPMS1
Units:	ug/L (ppb)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	97	60	125
Indium	100	60	125
Holmium	98	60	125

Analyte:	Concentration ug/L (ppb)
Beryllium	<0.098
Chromium	<0.138
Nickel	<0.46
Copper	<0.34
Zinc	<0.61
Arsenic	<0.15
Selenium	<0.56
Silver	<0.064
Cadmium	<0.094
Antimony	<0.052 j
Barium	<0.26
Thallium	<0.074
Lead	<0.144

Date of Report: 08/06/13
Date Received: 06/27/13
Project: Crowley 101.00205.00030, F&BI 306444
Date Extracted: 07/08/13
Date Analyzed: 07/10/13

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Total Mercury
OF-1-062613 306444-01	0.0065
OF-2-062613 306444-02	0.010
OF-4-062613 306444-03	0.013
OF-6-062613 306444-04	0.0051
OF-3-062613 306444-05	0.012
OF-5-062613 306444-06	0.0060
Method Blank	<0.0015

Date of Report: 08/06/13
Date Received: 06/27/13
Project: Crowley 101.00205.00030, F&BI 306444
Date Extracted: NA
Date Analyzed: 07/03/13

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Results Reported as mg/L (ppm)

Sample ID Laboratory ID	Total Suspended Solids
OF-1-062613 306444-01	24
OF-2-062613 306444-02	23
OF-4-062613 306444-03	10
OF-6-062613 306444-04	12
OF-3-062613 306444-05	20
OF-5-062613 306444-06	<10
Method Blank	<10

Date of Report: 08/06/13
Date Received: 06/27/13
Project: Crowley 101.00205.00030, F&BI 306444

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 306444-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Gasoline	ug/L (ppb)	<12	<12	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	96	69-134

Date of Report: 08/06/13
Date Received: 06/27/13
Project: Crowley 101.00205.00030, F&BI 306444

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	107	101	58-134	6

Date of Report: 08/06/13
Date Received: 06/27/13
Project: Crowley 101.00205.00030, F&BI 306444

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 306444-06 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	<0.16	92	55-144
Chloromethane	ug/L (ppb)	50	<0.22	89	67-131
Vinyl chloride	ug/L (ppb)	50	<0.13	91	61-139
Bromomethane	ug/L (ppb)	50	<0.2	554 vo	66-129
Chloroethane	ug/L (ppb)	50	<0.18	160 vo	68-126
Trichlorofluoromethane	ug/L (ppb)	50	<0.17	116	71-128
Acetone	ug/L (ppb)	250	3.4	96	48-149
1,1-Dichloroethene	ug/L (ppb)	50	<0.19	109	71-123
Methylene chloride	ug/L (ppb)	50	<3	98	61-126
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<0.13	97	68-125
trans-1,2-Dichloroethene	ug/L (ppb)	50	<0.24	99	72-122
1,1-Dichloroethane	ug/L (ppb)	50	<0.18	99	79-113
2,2-Dichloropropane	ug/L (ppb)	50	<0.3	97	58-132
cis-1,2-Dichloroethene	ug/L (ppb)	50	<0.24	99	73-119
Chloroform	ug/L (ppb)	50	<0.24	100	80-112
2-Butanone (MEK)	ug/L (ppb)	250	<0.94	100	69-123
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<0.11	97	78-113
1,1,1-Trichloroethane	ug/L (ppb)	50	<0.2	104	79-116
1,1-Dichloropropene	ug/L (ppb)	50	<0.26	100	67-121
Carbon tetrachloride	ug/L (ppb)	50	<0.24	113	72-123
Benzene	ug/L (ppb)	50	<0.13	94	79-109
Trichloroethene	ug/L (ppb)	50	<0.17	98	75-109
1,2-Dichloropropane	ug/L (ppb)	50	<0.32	99	80-111
Bromodichloromethane	ug/L (ppb)	50	<0.38	113	78-117
Dibromomethane	ug/L (ppb)	50	<0.28	100	80-112
4-Methyl-2-pentanone	ug/L (ppb)	250	<1.3	104	79-123
cis-1,3-Dichloropropene	ug/L (ppb)	50	<0.2	110	76-120
Toluene	ug/L (ppb)	50	<0.13	95	73-117
trans-1,3-Dichloropropene	ug/L (ppb)	50	<0.34	101	75-122
1,1,2-Trichloroethane	ug/L (ppb)	50	<0.28	99	81-111
2-Hexanone	ug/L (ppb)	250	<1	101	75-126
1,3-Dichloropropane	ug/L (ppb)	50	<0.2	99	81-111
Tetrachloroethene	ug/L (ppb)	50	<0.28	95	72-113
Dibromochloromethane	ug/L (ppb)	50	<0.24	110	69-129
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<0.24	107	83-114
Chlorobenzene	ug/L (ppb)	50	<0.1	96	75-115
Ethylbenzene	ug/L (ppb)	50	<0.16	96	71-120
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<0.32	110	78-122
m,p-Xylene	ug/L (ppb)	100	<0.5	96	63-128
o-Xylene	ug/L (ppb)	50	<0.22	96	64-129
Styrene	ug/L (ppb)	50	<0.22	99	70-122
Isopropylbenzene	ug/L (ppb)	50	<0.15	98	76-118
Bromoform	ug/L (ppb)	50	<0.22	113	49-138
n-Propylbenzene	ug/L (ppb)	50	<0.14	102	74-117
Bromobenzene	ug/L (ppb)	50	<0.18	100	70-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<0.18	103	81-112
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<0.24	106	79-120
1,2,3-Trichloropropane	ug/L (ppb)	50	<0.28	100	72-119
2-Chlorotoluene	ug/L (ppb)	50	<0.13	99	77-114
4-Chlorotoluene	ug/L (ppb)	50	<0.16	100	81-109
tert-Butylbenzene	ug/L (ppb)	50	<0.15	102	81-116
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<0.11	102	74-118
sec-Butylbenzene	ug/L (ppb)	50	<0.12	100	77-118
p-Isopropyltoluene	ug/L (ppb)	50	<0.15	100	64-132
1,3-Dichlorobenzene	ug/L (ppb)	50	<0.15	97	81-111
1,4-Dichlorobenzene	ug/L (ppb)	50	<0.094	95	78-110
1,2-Dichlorobenzene	ug/L (ppb)	50	<0.13	97	81-111
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<0.44	111	69-129
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<0.34	97	74-115
Hexachlorobutadiene	ug/L (ppb)	50	<0.46	86	67-120
Naphthalene	ug/L (ppb)	50	<0.28	105	63-136
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<0.38	95	79-115

Date of Report: 08/06/13
Date Received: 06/27/13
Project: Crowley 101.00205.00030, F&BI 306444

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	91	88	54-149	3
Chloromethane	ug/L (ppb)	50	89	88	67-133	1
Vinyl chloride	ug/L (ppb)	50	92	89	73-132	3
Bromomethane	ug/L (ppb)	50	602 vo	611 vo	69-123	1
Chloroethane	ug/L (ppb)	50	162 vo	158 vo	68-126	2
Trichlorofluoromethane	ug/L (ppb)	50	117	116	70-132	1
Acetone	ug/L (ppb)	250	104	101	44-145	3
1,1-Dichloroethene	ug/L (ppb)	50	108	109	75-119	1
Methylene chloride	ug/L (ppb)	50	97	97	63-132	0
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	99	100	70-122	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	99	99	76-118	0
1,1-Dichloroethane	ug/L (ppb)	50	100	99	80-116	1
2,2-Dichloropropane	ug/L (ppb)	50	106	105	62-141	1
cis-1,2-Dichloroethene	ug/L (ppb)	50	98	98	81-111	0
Chloroform	ug/L (ppb)	50	99	100	81-109	1
2-Butanone (MEK)	ug/L (ppb)	250	103	102	53-140	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	98	97	79-109	1
1,1,1-Trichloroethane	ug/L (ppb)	50	106	107	80-116	1
1,1-Dichloropropene	ug/L (ppb)	50	99	100	78-112	1
Carbon tetrachloride	ug/L (ppb)	50	116	117	72-128	1
Benzene	ug/L (ppb)	50	94	95	81-108	1
Trichloroethene	ug/L (ppb)	50	99	99	77-108	0
1,2-Dichloropropane	ug/L (ppb)	50	99	101	82-109	2
Bromodichloromethane	ug/L (ppb)	50	113	115	76-120	2
Dibromomethane	ug/L (ppb)	50	100	101	80-110	1
4-Methyl-2-pentanone	ug/L (ppb)	250	106	108	59-142	2
cis-1,3-Dichloropropene	ug/L (ppb)	50	114	116	76-128	2
Toluene	ug/L (ppb)	50	95	96	83-108	1
trans-1,3-Dichloropropene	ug/L (ppb)	50	107	110	76-128	3
1,1,2-Trichloroethane	ug/L (ppb)	50	101	101	82-110	0
2-Hexanone	ug/L (ppb)	250	102	105	53-145	3
1,3-Dichloropropane	ug/L (ppb)	50	99	102	83-110	3
Tetrachloroethene	ug/L (ppb)	50	94	97	78-109	3
Dibromochloromethane	ug/L (ppb)	50	113	115	63-140	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	110	112	85-113	2
Chlorobenzene	ug/L (ppb)	50	96	96	84-108	0
Ethylbenzene	ug/L (ppb)	50	96	98	84-110	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	113	114	76-125	1
m,p-Xylene	ug/L (ppb)	100	96	98	84-112	2
o-Xylene	ug/L (ppb)	50	97	97	82-113	0
Styrene	ug/L (ppb)	50	99	101	84-116	2
Isopropylbenzene	ug/L (ppb)	50	98	99	81-122	1
Bromoform	ug/L (ppb)	50	117	119	40-161	2
n-Propylbenzene	ug/L (ppb)	50	100	102	81-115	2
Bromobenzene	ug/L (ppb)	50	98	101	80-113	3
1,3,5-Trimethylbenzene	ug/L (ppb)	50	101	102	83-117	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	107	108	79-118	1
1,2,3-Trichloropropane	ug/L (ppb)	50	102	103	74-116	1
2-Chlorotoluene	ug/L (ppb)	50	98	99	79-112	1
4-Chlorotoluene	ug/L (ppb)	50	99	101	81-113	2
tert-Butylbenzene	ug/L (ppb)	50	101	101	81-119	0
1,2,4-Trimethylbenzene	ug/L (ppb)	50	101	102	83-116	1
sec-Butylbenzene	ug/L (ppb)	50	99	100	83-116	1
p-Isopropyltoluene	ug/L (ppb)	50	99	101	82-119	2
1,3-Dichlorobenzene	ug/L (ppb)	50	95	96	83-111	1
1,4-Dichlorobenzene	ug/L (ppb)	50	94	95	82-109	1
1,2-Dichlorobenzene	ug/L (ppb)	50	95	96	83-111	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	118	116	62-133	2
1,2,4-Trichlorobenzene	ug/L (ppb)	50	98	97	77-117	1
Hexachlorobutadiene	ug/L (ppb)	50	88	87	74-118	1
Naphthalene	ug/L (ppb)	50	109	107	75-131	2
1,2,3-Trichlorobenzene	ug/L (ppb)	50	97	96	82-115	1

Date of Report: 08/06/13
Date Received: 06/27/13
Project: Crowley 101.00205.00030, F&BI 306444

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	ug/L (ppb)	10	36	37	18-52	3
Bis(2-chloroethyl) ether	ug/L (ppb)	10	113	85	52-113	28 vo
2-Chlorophenol	ug/L (ppb)	10	75	82	50-110	9
1,3-Dichlorobenzene	ug/L (ppb)	10	79	87	45-109	10
1,4-Dichlorobenzene	ug/L (ppb)	10	82	89	44-118	8
1,2-Dichlorobenzene	ug/L (ppb)	10	82	89	46-116	8
Benzyl alcohol	ug/L (ppb)	10	66	72	42-100	9
Bis(2-chloroisopropyl) ether	ug/L (ppb)	10	82	88	51-124	7
2-Methylphenol	ug/L (ppb)	10	61	66	38-100	8
Hexachloroethane	ug/L (ppb)	10	81	89	42-117	9
N-Nitroso-di-n-propylamine	ug/L (ppb)	10	76	87	48-124	13
3-Methylphenol + 4-Methylphenol	ug/L (ppb)	10	58	61	48-87	5
Nitrobenzene	ug/L (ppb)	10	79	88	50-118	11
Isophorone	ug/L (ppb)	10	84	91	55-116	8
2-Nitrophenol	ug/L (ppb)	10	85	94	42-127	10
2,4-Dimethylphenol	ug/L (ppb)	10	29 vo	32 vo	45-100	10
Benzoic acid	ug/L (ppb)	65	91 vo	81 vo	10-46	12
Bis(2-chloroethoxy)methane	ug/L (ppb)	10	83	89	55-115	7
2,4-Dichlorophenol	ug/L (ppb)	10	83	88	55-113	6
1,2,4-Trichlorobenzene	ug/L (ppb)	10	84	91	50-109	8
Hexachlorobutadiene	ug/L (ppb)	10	86	94	50-109	9
4-Chloroaniline	ug/L (ppb)	20	76	84	30-109	10
4-Chloro-3-methylphenol	ug/L (ppb)	10	81	84	54-114	4
2-Methylnaphthalene	ug/L (ppb)	10	82	86	53-113	5
Hexachlorocyclopentadiene	ug/L (ppb)	10	58	73	26-94	23 vo
2,4,6-Trichlorophenol	ug/L (ppb)	10	83	88	46-114	6
2,4,5-Trichlorophenol	ug/L (ppb)	10	86	90	57-122	5
2-Chloronaphthalene	ug/L (ppb)	10	85	92	52-112	8
2-Nitroaniline	ug/L (ppb)	10	85	90	47-128	6
Dimethyl phthalate	ug/L (ppb)	10	95	98	55-116	3
2,6-Dinitrotoluene	ug/L (ppb)	10	96	100	49-126	4
3-Nitroaniline	ug/L (ppb)	20	81	84	21-125	4
2,4-Dinitrophenol	ug/L (ppb)	10	69	67	29-130	3
Dibenzofuran	ug/L (ppb)	10	90	94	53-113	4
2,4-Dinitrotoluene	ug/L (ppb)	10	101	101	48-129	0
4-Nitrophenol	ug/L (ppb)	10	29	28	12-59	4
Diethyl phthalate	ug/L (ppb)	10	97	98	55-116	1
4-Chlorophenyl phenyl ether	ug/L (ppb)	10	92	96	52-115	4
N-Nitrosodiphenylamine	ug/L (ppb)	10	85	97	51-112	13
4-Nitroaniline	ug/L (ppb)	20	86	95	42-115	10
4,6-Dinitro-2-methylphenol	ug/L (ppb)	10	78	82	40-128	5
4-Bromophenyl phenyl ether	ug/L (ppb)	10	91	100	53-114	9
Hexachlorobenzene	ug/L (ppb)	10	91	102	54-115	11
Pentachlorophenol	ug/L (ppb)	10	71	75	49-114	5
Carbazole	ug/L (ppb)	10	85	91	54-115	7
Di-n-butyl phthalate	ug/L (ppb)	10	91	95	54-115	4
Benzyl butyl phthalate	ug/L (ppb)	10	91	99	53-122	8
Bis(2-ethylhexyl) phthalate	ug/L (ppb)	10	76	98	54-122	25 vo
Di-n-octyl phthalate	ug/L (ppb)	10	90	99	50-131	10

Date of Report: 08/06/13
Date Received: 06/27/13
Project: Crowley 101.00205.00030, F&BI 306444

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	1	78	75	67-116	4
Acenaphthylene	ug/L (ppb)	1	94	91	65-119	3
Acenaphthene	ug/L (ppb)	1	90	88	66-118	2
Fluorene	ug/L (ppb)	1	96	95	64-125	1
Phenanthrene	ug/L (ppb)	1	91	93	67-120	2
Anthracene	ug/L (ppb)	1	94	95	65-122	1
Fluoranthene	ug/L (ppb)	1	96	101	65-127	5
Pyrene	ug/L (ppb)	1	97	99	62-130	2
Benz(a)anthracene	ug/L (ppb)	1	92	94	60-118	2
Chrysene	ug/L (ppb)	1	95	97	66-125	2
Benzo(b)fluoranthene	ug/L (ppb)	1	85	90	55-135	6
Benzo(k)fluoranthene	ug/L (ppb)	1	81	81	62-125	0
Benzo(a)pyrene	ug/L (ppb)	1	83	85	58-127	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	85	87	36-142	2
Dibenz(a,h)anthracene	ug/L (ppb)	1	82	84	37-133	2
Benzo(g,h,i)perylene	ug/L (ppb)	1	84	85	34-135	1

Date of Report: 08/06/13
Date Received: 06/27/13
Project: Crowley 101.00205.00030, F&BI 306444

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	2.5	70	72	70-130	1
Aroclor 1260	ug/L (ppb)	2.5	85	93	70-130	9

Date of Report: 08/06/13
Date Received: 06/27/13
Project: Crowley 101.00205.00030, F&BI 306444

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 307082-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	ug/L (ppb)	5	<0.0978	95	96	67-145	1
Chromium	ug/L (ppb)	20	0.990	91	90	64-132	1
Nickel	ug/L (ppb)	20	7.57	87 b	88 b	61-128	1 b
Copper	ug/L (ppb)	20	507	0 b	0 b	63-124	0 b
Zinc	ug/L (ppb)	50	442	30 b	18 b	55-141	50 b
Arsenic	ug/L (ppb)	10	12.1	89 b	88 b	60-150	1 b
Selenium	ug/L (ppb)	5	0.746	104	97	43-178	7
Silver	ug/L (ppb)	5	<0.064	91	91	71-115	0
Cadmium	ug/L (ppb)	5	0.886	96	95	83-116	1
Antimony	ug/L (ppb)	20	1.09	91	92	62-125	1
Barium	ug/L (ppb)	50	25.5	93 b	90 b	79-126	3 b
Thallium	ug/L (ppb)	5	<0.0739	98	96	73-119	2
Lead	ug/L (ppb)	10	7.07	90 b	89 b	79-121	1 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	ug/L (ppb)	5	107	73-135
Chromium	ug/L (ppb)	20	98	80-119
Nickel	ug/L (ppb)	20	103	79-122
Copper	ug/L (ppb)	20	109	81-119
Zinc	ug/L (ppb)	50	102	76-124
Arsenic	ug/L (ppb)	10	101	80-111
Selenium	ug/L (ppb)	5	108	81-119
Silver	ug/L (ppb)	5	104	80-116
Cadmium	ug/L (ppb)	5	106	83-113
Antimony	ug/L (ppb)	20	96	79-108
Barium	ug/L (ppb)	50	105	83-117
Thallium	ug/L (ppb)	5	102	78-116
Lead	ug/L (ppb)	10	104	83-115

Date of Report: 08/06/13
Date Received: 06/27/13
Project: Crowley 101.00205.00030, F&BI 306444

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 306444-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	ug/L (ppb)	0.01	0.0065	92	89	63-132	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	ug/L (ppb)	0.01	94	78-118

Date of Report: 08/06/13
Date Received: 06/27/13
Project: Crowley 101.00205.00030, F&BI 306444

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL SUSPENDED SOLIDS BY METHOD 2540D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
TSS	mg/L	50	114	117	61-131	3

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

July 8, 2013

Michele Costales Poquiz
Friedman & Bruya
3012 16th Ave W
Seattle, WA 98119

RE: Project: 306444
ARI Job No.: WV90

Dear Michele:

Please find enclosed the Chain-of-Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted six water samples on June 28, 2013, under ARI job WV90. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The samples were analyzed for chloride and TOC, as requested on the COC.

There were no anomalies associated with the analyses of these samples.

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

Respectfully,
ANALYTICAL RESOURCES, INC.

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

cc: eFile WV90

Enclosures

SAMPLE CHAIN OF CUSTODY

Send Report To Michele Costales Poquiz

Company Friedman & Bruya, Inc.

Address 3012 16th Ave. W.

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

Email Address mpoquiz@friedmanandbruya.com

SUBCONTRACTOR
Analytical Resources, Inc. (ARI)

PROJECT NAME/NO.	PO #
306444	C-436

REMARKS

Please e-mail results

ELECTRONIC DATA REQUESTED (EIM)

TURNAROUND TIME
- [x] Standard Turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Dispose after 30 days
- [ ] Return samples
- [ ] Will call with instructions

Samples Received at ____ °C

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Hexavalent Cr by 7196A	Total Organic Carbon by 9060M	Chloride by SM4500			Notes
						ANALYSES REQUESTED											
OF-1-062613		6/26/13	1355	water	2								X	X			
OF-2-062613		"	1425	"	2								X	X			
OF-4-062613		"	1445	"	2								X	X			
OF-6-062613		"	1600	"	2								X	X			
OF-3-062613		"	1630	"	2								X	X			
OF-5-062613		"	1645	"	2								X	X			

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michele Costales Poquiz	F&B1	6/27/13	9:07 AM
Received by:	Taylor ST courier	ARI	6-27-13	1020
Relinquished by:				
Received by:				

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: F & B

COC No(s): _____ NA

Assigned ARI Job No: WVQD

Project Name: _____

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: Postal Ex

Tracking No: _____ NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	NO
Were custody papers included with the cooler?	YES	NO
Were custody papers properly filled out (ink, signed, etc.)	YES	NO
Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry)	4.9	

If cooler temperature is out of compliance fill out form 00070F — Temp Gun ID#: 90877952

Cooler Accepted by: TS Date: 6-28-13 Time: 1020

Complete custody forms and attach all shipping documents

Log-In Phase:

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

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

Samples Logged by: TS Date: 6-28-13 Time: 1108

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WV90
Client: Friedman & Bruay
Project Event: 306444
Project Name: N/A

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	OF-1-062613	WV90A	13-13804	Water	06/26/13 13:55	06/28/13 10:20
2.	OF-2-062613	WV90B	13-13805	Water	06/26/13 14:25	06/28/13 10:20
3.	OF-4-062613	WV90C	13-13806	Water	06/26/13 14:45	06/28/13 10:20
4.	OF-6-062613	WV90D	13-13807	Water	06/26/13 16:00	06/28/13 10:20
5.	OF-3-062613	WV90E	13-13808	Water	06/26/13 16:30	06/28/13 10:20
6.	OF-5-062613	WV90F	13-13809	Water	06/26/13 16:45	06/28/13 10:20

PRESERVATION VERIFICATION 06/28/13
Page 1 of 1

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: **WV90**

Inquiry Number: NONE
Analysis Requested: 06/28/13
Contact: COSTALES,MICHELE
Client: Friedman & Bruay
Logged by: TS
Sample Set Used: Yes-481
Validatable Package: No
Deliverables:

PC: Cheronne
VTSR: 06/28/13

Project #: 306444
Project:
Sample Site:
SDG No:
Analytical Protocol: In-house

LOGNUM ARI ID	CLIENT ID	CN >12	WAD >12	NH3 <2	COD <2	FOG <2	MET <2	PHEN <2	PHOS <2	TKN <2	NO23 <2	TOC <2	S2 >9	TPHD <2	Fe2+ <2	DMET FLT	DOC FLT	PARAMETER	ADJUSTED TO	LOT NUMBER	AMOUNT ADDED	DATE/BY
13-13804 **WV90A**	OF-1-062613				16 ~~8.3~~							Pass										
13-13805 **WV90B**	OF-2-062613											Pass										
13-13806 **WV90C**	OF-4-062613											Pass										
13-13807 **WV90D**	OF-6-062613											Pass										
13-13808 **WV90E**	OF-3-062613											Pass										
13-13809 **WV90F**	OF-5-062613											Pass										

S00000 : 9SAM

Checked By TB Date 6-28-13

SAMPLE RESULTS-CONVENTIONALS
WV90-Friedman & Bruay

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: MB
Reported: 07/08/13

Project: NA
Event: 306444
Date Sampled: 06/26/13
Date Received: 06/28/13

Client ID: OF-1-062613
ARI ID: 13-13804 WV90A

Analyte	Date Batch	Method	Units	RL	Sample
Chloride	07/05/13 070513#1	SM4500-CLE	mg/L	1.0	2.2
Total Organic Carbon	07/01/13 070113#1	EPA 9060	mg/L	1.50	11.3

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WV90-Friedman & Bruay

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/08/13

Project: NA
Event: 306444
Date Sampled: 06/26/13
Date Received: 06/28/13

Client ID: OF-2-062613
ARI ID: 13-13805 WV90B

Analyte	Date Batch	Method	Units	RL	Sample
Chloride	07/05/13 070513#1	SM4500-CLE	mg/L	1.0	4.9
Total Organic Carbon	07/01/13 070113#1	EPA 9060	mg/L	1.50	19.2

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WV90-Friedman & Bruay

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/08/13

Project: NA
Event: 306444
Date Sampled: 06/26/13
Date Received: 06/28/13

Client ID: OF-4-062613
ARI ID: 13-13806 WV90C

Analyte	Date Batch	Method	Units	RL	Sample
Chloride	07/05/13 070513#1	SM4500-CLE	mg/L	1.0	4.8
Total Organic Carbon	07/01/13 070113#1	EPA 9060	mg/L	1.50	10.7

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WV90-Friedman & Bruay

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/08/13

Project: NA
Event: 306444
Date Sampled: 06/26/13
Date Received: 06/28/13

Client ID: OF-6-062613
ARI ID: 13-13807 WV90D

Analyte	Date Batch	Method	Units	RL	Sample
Chloride	07/05/13 070513#1	SM4500-CLE	mg/L	10.0	37.0
Total Organic Carbon	07/01/13 070113#1	EPA 9060	mg/L	1.50	7.33

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WV90-Friedman & Bruay

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: MS
Reported: 07/08/13

Project: NA
Event: 306444
Date Sampled: 06/26/13
Date Received: 06/28/13

Client ID: OF-3-062613
ARI ID: 13-13808 WV90E

Analyte	Date Batch	Method	Units	RL	Sample
Chloride	07/05/13 070513#1	SM4500-CLE	mg/L	2.0	15.0
Total Organic Carbon	07/01/13 070113#1	EPA 9060	mg/L	1.50	22.8

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WV90-Friedman & Bruay

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: MB
Reported: 07/08/13

Project: NA
Event: 306444
Date Sampled: 06/26/13
Date Received: 06/28/13

Client ID: OF-5-062613
ARI ID: 13-13809 WV90F

Analyte	Date Batch	Method	Units	RL	Sample
Chloride	07/05/13 070513#1	SM4500-CLE	mg/L	1.0	3.1
Total Organic Carbon	07/01/13 070113#1	EPA 9060	mg/L	1.50	10.8

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
WV90-Friedman & Bruay

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/08/13

Project: NA
Event: 306444
Date Sampled: 06/26/13
Date Received: 06/28/13

Analyte	Method	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: WV90A Client ID: OF-1-062613							
Chloride	SM4500-CLE	07/05/13	mg/L	2.2	7.5	5.0	106.0%
Total Organic Carbon	EPA 9060	07/01/13	mg/L	11.3	32.3	20.0	105.0%

REPLICATE RESULTS-CONVENTIONALS
WV90-Friedman & Bruay

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/08/13

Project: NA
Event: 306444
Date Sampled: 06/26/13
Date Received: 06/28/13

Analyte	Method	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: WV90A Client ID: OF-1-062613						
Chloride	SM4500-CLE	07/05/13	mg/L	2.2	2.3	4.4%
Total Organic Carbon	EPA 9060	07/01/13	mg/L	11.3	11.4	0.9%

METHOD BLANK RESULTS-CONVENTIONALS
WV90-Friedman & Bruay

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized:
Reported: 07/08/13

Project: NA
Event: 306444
Date Sampled: NA
Date Received: NA

Analyte	Method	Date	Units	Blank	ID
Chloride	SM4500-CLE	07/05/13	mg/L	< 1.0 U	FB
Total Organic Carbon	EPA 9060	07/01/13	mg/L	< 1.50 U	

FB Filtration Blank

STANDARD REFERENCE RESULTS-CONVENTIONALS
WV90-Friedman & Bruay

ANALYTICAL RESOURCES INCORPORATED

Matrix: Water
Data Release Authorized: MB
Reported: 07/08/13

Project: NA
Event: 306444
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Method	Date	Units	SRM	True Value	Recovery
Chloride ERA #411010	SM4500-CLE	07/05/13	mg/L	5.1	5.0	102.0%
Total Organic Carbon ERA 0409-12-01	EPA 9060	07/01/13	mg/L	21.5	20.0	107.5%

306444

SAMPLE CHAIN OF CUSTODY

KJ 06-27-13

BT4/V4/D03

Page # _____ of _____

Send Report To MIKE STATON

Company SLR

Address 22118 20TH AVE SE, SUITE G202

City, State, ZIP BOTHELL, WA

Phone # 425-402-8800 Fax # _____

SAMPLERS (signature)

PROJECT NAME/NO. CROWLEY 101.0020S.0003D

PO#

REMARKS

TURNAROUND TIME
- ☑ Standard (2 Weeks)
- ☐ RUSH _____
- Rush charges authorized by _____

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☑ Will call with instructions

Lab ID	Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel w/ silica gel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	MERCURY 7471B	PAHs 8270D SIM	PCBs 8082A	TOTAL METALS (CRUBIUM + BA) 200.8	TOTAL SUSPENDED SOLIDS 2540D	CHLORINE SM4500	TOTAL ORGANIC CARBON 9060M	Notes
01 A-S	OF-1-062613	01 A-S	6/26/13	1355	WATER	19	X	X		X	X	X	X	X	X	X	X	X	
02	OF-2-062613	2	↓	1425	↓	↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	
03	OF-4-062613	3		1445															
04	OF-6-062613	4		1600															
05	OF-3-062613	5		1630															
06	OF-5-062613	6	↓	1645	↓	↓	↓	↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	GREG LIGHT	SLR	6/27/13	10:25
Received by: PKG	JORGE SALTER	POSTAL EXP.	6/27/13	10:25
Relinquished by:				
Received by:		Samples received at 1 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 21, 2013

Mike Staton
SLR International Corp.
22118 20th Ave. SE., G-202
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on July 23, 2013 from the 8th Avenue Terminals, Inc., Crowley RI/FS 101.00205.00030, F&BI 307331 project. There are 38 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michele Costales Poquiz

Michele Costales Poquiz
Chemist

Enclosures
SLR0821R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on July 23, 2013 by Friedman & Bruya, Inc. from the SLR International Corp. 8th Avenue Terminals, Inc., Crowley RI/FS 101.00205.00030, F&BI 307331 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
307331-01	IS-1
307331-02	IS-2
307331-03	IS-3
307331-04	IS-4

Total Petroleum Hydrocarbons as Diesel and Motor Oil by Method NWTPH-Dx with Silica Gel

All quality control requirements were acceptable.

Semivolatile Organic Compounds by EPA Method 8270D

The presence of bis(2-ethylhexyl) phthalate in the samples is likely due to laboratory contamination. The results have been flagged accordingly.

The estimated concentration calculated for bis(2-ethylhexyl) phthalate was above the valid instrument calibration range for the samples IS-1 and IS-2. The samples were diluted and reanalyzed. The results of the original analysis and the reanalysis are included.

The internal standard associated with benzyl butyl phthalate and bis(2-ethylhexyl) phthalate exceeded acceptance criteria for the sample IS-1. The results have been flagged accordingly.

The percent recovery for the matrix spike (MS), matrix spike duplicate (MSD), laboratory control sample (LCS), and laboratory control sample duplicate (LCSD) exceeded acceptance criteria for several compounds. In addition, the relative percent difference (RPD) for the LCS/LCSD and the MS/MSD failed high for several compounds. The results have been flagged accordingly.

Semivolatile Organic Compounds by EPA Method 8270D SIM

The samples were diluted due to matrix interferences. The reporting limits have been raised accordingly.

Polychlorinated Biphenyls as Aroclor 1016/1260 by EPA Method 8082A

The surrogate associated with Aroclors 1254 and 1260 is out of control limits for the sample IS-4. The reported concentration should be considered an estimate.

Total Metals by EPA Method 200.8

The internal standards associated with several analytes exceeded acceptance criteria for the samples IS-1, IS-2, IS-3, and IS-4. The samples were diluted and reanalyzed. The results from the original analysis and the re-analysis are included.

Total Mercury by EPA Method 1631E

All quality control requirements were acceptable.

Total Organic Carbon by EPA Method 9060M

The samples were sent to Analytical Resources, Inc. (ARI) for analysis. The report generated by ARI is enclosed.

Grain Size by ASTM D-422

The samples were sent to ARI for analysis. The report generated by ARI is enclosed.

Date of Report: 08/21/13
Date Received: 07/23/13
Project: 8th Avenue Terminals, Inc., Crowley RI/FS 101.00205.00030, F&BI 307331
Date Extracted: 07/29/13
Date Analyzed: 08/01/13 and 08/02/13

RESULTS FROM THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 53-144)
IS-1 307331-01	38 x	230	92
IS-2 307331-02 1/10	740 x	6,100	94
IS-3 307331-03	100 x	640	104
IS-4 307331-04	63 x	470	102
Method Blank 03-1483 MB	<2.8	<4.5	104

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	IS-1	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	307331-01
Date Analyzed:	08/08/13	Data File:	080804.D
Matrix:	Soil/Sediment	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	79	56	115
Phenol-d6	88	54	113
Nitrobenzene-d5	91	31	164
2-Fluorobiphenyl	93	47	133
2,4,6-Tribromophenol	109	35	141
Terphenyl-d14	103	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	0.0097	2,4,6-Trichlorophenol	<0.008
Bis(2-chloroethyl) ether	<0.0016	2,4,5-Trichlorophenol	<0.0096
2-Chlorophenol	<0.0062	2-Chloronaphthalene	<0.0014
1,3-Dichlorobenzene	<0.0026	2-Nitroaniline	<0.0026
1,4-Dichlorobenzene	<0.0024	Dimethyl phthalate	0.0071
1,2-Dichlorobenzene	<0.004	2,6-Dinitrotoluene	<0.0019
Benzyl alcohol	0.030	3-Nitroaniline	<0.017
Bis(2-chloroisopropyl) ether	<0.0016	2,4-Dinitrophenol	<0.014
2-Methylphenol	<0.0064	Dibenzofuran	0.0067
Hexachloroethane	<0.0032	2,4-Dinitrotoluene	<0.0016
N-Nitroso-di-n-propylamine	<0.003	4-Nitrophenol	<0.018
3-Methylphenol + 4-Methylphenol	<0.014	Diethyl phthalate	0.012
Nitrobenzene	<0.0026	4-Chlorophenyl phenyl ether	<0.0016
Isophorone	<0.0011	N-Nitrosodiphenylamine	<0.001
2-Nitrophenol	<0.0082	4-Nitroaniline	<0.018
2,4-Dimethylphenol	<0.019	4,6-Dinitro-2-methylphenol	<0.011
Benzoic acid	<0.054	4-Bromophenyl phenyl ether	<0.0016
Bis(2-chloroethoxy)methane	<0.0014	Hexachlorobenzene	<0.001
2,4-Dichlorophenol	<0.0058	Pentachlorophenol	0.024 jl
1,2,4-Trichlorobenzene	<0.0034	Carbazole	0.025
Hexachlorobutadiene	<0.002	Di-n-butyl phthalate	<0.02
4-Chloroaniline	<0.18	Benzyl butyl phthalate	0.024
4-Chloro-3-methylphenol	<0.0044	Bis(2-ethylhexyl) phthalate	1.4 ve fc
2-Methylnaphthalene	0.0058	Di-n-octyl phthalate	<0.0032
Hexachlorocyclopentadiene	<0.0022		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	IS-1	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	307331-01 1/50
Date Analyzed:	08/05/13	Data File:	080505.D
Matrix:	Soil/Sediment	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	63 ds	56	115
Phenol-d6	68 ds	54	113
Nitrobenzene-d5	77 ds	31	164
2-Fluorobiphenyl	91 ds	47	133
2,4,6-Tribromophenol	71 ds	35	141
Terphenyl-d14	92 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.27	2,4,6-Trichlorophenol	<0.4
Bis(2-chloroethyl) ether	<0.079	2,4,5-Trichlorophenol	<0.48
2-Chlorophenol	<0.31	2-Chloronaphthalene	<0.072
1,3-Dichlorobenzene	<0.13	2-Nitroaniline	<0.13
1,4-Dichlorobenzene	<0.12	Dimethyl phthalate	<0.06
1,2-Dichlorobenzene	<0.2	2,6-Dinitrotoluene	<0.094
Benzyl alcohol	<0.25	3-Nitroaniline	<0.87
Bis(2-chloroisopropyl) ether	<0.079	2,4-Dinitrophenol	<0.69
2-Methylphenol	<0.32	Dibenzofuran	<0.051
Hexachloroethane	<0.16	2,4-Dinitrotoluene	<0.079
N-Nitroso-di-n-propylamine	<0.15	4-Nitrophenol	<0.89
3-Methylphenol + 4-Methylphenol	<0.72	Diethyl phthalate	<0.2
Nitrobenzene	<0.13	4-Chlorophenyl phenyl ether	<0.079
Isophorone	<0.056	N-Nitrosodiphenylamine	<0.051
2-Nitrophenol	<0.41	4-Nitroaniline	<0.91
2,4-Dimethylphenol	<0.93	4,6-Dinitro-2-methylphenol	<0.53
Benzoic acid	<2.7	4-Bromophenyl phenyl ether	<0.082
Bis(2-chloroethoxy)methane	<0.072	Hexachlorobenzene	<0.051
2,4-Dichlorophenol	<0.29	Pentachlorophenol	<0.31
1,2,4-Trichlorobenzene	<0.17	Carbazole	<0.1
Hexachlorobutadiene	<0.1	Di-n-butyl phthalate	<1
4-Chloroaniline	<8.9	Benzyl butyl phthalate	<0.29 J
4-Chloro-3-methylphenol	<0.22	Bis(2-ethylhexyl) phthalate	2.0 J fc
2-Methylnaphthalene	<0.051	Di-n-octyl phthalate	<0.16
Hexachlorocyclopentadiene	<0.11		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	IS-2	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	307331-02
Date Analyzed:	08/08/13	Data File:	080805.D
Matrix:	Soil/Sediment	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	75	56	115
Phenol-d6	81	54	113
Nitrobenzene-d5	85	31	164
2-Fluorobiphenyl	88	47	133
2,4,6-Tribromophenol	102	35	141
Terphenyl-d14	100	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	0.057	2,4,6-Trichlorophenol	<0.008
Bis(2-chloroethyl) ether	<0.0016	2,4,5-Trichlorophenol	<0.0096
2-Chlorophenol	<0.0062	2-Chloronaphthalene	<0.0014
1,3-Dichlorobenzene	<0.0026	2-Nitroaniline	<0.0026
1,4-Dichlorobenzene	<0.0024	Dimethyl phthalate	0.017
1,2-Dichlorobenzene	<0.004	2,6-Dinitrotoluene	<0.0019
Benzyl alcohol	0.028	3-Nitroaniline	<0.017
Bis(2-chloroisopropyl) ether	<0.0016	2,4-Dinitrophenol	<0.014
2-Methylphenol	<0.0064	Dibenzofuran	0.018
Hexachloroethane	<0.0032	2,4-Dinitrotoluene	<0.0016
N-Nitroso-di-n-propylamine	<0.003	4-Nitrophenol	<0.018
3-Methylphenol + 4-Methylphenol	<0.014	Diethyl phthalate	0.055
Nitrobenzene	<0.0026	4-Chlorophenyl phenyl ether	<0.0016
Isophorone	<0.0011	N-Nitrosodiphenylamine	<0.001
2-Nitrophenol	<0.0082	4-Nitroaniline	<0.018
2,4-Dimethylphenol	<0.019	4,6-Dinitro-2-methylphenol	<0.011
Benzoic acid	<0.054	4-Bromophenyl phenyl ether	<0.0016
Bis(2-chloroethoxy)methane	<0.0014	Hexachlorobenzene	<0.001
2,4-Dichlorophenol	<0.0058	Pentachlorophenol	0.031 jl
1,2,4-Trichlorobenzene	<0.0034	Carbazole	0.087
Hexachlorobutadiene	<0.002	Di-n-butyl phthalate	0.069
4-Chloroaniline	<0.18	Benzyl butyl phthalate	0.082
4-Chloro-3-methylphenol	<0.0044	Bis(2-ethylhexyl) phthalate	0.55 fc
2-Methylnaphthalene	0.011	Di-n-octyl phthalate	<0.0032
Hexachlorocyclopentadiene	<0.0022		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	IS-3	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	307331-03
Date Analyzed:	08/08/13	Data File:	080806.D
Matrix:	Soil/Sediment	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	78	56	115
Phenol-d6	84	54	113
Nitrobenzene-d5	88	31	164
2-Fluorobiphenyl	84	47	133
2,4,6-Tribromophenol	111	35	141
Terphenyl-d14	95	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	0.0085	2,4,6-Trichlorophenol	<0.008
Bis(2-chloroethyl) ether	<0.0016	2,4,5-Trichlorophenol	<0.0096
2-Chlorophenol	<0.0062	2-Chloronaphthalene	<0.0014
1,3-Dichlorobenzene	<0.0026	2-Nitroaniline	<0.0026
1,4-Dichlorobenzene	<0.0024	Dimethyl phthalate	0.013
1,2-Dichlorobenzene	<0.004	2,6-Dinitrotoluene	<0.0019
Benzyl alcohol	0.041	3-Nitroaniline	<0.017
Bis(2-chloroisopropyl) ether	<0.0016	2,4-Dinitrophenol	<0.014
2-Methylphenol	<0.0064	Dibenzofuran	0.0064
Hexachloroethane	<0.0032	2,4-Dinitrotoluene	<0.0016
N-Nitroso-di-n-propylamine	<0.003	4-Nitrophenol	<0.018
3-Methylphenol + 4-Methylphenol	<0.014	Diethyl phthalate	0.076
Nitrobenzene	<0.0026	4-Chlorophenyl phenyl ether	<0.0016
Isophorone	<0.0011	N-Nitrosodiphenylamine	<0.001
2-Nitrophenol	<0.0082	4-Nitroaniline	<0.018
2,4-Dimethylphenol	<0.019	4,6-Dinitro-2-methylphenol	<0.011
Benzoic acid	0.063	4-Bromophenyl phenyl ether	<0.0016
Bis(2-chloroethoxy)methane	<0.0014	Hexachlorobenzene	<0.001
2,4-Dichlorophenol	<0.0058	Pentachlorophenol	0.033 jl
1,2,4-Trichlorobenzene	<0.0034	Carbazole	0.023
Hexachlorobutadiene	<0.002	Di-n-butyl phthalate	0.037
4-Chloroaniline	<0.18	Benzyl butyl phthalate	0.040
4-Chloro-3-methylphenol	<0.0044	Bis(2-ethylhexyl) phthalate	0.86 ve fc
2-Methylnaphthalene	0.0044	Di-n-octyl phthalate	<0.0032
Hexachlorocyclopentadiene	<0.0022		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	IS-3	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	307331-03 1/50
Date Analyzed:	08/05/13	Data File:	080507.D
Matrix:	Soil/Sediment	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	71 ds	56	115
Phenol-d6	67 ds	54	113
Nitrobenzene-d5	76 ds	31	164
2-Fluorobiphenyl	76 ds	47	133
2,4,6-Tribromophenol	72 ds	35	141
Terphenyl-d14	82 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.27	2,4,6-Trichlorophenol	<0.4
Bis(2-chloroethyl) ether	<0.079	2,4,5-Trichlorophenol	<0.48
2-Chlorophenol	<0.31	2-Chloronaphthalene	<0.072
1,3-Dichlorobenzene	<0.13	2-Nitroaniline	<0.13
1,4-Dichlorobenzene	<0.12	Dimethyl phthalate	<0.06
1,2-Dichlorobenzene	<0.2	2,6-Dinitrotoluene	<0.094
Benzyl alcohol	<0.25	3-Nitroaniline	<0.87
Bis(2-chloroisopropyl) ether	<0.079	2,4-Dinitrophenol	<0.69
2-Methylphenol	<0.32	Dibenzofuran	<0.051
Hexachloroethane	<0.16	2,4-Dinitrotoluene	<0.079
N-Nitroso-di-n-propylamine	<0.15	4-Nitrophenol	<0.89
3-Methylphenol + 4-Methylphenol	<0.72	Diethyl phthalate	<0.2
Nitrobenzene	<0.13	4-Chlorophenyl phenyl ether	<0.079
Isophorone	<0.056	N-Nitrosodiphenylamine	<0.051
2-Nitrophenol	<0.41	4-Nitroaniline	<0.91
2,4-Dimethylphenol	<0.93	4,6-Dinitro-2-methylphenol	<0.53
Benzoic acid	<2.7	4-Bromophenyl phenyl ether	<0.082
Bis(2-chloroethoxy)methane	<0.072	Hexachlorobenzene	<0.051
2,4-Dichlorophenol	<0.29	Pentachlorophenol	<0.31
1,2,4-Trichlorobenzene	<0.17	Carbazole	<0.1
Hexachlorobutadiene	<0.1	Di-n-butyl phthalate	<1
4-Chloroaniline	<8.9	Benzyl butyl phthalate	<0.29
4-Chloro-3-methylphenol	<0.22	Bis(2-ethylhexyl) phthalate	1.2 fc
2-Methylnaphthalene	<0.051	Di-n-octyl phthalate	<0.16
Hexachlorocyclopentadiene	<0.11		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	IS-4	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	307331-04 1/50
Date Analyzed:	08/05/13	Data File:	080508.D
Matrix:	Soil/Sediment	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	58 ds	56	115
Phenol-d6	63 ds	54	113
Nitrobenzene-d5	68 ds	31	164
2-Fluorobiphenyl	68 ds	47	133
2,4,6-Tribromophenol	82 ds	35	141
Terphenyl-d14	77 ds	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.27	2,4,6-Trichlorophenol	<0.4
Bis(2-chloroethyl) ether	<0.079	2,4,5-Trichlorophenol	<0.48
2-Chlorophenol	<0.31	2-Chloronaphthalene	<0.072
1,3-Dichlorobenzene	<0.13	2-Nitroaniline	<0.13
1,4-Dichlorobenzene	<0.12	Dimethyl phthalate	<0.06
1,2-Dichlorobenzene	<0.2	2,6-Dinitrotoluene	<0.094
Benzyl alcohol	<0.25	3-Nitroaniline	<0.87
Bis(2-chloroisopropyl) ether	<0.079	2,4-Dinitrophenol	<0.69
2-Methylphenol	<0.32	Dibenzofuran	<0.051
Hexachloroethane	<0.16	2,4-Dinitrotoluene	<0.079
N-Nitroso-di-n-propylamine	<0.15	4-Nitrophenol	<0.89
3-Methylphenol + 4-Methylphenol	<0.72	Diethyl phthalate	<0.2
Nitrobenzene	<0.13	4-Chlorophenyl phenyl ether	<0.079
Isophorone	<0.056	N-Nitrosodiphenylamine	<0.051
2-Nitrophenol	<0.41	4-Nitroaniline	<0.91
2,4-Dimethylphenol	<0.93	4,6-Dinitro-2-methylphenol	<0.53
Benzoic acid	<2.7	4-Bromophenyl phenyl ether	<0.082
Bis(2-chloroethoxy)methane	<0.072	Hexachlorobenzene	<0.051
2,4-Dichlorophenol	<0.29	Pentachlorophenol	<0.31
1,2,4-Trichlorobenzene	<0.17	Carbazole	<0.1
Hexachlorobutadiene	<0.1	Di-n-butyl phthalate	<1
4-Chloroaniline	<8.9	Benzyl butyl phthalate	<0.29
4-Chloro-3-methylphenol	<0.22	Bis(2-ethylhexyl) phthalate	<0.67
2-Methylnaphthalene	<0.051	Di-n-octyl phthalate	<0.16
Hexachlorocyclopentadiene	<0.11		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	03-1489 mb
Date Analyzed:	08/05/13	Data File:	080504.D
Matrix:	Soil/Sediment	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	89	32	162
Phenol-d6	91	10	170
Nitrobenzene-d5	100	50	150
2-Fluorobiphenyl	103	43	158
2,4,6-Tribromophenol	119	43	146
Terphenyl-d14	110	39	168

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.0054	2,4,6-Trichlorophenol	<0.008
Bis(2-chloroethyl) ether	<0.0016	2,4,5-Trichlorophenol	<0.0096
2-Chlorophenol	<0.0062	2-Chloronaphthalene	<0.0014
1,3-Dichlorobenzene	<0.0026	2-Nitroaniline	<0.0026
1,4-Dichlorobenzene	<0.0024	Dimethyl phthalate	<0.0012
1,2-Dichlorobenzene	<0.004	2,6-Dinitrotoluene	<0.0019
Benzyl alcohol	<0.005	3-Nitroaniline	<0.017
Bis(2-chloroisopropyl) ether	<0.0016	2,4-Dinitrophenol	<0.014
2-Methylphenol	<0.0064	Dibenzofuran	<0.001
Hexachloroethane	<0.0032	2,4-Dinitrotoluene	<0.0016
N-Nitroso-di-n-propylamine	<0.003	4-Nitrophenol	<0.018
3-Methylphenol + 4-Methylphenol	<0.014	Diethyl phthalate	<0.004
Nitrobenzene	<0.0026	4-Chlorophenyl phenyl ether	<0.0016
Isophorone	<0.0011	N-Nitrosodiphenylamine	<0.001
2-Nitrophenol	<0.0082	4-Nitroaniline	<0.018
2,4-Dimethylphenol	<0.019	4,6-Dinitro-2-methylphenol	<0.011
Benzoic acid	<0.054	4-Bromophenyl phenyl ether	<0.0016
Bis(2-chloroethoxy)methane	<0.0014	Hexachlorobenzene	<0.001
2,4-Dichlorophenol	<0.0058	Pentachlorophenol	<0.0062 j
1,2,4-Trichlorobenzene	<0.0034	Carbazole	<0.002
Hexachlorobutadiene	<0.002	Di-n-butyl phthalate	<0.02
4-Chloroaniline	<0.18	Benzyl butyl phthalate	<0.0058
4-Chloro-3-methylphenol	<0.0044	Bis(2-ethylhexyl) phthalate	<0.013
2-Methylnaphthalene	<0.001	Di-n-octyl phthalate	<0.0032
Hexachlorocyclopentadiene	<0.0022		

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	IS-1	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	307331-01 1/50
Date Analyzed:	08/02/13	Data File:	080209.D
Matrix:	Soil/Sediment	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	97 ds	50	150
Benzo(a)anthracene-d12	55 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.011
Acenaphthylene	<0.0046
Acenaphthene	<0.007
Fluorene	0.0078
Phenanthrene	0.11
Anthracene	0.036
Fluoranthene	0.54
Pyrene	0.51
Benz(a)anthracene	0.24
Chrysene	0.33
Benzo(a)pyrene	0.17
Benzo(b)fluoranthene	0.28
Benzo(k)fluoranthene	0.13
Indeno(1,2,3-cd)pyrene	0.11
Dibenz(a,h)anthracene	0.027
Benzo(g,h,i)perylene	0.089

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	IS-2	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	307331-02 1/50
Date Analyzed:	08/02/13	Data File:	080210.D
Matrix:	Soil/Sediment	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	150 ds	50	150
Benzo(a)anthracene-d12	106 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.011
Acenaphthylene	0.0093
Acenaphthene	<0.007
Fluorene	0.012
Phenanthrene	0.13
Anthracene	0.043
Fluoranthene	0.32
Pyrene	0.31
Benz(a)anthracene	0.13
Chrysene	0.20
Benzo(a)pyrene	0.099
Benzo(b)fluoranthene	0.27
Benzo(k)fluoranthene	0.074
Indeno(1,2,3-cd)pyrene	0.078
Dibenz(a,h)anthracene	<0.017
Benzo(g,h,i)perylene	0.068

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	IS-3	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	307331-03 1/50
Date Analyzed:	08/02/13	Data File:	080211.D
Matrix:	Soil/Sediment	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	157 ds	50	150
Benzo(a)anthracene-d12	79 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.011
Acenaphthylene	0.013
Acenaphthene	0.0082
Fluorene	0.0096
Phenanthrene	0.11
Anthracene	0.038
Fluoranthene	0.42
Pyrene	0.34
Benz(a)anthracene	0.13
Chrysene	0.28
Benzo(a)pyrene	0.093
Benzo(b)fluoranthene	0.24
Benzo(k)fluoranthene	0.079
Indeno(1,2,3-cd)pyrene	0.079
Dibenz(a,h)anthracene	<0.017
Benzo(g,h,i)perylene	0.074

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	IS-4	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	307331-04 1/50
Date Analyzed:	08/02/13	Data File:	080212.D
Matrix:	Soil/Sediment	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	180 ds	50	150
Benzo(a)anthracene-d12	100 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.011
Acenaphthylene	0.018
Acenaphthene	0.010
Fluorene	0.011
Phenanthrene	0.24
Anthracene	0.056
Fluoranthene	0.52
Pyrene	0.49
Benz(a)anthracene	0.16
Chrysene	0.33
Benzo(a)pyrene	0.16
Benzo(b)fluoranthene	0.33
Benzo(k)fluoranthene	0.11
Indeno(1,2,3-cd)pyrene	0.17
Dibenz(a,h)anthracene	0.034
Benzo(g,h,i)perylene	0.17

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	03-1488 mb
Date Analyzed:	08/02/13	Data File:	080205.D
Matrix:	Soil/Sediment	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	91	50	150
Benzo(a)anthracene-d12	115	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.00022
Acenaphthylene	<0.000091
Acenaphthene	<0.00014
Fluorene	<0.00015
Phenanthrene	<0.00032
Anthracene	<0.000088
Fluoranthene	<0.00028
Pyrene	<0.00026
Benz(a)anthracene	<0.00018
Chrysene	<0.00019
Benzo(a)pyrene	<0.00022
Benzo(b)fluoranthene	<0.00018
Benzo(k)fluoranthene	<0.00036
Indeno(1,2,3-cd)pyrene	<0.00062
Dibenz(a,h)anthracene	<0.00034
Benzo(g,h,i)perylene	<0.00034

Analysis For PCBs By EPA Method 8082

Client Sample ID:	IS-1	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/15/13	Lab ID:	307331-01
Date Analyzed:	08/16/13	Data File:	26.D\ECD1A.CH
Matrix:	Soil/Sediment	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	124	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.033
Aroclor 1232	<0.033
Aroclor 1016	<0.033
Aroclor 1242	<0.033
Aroclor 1248	<0.033
Aroclor 1254	0.16
Aroclor 1260	0.19

Analysis For PCBs By EPA Method 8082

Client Sample ID:	IS-2	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/15/13	Lab ID:	307331-02
Date Analyzed:	08/16/13	Data File:	18.D\ECD1A.CH
Matrix:	Soil/Sediment	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	109	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.033
Aroclor 1232	<0.033
Aroclor 1016	<0.033
Aroclor 1242	<0.033
Aroclor 1248	<0.033
Aroclor 1254	0.09
Aroclor 1260	0.13

Analysis For PCBs By EPA Method 8082

Client Sample ID:	IS-3	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/15/13	Lab ID:	307331-03
Date Analyzed:	08/16/13	Data File:	20.D\ECD1A.CH
Matrix:	Soil/Sediment	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	108	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.033
Aroclor 1232	<0.033
Aroclor 1016	<0.033
Aroclor 1242	<0.033
Aroclor 1248	<0.033
Aroclor 1254	0.18
Aroclor 1260	0.20

Analysis For PCBs By EPA Method 8082

Client Sample ID:	IS-4	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/15/13	Lab ID:	307331-04
Date Analyzed:	08/16/13	Data File:	22.D\ECD1A.CH
Matrix:	Soil/Sediment	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	160 vo	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.033
Aroclor 1232	<0.033
Aroclor 1016	<0.033
Aroclor 1242	<0.033
Aroclor 1248	<0.033
Aroclor 1254	0.34 js
Aroclor 1260	0.56 js

Analysis For PCBs By EPA Method 8082

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/15/13	Lab ID:	03-1599 mb
Date Analyzed:	08/16/13	Data File:	12.D\ECD1A.CH
Matrix:	Soil/Sediment	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	113	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.033
Aroclor 1232	<0.033
Aroclor 1016	<0.033
Aroclor 1242	<0.033
Aroclor 1248	<0.033
Aroclor 1254	<0.033
Aroclor 1260	<0.033

Analysis For Total Metals By EPA Method 200.8

Client ID:	IS-1	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/02/13	Lab ID:	307331-01
Date Analyzed:	08/14/13	Data File:	307331-01.019
Matrix:	Soil/Sediment	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	141 vo	60	125
Indium	96	60	125
Holmium	99	60	125

Analyte:	Concentration mg/kg (ppm)
Selenium	<0.920
Cadmium	<0.200
Thallium	<0.0440

Analysis For Total Metals By EPA Method 200.8

Client ID:	IS-1	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/02/13	Lab ID:	307331-01 x10
Date Analyzed:	08/14/13	Data File:	307331-01 x10.039
Matrix:	Soil/Sediment	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	94	60	125
Indium	94	60	125
Holmium	99	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.860
Chromium	45.7
Nickel	49.0
Copper	88.6
Zinc	145
Arsenic	28.6
Selenium	<9.20
Silver	<0.780
Cadmium	<2.00
Antimony	13.5
Barium	73.8
Thallium	<0.440
Lead	27.4

Analysis For Total Metals By EPA Method 200.8

Client ID:	IS-2	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/02/13	Lab ID:	307331-02
Date Analyzed:	08/14/13	Data File:	307331-02.022
Matrix:	Soil/Sediment	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	160 vo	60	125
Indium	88	60	125
Holmium	90	60	125

Analyte:	Concentration mg/kg (ppm)
Selenium	<0.920
Cadmium	0.672
Thallium	0.138

Analysis For Total Metals By EPA Method 200.8

Client ID:	IS-2	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/02/13	Lab ID:	307331-02 x10
Date Analyzed:	08/14/13	Data File:	307331-02 x10.042
Matrix:	Soil/Sediment	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	88	60	125
Indium	84	60	125
Holmium	88	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.860
Chromium	40.3
Nickel	27.7
Copper	88.7
Zinc	388
Arsenic	26.2
Selenium	<9.20
Silver	<0.780
Cadmium	<2.00
Antimony	3.30
Barium	81.2
Thallium	<0.440
Lead	74.5

Analysis For Total Metals By EPA Method 200.8

Client ID:	IS-3	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/02/13	Lab ID:	307331-03
Date Analyzed:	08/14/13	Data File:	307331-03.023
Matrix:	Soil/Sediment	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	148 vo	60	125
Indium	89	60	125
Holmium	92	60	125

Analyte:	Concentration mg/kg (ppm)
Selenium	<0.920
Cadmium	0.562
Thallium	0.0957

Analysis For Total Metals By EPA Method 200.8

Client ID:	IS-3	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/02/13	Lab ID:	307331-03 x10
Date Analyzed:	08/14/13	Data File:	307331-03 x10.043
Matrix:	Soil/Sediment	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	93	60	125
Indium	93	60	125
Holmium	98	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.860
Chromium	33.6
Nickel	23.8
Copper	68.5
Zinc	209
Arsenic	19.0
Selenium	<9.20
Silver	<0.780
Cadmium	<2.00
Antimony	<1.06
Barium	86.0
Thallium	<0.440
Lead	45.7

Analysis For Total Metals By EPA Method 200.8

Client ID:	IS-4	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/02/13	Lab ID:	307331-04
Date Analyzed:	08/14/13	Data File:	307331-04.024
Matrix:	Soil/Sediment	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	168 vo	60	125
Indium	91	60	125
Holmium	93	60	125

Analyte:	Concentration mg/kg (ppm)
Selenium	<0.920
Cadmium	0.669
Thallium	<0.0440

Analysis For Total Metals By EPA Method 200.8

Client ID:	IS-4	Client:	SLR International Corp.
Date Received:	07/23/13	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/02/13	Lab ID:	307331-04 x10
Date Analyzed:	08/14/13	Data File:	307331-04 x10.044
Matrix:	Soil/Sediment	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	92	60	125
Indium	91	60	125
Holmium	96	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.860
Chromium	38.8
Nickel	29.8
Copper	110
Zinc	398
Arsenic	30.0
Selenium	<9.20
Silver	<0.780
Cadmium	<2.00
Antimony	5.67
Barium	96.7
Thallium	<0.440
Lead	96.5

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RI/FS 101.00205.00030
Date Extracted:	08/02/13	Lab ID:	I3-476 mb
Date Analyzed:	08/14/13	Data File:	I3-476 mb.016
Matrix:	Soil/Sediment	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	80	60	125
Indium	87	60	125
Holmium	87	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.0860
Chromium	<0.480
Nickel	<0.200
Copper	<0.0720
Zinc	<0.980
Arsenic	<0.420
Selenium	<0.920
Silver	<0.0780
Cadmium	<0.200
Antimony	<0.106
Barium	<0.0520
Thallium	<0.0440
Lead	<0.0500

Date of Report: 08/21/13
Date Received: 07/23/13
Project: 8th Avenue Terminals, Inc., Crowley RI/FS 101.00205.00030, F&BI 307331
Date Extracted: 08/02/13
Date Analyzed: 08/05/13

RESULTS FROM THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
IS-1 307331-01	0.13
IS-2 307331-02	0.10
IS-3 307331-03	0.13
IS-4 307331-04	0.16
Method Blank	<0.002

Date of Report: 08/21/13
Date Received: 07/23/13
Project: 8th Avenue Terminals, Inc., Crowley RI/FS 101.00205.00030, F&BI 307331

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 307331-04 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	500	160	109	109	64-133	0

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	500	126	58-147

Date of Report: 08/21/13
Date Received: 07/23/13
Project: 8th Avenue Terminals, Inc., Crowley RI/FS 101.00205.00030, F&BI 307331

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D

Laboratory Code: 307331-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Phenol	mg/kg (ppm)	1.7	<0.0054	74	94	50-150	24 vo
Bis(2-chloroethyl) ether	mg/kg (ppm)	1.7	<0.00158	65	84	50-150	26 vo
2-Chlorophenol	mg/kg (ppm)	1.7	<0.0062	76	87	50-150	13
1,3-Dichlorobenzene	mg/kg (ppm)	1.7	<0.0026	41 vo	63	50-150	42 vo
1,4-Dichlorobenzene	mg/kg (ppm)	1.7	<0.0024	40 vo	65	50-150	48 vo
1,2-Dichlorobenzene	mg/kg (ppm)	1.7	<0.004	45 vo	67	50-150	39 vo
Benzyl alcohol	mg/kg (ppm)	1.7	0.019326	65	70	50-150	7
Bis(2-chloroisopropyl) ether	mg/kg (ppm)	1.7	<0.00158	49 vo	65	50-150	28 vo
2-Methylphenol	mg/kg (ppm)	1.7	<0.0064	87	92	50-150	6
Hexachloroethane	mg/kg (ppm)	1.7	<0.0032	12 vo	10 vo	50-150	18
N-Nitroso-di-n-propylamine	mg/kg (ppm)	1.7	<0.003	77	81	50-150	5
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	1.7	<0.0144	91	100	50-150	9
Nitrobenzene	mg/kg (ppm)	1.7	<0.0026	75	87	50-150	15
Isophorone	mg/kg (ppm)	1.7	<0.00112	77	88	50-150	13
2-Nitrophenol	mg/kg (ppm)	1.7	<0.0082	71	32 vo	50-150	76 vo
2,4-Dimethylphenol	mg/kg (ppm)	1.7	<0.0186	91	102	50-150	11
Benzoic acid	mg/kg (ppm)	2.5	<0.054	64	40 vo	50-150	46 vo
Bis(2-chloroethoxy)methane	mg/kg (ppm)	1.7	<0.00144	79	91	50-150	14
2,4-Dichlorophenol	mg/kg (ppm)	1.7	<0.0058	102	110	50-150	8
1,2,4-Trichlorobenzene	mg/kg (ppm)	1.7	<0.0034	65	84	50-150	26 vo
Hexachlorobutadiene	mg/kg (ppm)	1.7	<0.002	59	84	50-150	35 vo
4-Chloroaniline	mg/kg (ppm)	3.3	<0.178	12 vo	13 vo	50-150	8
4-Chloro-3-methylphenol	mg/kg (ppm)	1.7	<0.0044	111	110	50-150	1
2-Methylnaphthalene	mg/kg (ppm)	1.7	0.002083	78	94	50-150	19
Hexachlorocyclopentadiene	mg/kg (ppm)	1.7	<0.0022	0 vo	0 vo	50-150	
2,4,6-Trichlorophenol	mg/kg (ppm)	1.7	<0.008	110	112	50-150	2
2,4,5-Trichlorophenol	mg/kg (ppm)	1.7	<0.0096	96	107	50-150	11
2-Chloronaphthalene	mg/kg (ppm)	1.7	<0.00144	82	98	50-150	18
2-Nitroaniline	mg/kg (ppm)	1.7	<0.0026	94	107	50-150	13
Dimethyl phthalate	mg/kg (ppm)	1.7	0.006248	84	99	50-150	16
2,6-Dinitrotoluene	mg/kg (ppm)	1.7	<0.00188	79	57	50-150	32 vo
3-Nitroaniline	mg/kg (ppm)	3.3	<0.0174	10 vo	36 vo	50-150	113 vo
2,4-Dinitrophenol	mg/kg (ppm)	1.7	<0.0138	20 vo	14 vo	50-150	35 vo
Dibenzofuran	mg/kg (ppm)	1.7	0.002999	85	97	50-150	13
2,4-Dinitrotoluene	mg/kg (ppm)	1.7	<0.00158	84	50	50-150	51 vo
4-Nitrophenol	mg/kg (ppm)	1.7	<0.0178	40 vo	15 vo	50-150	91 vo
Diethyl phthalate	mg/kg (ppm)	1.7	0.035569	82	74	50-150	10
4-Chlorophenyl phenyl ether	mg/kg (ppm)	1.7	<0.00158	86	99	50-150	14
N-Nitrosodiphenylamine	mg/kg (ppm)	1.7	<0.00102	86	103	50-150	18
4-Nitroaniline	mg/kg (ppm)	3.3	<0.0182	21 vo	55	50-150	89 vo
4,6-Dinitro-2-methylphenol	mg/kg (ppm)	1.7	<0.0106	17 vo	6 vo	50-150	96 vo
4-Bromophenyl phenyl ether	mg/kg (ppm)	1.7	<0.00164	91	108	50-150	17
Hexachlorobenzene	mg/kg (ppm)	1.7	<0.00102	89	105	50-150	16
Pentachlorophenol	mg/kg (ppm)	1.7	0.015494	105	105	50-150	0
Carbazole	mg/kg (ppm)	1.7	0.010996	79	86	50-150	8
Di-n-butyl phthalate	mg/kg (ppm)	1.7	<0.02	86	136	50-150	45 vo
Benzyl butyl phthalate	mg/kg (ppm)	1.7	0.018743	111	176 vo	50-150	45 vo
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	1.7	0.404255	-61	-165	50-150	
Di-n-octyl phthalate	mg/kg (ppm)	1.7	0.013994	73	91	50-150	22 vo

Date of Report: 08/21/13
Date Received: 07/23/13
Project: 8th Avenue Terminals, Inc., Crowley RI/FS 101.00205.00030, F&BI 307331

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	mg/kg (ppm)	1.7	98	91	51-119	7
Bis(2-chloroethyl) ether	mg/kg (ppm)	1.7	100	93	60-112	7
2-Chlorophenol	mg/kg (ppm)	1.7	96	90	59-114	6
1,3-Dichlorobenzene	mg/kg (ppm)	1.7	95	87	62-113	9
1,4-Dichlorobenzene	mg/kg (ppm)	1.7	96	88	61-114	9
1,2-Dichlorobenzene	mg/kg (ppm)	1.7	97	88	61-113	10
Benzyl alcohol	mg/kg (ppm)	1.7	103	97	50-119	6
Bis(2-chloroisopropyl) ether	mg/kg (ppm)	1.7	111	102	59-113	8
2-Methylphenol	mg/kg (ppm)	1.7	95	91	58-115	4
Hexachloroethane	mg/kg (ppm)	1.7	95	87	63-114	9
N-Nitroso-di-n-propylamine	mg/kg (ppm)	1.7	101	97	62-114	4
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	1.7	99	94	54-120	5
Nitrobenzene	mg/kg (ppm)	1.7	104	96	59-114	8
Isophorone	mg/kg (ppm)	1.7	109	102	61-113	7
2-Nitrophenol	mg/kg (ppm)	1.7	104	98	59-114	6
2,4-Dimethylphenol	mg/kg (ppm)	1.7	77	78	54-107	1
Benzoic acid	mg/kg (ppm)	2.5	127	112	43-150	13
Bis(2-chloroethoxy)methane	mg/kg (ppm)	1.7	104	96	60-114	8
2,4-Dichlorophenol	mg/kg (ppm)	1.7	106	98	57-118	8
1,2,4-Trichlorobenzene	mg/kg (ppm)	1.7	100	91	56-112	9
Hexachlorobutadiene	mg/kg (ppm)	1.7	103	93	60-116	10
4-Chloroaniline	mg/kg (ppm)	3.3	73	67	10-126	9
4-Chloro-3-methylphenol	mg/kg (ppm)	1.7	112	104	59-115	7
2-Methylnaphthalene	mg/kg (ppm)	1.7	106	99	60-115	7
Hexachlorocyclopentadiene	mg/kg (ppm)	1.7	108 vo	96	41-107	12
2,4,6-Trichlorophenol	mg/kg (ppm)	1.7	109	102	47-119	7
2,4,5-Trichlorophenol	mg/kg (ppm)	1.7	113	105	61-121	7
2-Chloronaphthalene	mg/kg (ppm)	1.7	104	99	58-114	5
2-Nitroaniline	mg/kg (ppm)	1.7	115	111	55-119	4
Dimethyl phthalate	mg/kg (ppm)	1.7	112	108	58-116	4
2,6-Dinitrotoluene	mg/kg (ppm)	1.7	113	110	57-119	3
3-Nitroaniline	mg/kg (ppm)	3.3	100	96	10-143	4
2,4-Dinitrophenol	mg/kg (ppm)	1.7	108	103	40-122	5
Dibenzofuran	mg/kg (ppm)	1.7	107	102	56-115	5
2,4-Dinitrotoluene	mg/kg (ppm)	1.7	120	116	53-126	3
4-Nitrophenol	mg/kg (ppm)	1.7	121	112	40-124	8
Diethyl phthalate	mg/kg (ppm)	1.7	109	104	57-116	5
4-Chlorophenyl phenyl ether	mg/kg (ppm)	1.7	109	104	54-119	5
N-Nitrosodiphenylamine	mg/kg (ppm)	1.7	104	103	54-113	1
4-Nitroaniline	mg/kg (ppm)	3.3	106	106	47-109	0
4,6-Dinitro-2-methylphenol	mg/kg (ppm)	1.7	113 vo	110 vo	57-108	3
4-Bromophenyl phenyl ether	mg/kg (ppm)	1.7	109	105	56-116	4
Hexachlorobenzene	mg/kg (ppm)	1.7	105	104	57-115	1
Pentachlorophenol	mg/kg (ppm)	1.7	125 vo	122	45-123	2
Carbazole	mg/kg (ppm)	1.7	105	104	57-116	1
Di-n-butyl phthalate	mg/kg (ppm)	1.7	118	114	56-118	3
Benzyl butyl phthalate	mg/kg (ppm)	1.7	119	113	56-122	5
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	1.7	122	116	56-125	5
Di-n-octyl phthalate	mg/kg (ppm)	1.7	106	96	58-120	10

Date of Report: 08/21/13
Date Received: 07/23/13
Project: 8th Avenue Terminals, Inc., Crowley RI/FS 101.00205.00030, F&BI 307331

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	85	90	58-121	6
Acenaphthylene	mg/kg (ppm)	0.17	93	98	54-121	5
Acenaphthene	mg/kg (ppm)	0.17	89	94	54-123	5
Fluorene	mg/kg (ppm)	0.17	94	98	56-127	4
Phenanthrene	mg/kg (ppm)	0.17	91	94	55-122	3
Anthracene	mg/kg (ppm)	0.17	88	92	50-120	4
Fluoranthene	mg/kg (ppm)	0.17	96	97	54-129	1
Pyrene	mg/kg (ppm)	0.17	98	104	53-127	6
Benz(a)anthracene	mg/kg (ppm)	0.17	91	92	51-115	1
Chrysene	mg/kg (ppm)	0.17	95	101	55-129	6
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	99	105	56-123	6
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	84	86	54-131	2
Benzo(a)pyrene	mg/kg (ppm)	0.17	78	80	51-118	3
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	90	94	49-148	4
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	88	91	50-141	3
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	87	91	52-131	4

Date of Report: 08/21/13
Date Received: 07/23/13
Project: 8th Avenue Terminals, Inc., Crowley RI/FS 101.00205.00030, F&BI 307331

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 307357-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	<0.033	<0.033	nm
Aroclor 1260	mg/kg (ppm)	<0.033	<0.033	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.8	88	93	70-130	6
Aroclor 1260	mg/kg (ppm)	0.8	92	95	70-130	3

Date of Report: 08/21/13
Date Received: 07/23/13
Project: 8th Avenue Terminals, Inc., Crowley RI/FS 101.00205.00030, F&BI 307331

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 307331-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	mg/kg (ppm)	5	0.155	74	62 vo	67-138	18
Chromium	mg/kg (ppm)	50	12.9	62 b	60 b	57-128	3 b
Nickel	mg/kg (ppm)	25	13.2	58 b	69 b	69-112	17 b
Copper	mg/kg (ppm)	50	24.7	61 b	61 b	57-120	0 b
Zinc	mg/kg (ppm)	50	42.6	78 b	61 b	55-129	24 b
Arsenic	mg/kg (ppm)	10	12.5	94 b	121 b	70-118	25 b
Selenium	mg/kg (ppm)	5	<0.920	88	85	64-117	3
Silver	mg/kg (ppm)	10	0.0990	103	107	73-122	4
Cadmium	mg/kg (ppm)	10	<0.200	106	108	83-116	2
Antimony	mg/kg (ppm)	20	0.722	69	73	54-116	6
Barium	mg/kg (ppm)	50	31.0	111 b	113 b	60-141	2 b
Thallium	mg/kg (ppm)	5	<0.0440	96	98	68-121	2
Lead	mg/kg (ppm)	50	11.6	107 b	107 b	59-148	0 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	mg/kg (ppm)	5	114	69-146
Chromium	mg/kg (ppm)	50	103	78-121
Nickel	mg/kg (ppm)	25	100	82-122
Copper	mg/kg (ppm)	50	99	82-119
Zinc	mg/kg (ppm)	50	100	81-120
Arsenic	mg/kg (ppm)	10	93	83-113
Selenium	mg/kg (ppm)	5	94	84-115
Silver	mg/kg (ppm)	10	100	81-116
Cadmium	mg/kg (ppm)	10	100	54-114
Antimony	mg/kg (ppm)	20	106	69-114
Barium	mg/kg (ppm)	50	98	85-116
Thallium	mg/kg (ppm)	5	96	77-123
Lead	mg/kg (ppm)	50	101	80-120

Date of Report: 08/21/13
Date Received: 07/23/13
Project: 8th Avenue Terminals, Inc., Crowley RI/FS 101.00205.00030, F&BI 307331

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 307331-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	0.125	0.13	101	100	62-140	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	0.125	100	63-131

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

August 5, 2013

Michele Costales Poquiz
Friedman & Bruya
3012 16th Ave W
Seattle, WA 98119

RE: Project: 307331
ARI Job No.: WY49

Dear Michele:

Please find enclosed the Chain-of-Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted four sediment samples on July 24, 2013, under ARI job WY49. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

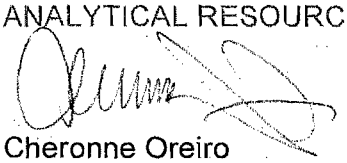
The samples were analyzed for TOC, as requested on the COC.

The matrix spike percent recovery of TOC fell outside the control limits low for sample **IS-1**. All other quality control parameters were met for this analysis. No corrective action was taken.

There were no other anomalies associated with the analysis of these samples.

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

Respectfully,
ANALYTICAL RESOURCES, INC.



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

cc: eFile WY49

Enclosures

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

WY49

SAMPLE CHAIN OF CUSTODY

Send Report To Michele Costales Poquiz

Company Friedman & Bruya, Inc.

Address 3012 16th Ave. W.

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

Email Address mpoquiz@friedmanandbruya.com

SUBCONTRACTOR
Analytical Resources, Inc. (ARI)

PROJECT NAME/NO.	PO #
307331	C-478

REMARKS

Please e-mail results

ELECTRONIC DATA REQUESTED (EIM)

Page # 1 of 1

TURNAROUND TIME
☒ Standard Turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Samples Received at ____ °C

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Hexavalent Cr by 7196A	Total Organic Carbon by 9060M				Notes
						ANALYSES REQUESTED											
IS-1		7/23/13	1225	Sediment	1								X				
IS-2		↓	1300	↓	↓								X				
IS-3		↓	1335	↓	↓								X				
IS-4		↓	1350	↓	↓								X				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michele Costales Poquiz	Michele Costales Poquiz	F&B	7/24/13	10:45 AM
Received by:		A. Volgarelson	ARI	7/24/13	1250
Relinquished by:					
Received by:					

FORMS\COC\COC SLRC.DOC

Analytical Resources, Incorporated
Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Friedman + Bruya

Project Name: _____

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other Postal Exp

Assigned ARI Job No: WY49

Tracking No: 45582446 (NA)

Preliminary Examination Phase:

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

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

If cooler temperature is out of compliance fill out form 00070F

Temp Gun ID#: 90877958

Cooler Accepted by: AV Date: 7/24/13 Time: 1250

Complete custody forms and attach all shipping documents

Log-In Phase:

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

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

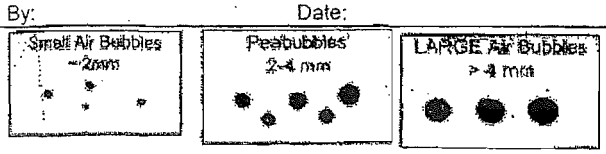
Samples Logged by: AV Date: 7/24/13 Time: 1427

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:



Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"

WY49: 00003

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WY49
Client: Friedman and Bruya, Inc
Project Event: 307331
Project Name: N/A

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	IS-1	WY49A	13-15490	Sediment	07/23/13 12:25	07/24/13 12:50
2.	IS-2	WY49B	13-15491	Sediment	07/23/13 13:00	07/24/13 12:50
3.	IS-3	WY49C	13-15492	Sediment	07/23/13 13:35	07/24/13 12:50
4.	IS-4	WY49D	13-15493	Sediment	07/23/13 13:50	07/24/13 12:50

SAMPLE RESULTS-CONVENTIONALS
WY49-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 08/02/13

Project: NA
Event: 307331
Date Sampled: 07/23/13
Date Received: 07/24/13

Client ID: IS-1
ARI ID: 13-15490 WY49A

Analyte	Date	Method	Units	RL	Sample
Total Solids	07/25/13 072513#1	SM2540B	Percent	0.01	42.28
Total Organic Carbon	08/02/13 080213#1	EPA 9060M	Percent	0.020	3.62

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WY49-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 08/02/13

Project: NA
Event: 307331
Date Sampled: 07/23/13
Date Received: 07/24/13

Client ID: IS-2
ARI ID: 13-15491 WY49B

Analyte	Date	Method	Units	RL	Sample
Total Solids	07/25/13 072513#1	SM2540B	Percent	0.01	55.98
Total Organic Carbon	08/02/13 080213#1	EPA 9060M	Percent	0.020	2.67

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WY49-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 08/02/13

Project: NA
Event: 307331
Date Sampled: 07/23/13
Date Received: 07/24/13

Client ID: IS-3
ARI ID: 13-15492 WY49C

Analyte	Date	Method	Units	RL	Sample
Total Solids	07/25/13 072513#1	SM2540B	Percent	0.01	46.00
Total Organic Carbon	08/02/13 080213#1	EPA 9060M	Percent	0.020	3.29

RL Analytical reporting limit
U Undetected at reported detection limit

SAMPLE RESULTS-CONVENTIONALS
WY49-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 08/02/13

Project: NA
Event: 307331
Date Sampled: 07/23/13
Date Received: 07/24/13

Client ID: IS-4
ARI ID: 13-15493 WY49D

Analyte	Date	Method	Units	RL	Sample
Total Solids	07/25/13 072513#1	SM2540B	Percent	0.01	49.89
Total Organic Carbon	08/02/13 080213#1	EPA 9060M	Percent	0.020	2.15

RL Analytical reporting limit
U Undetected at reported detection limit

MS/MSD RESULTS-CONVENTIONALS
WY49-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 08/02/13

Project: NA
Event: 307331
Date Sampled: 07/23/13
Date Received: 07/24/13

Analyte	Date	Units	Sample	Spike	Spike Added	Recovery
ARI ID: WY49A Client ID: IS-1						
Total Organic Carbon	08/02/13	Percent	3.62	6.28	4.03	66.1%

REPLICATE RESULTS-CONVENTIONALS
WY49-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 08/02/13

Project: NA
Event: 307331
Date Sampled: 07/23/13
Date Received: 07/24/13

Analyte	Date	Units	Sample	Replicate(s)	RPD/RSD
ARI ID: WY49A Client ID: IS-1					
Total Solids	07/25/13	Percent	42.28	43.26 42.16	1.4%
Total Organic Carbon	08/02/13	Percent	3.62	3.34 3.24	5.8%

LAB CONTROL RESULTS-CONVENTIONALS
WY49-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 08/02/13

Project: NA
Event: 307331
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Total Organic Carbon EPA 9060M	ICVL	08/02/13	Percent	0.094	0.100	94.0%

METHOD BLANK RESULTS-CONVENTIONALS
WY49-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 08/02/13

Project: NA
Event: 307331
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Total Solids	07/25/13	Percent	< 0.01 U	ICB
Total Organic Carbon	08/02/13	Percent	< 0.020 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
WY49-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 08/02/13

Project: NA
Event: 307331
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST 1941B	08/02/13	Percent	2.60	2.99	87.0%

Budinger & Associates

Geotechnical Engineering
Environmental Engineering
Construction Materials Testing
Subsurface Exploration
Special Inspection

Proudly serving the Inland Northwest for over 30 years

Michele Costales Porquiz
Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119

August 7, 2013

Project Number L13372

PROJECT: 307331 Soils
Seattle, WA

SUBJECT: Results of Laboratory Testing
Report # 1

At your request, we provided laboratory testing services for the subject project. Services were limited to the performance of specific laboratory tests, selected at your discretion.

For this period our involvement was limited to laboratory testing of four samples delivered to us on July 25, 2013. Laboratory tests were performed in general accordance with methods listed on the attached *Laboratory Summary* and *Particle Size Distribution* sheets.

If you have any questions, please call.

Respectfully Submitted,
BUDINGER & ASSOCIATES, INC.

Kyle L. Sanford
Mgr. Construction Services

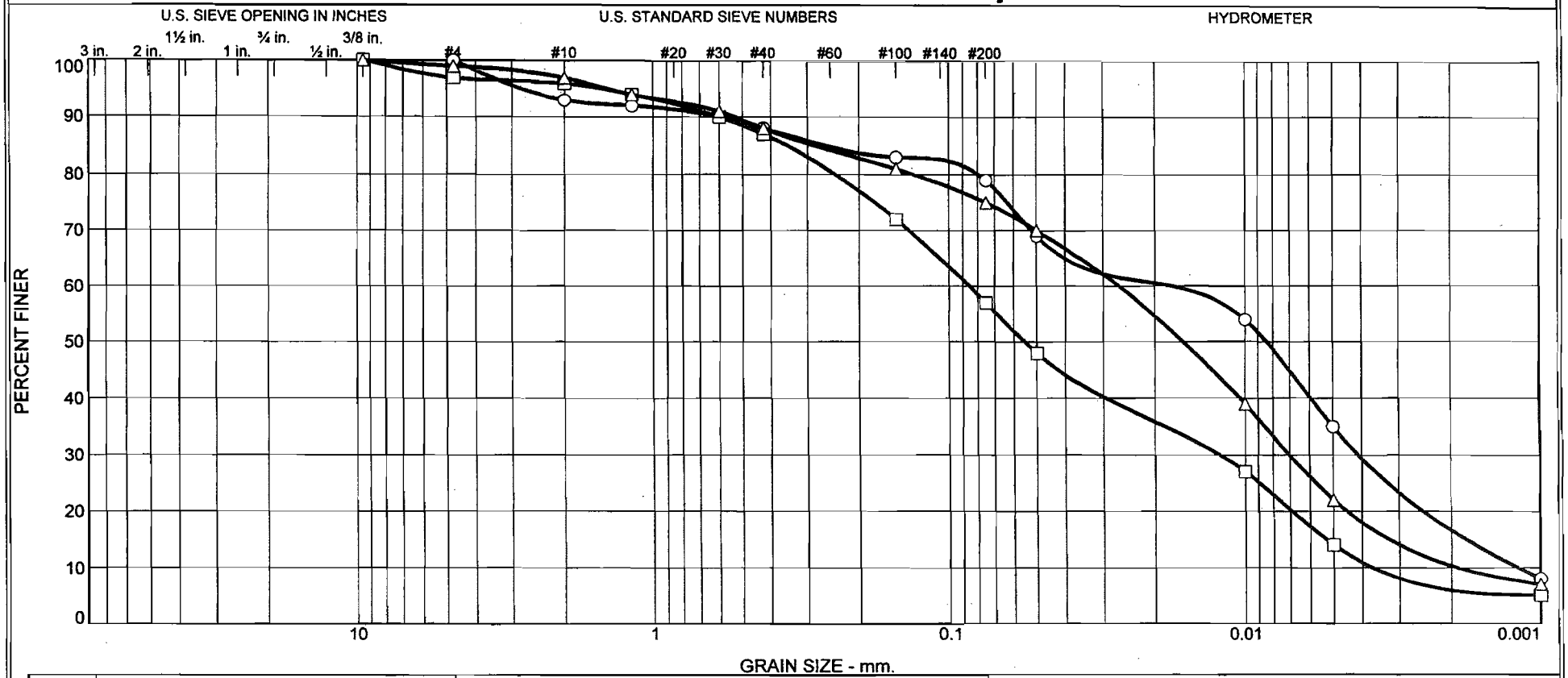
KLS/kh
Addressee – 2
Attachments:
- Soils - Laboratory Summary (1 page)
- Particle Size Distribution (2 pages)

1101 North Fancher Road
Spokane Valley, WA 99212
Tel: 509-535-8841
Fax:509-535-9589

SOILS
LABORATORY SUMMARY

LABORATORY NUMBER				13-0633	13-0634	13-0635	13-0636
SAMPLE NUMBER				1	2	3	4
SAMPLED BY				Client	Client	Client	Client
SAMPLE TYPE				Bulk	Bulk	Bulk	Bulk
DATE RECEIVED				7/25/13	7/25/13	7/25/13	7/25/13
CLIENT SAMPLE ID				IS-1	IS-2	IS-3	IS-4
		Units	Test Method				
SIEVE ANALYSIS			ASTM D-422				
	3/4"						100
S	1/2"	%					99
I	3/8"				100	100	99
E	#4	P		100	97	99	98
V	#10	A		93	96	97	97
E	#16	S		92	94	94	95
	#30	S		90	90	91	92
S	#40	I		88	87	88	90
I	#100	N		83	72	81	79
Z	#200	G		79	57	75	72
E	.05mm			69	48	70	69
	.01mm			54	27	39	40
	.005mm			35	14	22	22
	.001mm			8	5	7	6

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	0	7	5	9	44	35
□	0	0	3	1	9	30	43	14
△	0	0	1	2	9	13	53	22

	Identification		Date Sampled	Date Received	Date Tested
○	Source of Sample: on site	Sample Number: 1 (13-0633)	7/23/13	7/25/13	7/29/13
□	Source of Sample: on site	Sample Number: 2 (13-0634)	7/23/13	7/25/13	7/29/13
△	Source of Sample: on site	Sample Number: 3 (13-0635)	7/23/13	7/25/13	7/29/13

Client Friedman & Bruya, Inc.

Project 307331 Soils

Project No. L13372 Date 8/2/13

BUDINGER & ASSOCIATES, INC.

○ Sampled by Client, sample ID IS-1
□ Sampled by Client, sample ID IS-2
△ Sampled by Client, sample ID IS-3

Tested By: KB **Checked By:** TB

Particle Size Distribution Report

	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	2	1	7	18	50	22

	Identification	Date Sampled	Date Received	Date Tested
○	Source of Sample: on site Sample Number: 4 (3-0636)	7/23/13	7/25/13	7/29/13

Client Friedman & Bruya, Inc.
Project 307331 Soils
Project No. L13372 Date 8/2/13

BUDINGER & ASSOCIATES, INC.

○ Sampled by Client, sample ID IS-4

Tested By: KB **Checked By:** TB

307331

SAMPLE CHAIN OF CUSTODY

KJ 7/23/13 AO2

Page # _____ of _____

Send Report To MIKE STATON

Company SLR INTERNATIONAL CORPORATION

Address 22118 30TH AVE SE, G-202

City, State, ZIP BOTHELL, WA 98021

Phone # (425)402-8800 Fax # (425)402-8488

SAMPLERS (signature)

PROJECT NAME/NO.: 8TH AVENUE TERMINALS, INC CROWLEY RI/FS 101.00205.00030

PO#: 101.00205.00030

REMARKS NWTPH-Dx FOR DRO & HO AFTER SILICA GEL CLEANUP

TURNAROUND TIME
- [x] Standard (2 Weeks)
- [ ] RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- [ ] Dispose after 30 days
- [ ] Return samples
- [x] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by8260	SVOCs by 8270	HFS	Metals (Priority Pollutant + Ba) by 6020/7470	PAHs by 8270D-SIM	PCBs by 8082	TOC by 9060	Grain Size	Mercury by 1631E	Notes
IS-1	01A-F	7/23/13	1225	SEDIMENT	7	X				X		X	X	X	X	X	X	
IS-2	02A-F		1300															
IS-3	03A-F		1335															
IS-4	04A-F		1350															

Samples received at 2 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	CHRIS LEE	SLR	7/23/13	1457
Received by:	Michael E. Hall	F&B	↓	↓
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Kurt Johnson, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 21, 2013

Mike Staton
SLR International Corp.
22118 20th Ave. SE., G-202
Bothell, WA 98021

Dear Mr. Staton:

Included are the results from the testing of material submitted on July 24, 2013 from the Crowley RIFS, 8th Ave Terminals 101.00205.00030, F&BI 307357 project. There are 20 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michele Costales Poquiz

Michele Costales Poquiz
Chemist

Enclosures
SLR0821R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on July 24, 2013 by Friedman & Bruya, Inc. from the SLR International Corp. Crowley RIFS, 8th Ave Terminals 101.00205.00030, F&BI 307357 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	SLR International Corp.
307357-01	IS-5

Total Petroleum Hydrocarbons as Diesel and Motor Oil by Method NWTPH-Dx with Silica Gel

All quality control requirements were acceptable.

Semivolatile Organic Compounds by EPA Method 8270D

The presence of bis(2-ethylhexyl) phthalate in the sample is likely due to laboratory contamination. The results have been flagged accordingly.

The percent recovery for the matrix spike (MS), matrix spike duplicate (MSD), laboratory control sample (LCS), and laboratory control sample duplicate (LCSD) exceeded acceptance criteria for several compounds. In addition, the relative percent difference (RPD) for the LCS/LCSD and the MS/MSD failed high for several compounds. The results have been flagged accordingly.

Semivolatile Organic Compounds by EPA Method 8270D SIM

The sample was diluted due to matrix interferences. The reporting limits have been raised accordingly.

Polychlorinated Biphenyls as Aroclor 1016/1260 by EPA Method 8082A

All quality control requirements were acceptable.

Total Metals by EPA Method 200.8

The internal standards associated with several analytes exceeded acceptance criteria. The sample was diluted and reanalyzed. The results from the original analysis and the re-analysis are included.

Total Mercury by EPA Method 1631E

All quality control requirements were acceptable.

Total Organic Carbon by EPA Method 9060M

The sample was sent to Analytical Resources, Inc. (ARI) for analysis. The report generated by ARI is enclosed.

Grain Size by ASTM D-422

The sample was sent to ARI for analysis. The report generated by ARI is enclosed.

Date of Report: 08/21/13
Date Received: 07/24/13
Project: Crowley RIFS, 8th Ave Terminals 101.00205.00030, F&BI 307357
Date Extracted: 07/29/13
Date Analyzed: 08/01/13

RESULTS FROM THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx
Sample Extracts Passed Through a Silica Gel Column Prior to Analysis
Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 53-144)
IS-5 307357-01	49 x	320	102
Method Blank 03-1483 MB	<2.8	<4.5	104

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	IS-5	Client:	SLR International Corp.
Date Received:	07/24/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	307357-01
Date Analyzed:	08/09/13	Data File:	080908.D
Matrix:	Soil/Sediment	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	80	56	115
Phenol-d6	93	54	113
Nitrobenzene-d5	92	31	164
2-Fluorobiphenyl	87	47	133
2,4,6-Tribromophenol	112	35	141
Terphenyl-d14	96	64	125

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.0054	2,4,6-Trichlorophenol	<0.008
Bis(2-chloroethyl) ether	<0.0016	2,4,5-Trichlorophenol	<0.0096
2-Chlorophenol	<0.0062	2-Chloronaphthalene	<0.0014
1,3-Dichlorobenzene	<0.0026	2-Nitroaniline	<0.0026
1,4-Dichlorobenzene	<0.0024	Dimethyl phthalate	0.0076
1,2-Dichlorobenzene	<0.004	2,6-Dinitrotoluene	<0.0019
Benzyl alcohol	0.012	3-Nitroaniline	<0.017
Bis(2-chloroisopropyl) ether	<0.0016	2,4-Dinitrophenol	<0.014
2-Methylphenol	<0.0064	Dibenzofuran	0.0063
Hexachloroethane	<0.0032	2,4-Dinitrotoluene	<0.0016
N-Nitroso-di-n-propylamine	<0.003	4-Nitrophenol	<0.018
3-Methylphenol + 4-Methylphenol	<0.014	Diethyl phthalate	0.016
Nitrobenzene	<0.0026	4-Chlorophenyl phenyl ether	<0.0016
Isophorone	<0.0011	N-Nitrosodiphenylamine	0.0015
2-Nitrophenol	<0.0082	4-Nitroaniline	<0.018
2,4-Dimethylphenol	<0.019	4,6-Dinitro-2-methylphenol	<0.011
Benzoic acid	0.056	4-Bromophenyl phenyl ether	<0.0016
Bis(2-chloroethoxy)methane	<0.0014	Hexachlorobenzene	<0.001
2,4-Dichlorophenol	<0.0058	Pentachlorophenol	0.018 j jl
1,2,4-Trichlorobenzene	<0.0034	Carbazole	0.024
Hexachlorobutadiene	<0.002	Di-n-butyl phthalate	<0.02
4-Chloroaniline	<0.18	Benzyl butyl phthalate	0.044
4-Chloro-3-methylphenol	<0.0044	Bis(2-ethylhexyl) phthalate	0.40 fc
2-Methylnaphthalene	0.0050	Di-n-octyl phthalate	<0.0032
Hexachlorocyclopentadiene	<0.0022		

Analysis For Semivolatile Compounds By EPA Method 8270D

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	03-1489 mb
Date Analyzed:	08/05/13	Data File:	080504.D
Matrix:	Soil/Sediment	Instrument:	GCMS8
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	89	32	162
Phenol-d6	91	10	170
Nitrobenzene-d5	100	50	150
2-Fluorobiphenyl	103	43	158
2,4,6-Tribromophenol	119	43	146
Terphenyl-d14	110	39	168

Compounds:	Concentration mg/kg (ppm)	Compounds:	Concentration mg/kg (ppm)
Phenol	<0.0054	2,4,6-Trichlorophenol	<0.008
Bis(2-chloroethyl) ether	<0.0016	2,4,5-Trichlorophenol	<0.0096
2-Chlorophenol	<0.0062	2-Chloronaphthalene	<0.0014
1,3-Dichlorobenzene	<0.0026	2-Nitroaniline	<0.0026
1,4-Dichlorobenzene	<0.0024	Dimethyl phthalate	<0.0012
1,2-Dichlorobenzene	<0.004	2,6-Dinitrotoluene	<0.0019
Benzyl alcohol	<0.005	3-Nitroaniline	<0.017
Bis(2-chloroisopropyl) ether	<0.0016	2,4-Dinitrophenol	<0.014
2-Methylphenol	<0.0064	Dibenzofuran	<0.001
Hexachloroethane	<0.0032	2,4-Dinitrotoluene	<0.0016
N-Nitroso-di-n-propylamine	<0.003	4-Nitrophenol	<0.018
3-Methylphenol + 4-Methylphenol	<0.014	Diethyl phthalate	<0.004
Nitrobenzene	<0.0026	4-Chlorophenyl phenyl ether	<0.0016
Isophorone	<0.0011	N-Nitrosodiphenylamine	<0.001
2-Nitrophenol	<0.0082	4-Nitroaniline	<0.018
2,4-Dimethylphenol	<0.019	4,6-Dinitro-2-methylphenol	<0.011
Benzoic acid	<0.054	4-Bromophenyl phenyl ether	<0.0016
Bis(2-chloroethoxy)methane	<0.0014	Hexachlorobenzene	<0.001
2,4-Dichlorophenol	<0.0058	Pentachlorophenol	<0.0062 j
1,2,4-Trichlorobenzene	<0.0034	Carbazole	<0.002
Hexachlorobutadiene	<0.002	Di-n-butyl phthalate	<0.02
4-Chloroaniline	<0.18	Benzyl butyl phthalate	<0.0058
4-Chloro-3-methylphenol	<0.0044	Bis(2-ethylhexyl) phthalate	<0.013
2-Methylnaphthalene	<0.001	Di-n-octyl phthalate	<0.0032
Hexachlorocyclopentadiene	<0.0022		

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	IS-5	Client:	SLR International Corp.
Date Received:	07/24/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	307357-01 1/50
Date Analyzed:	08/02/13	Data File:	080213.D
Matrix:	Soil/Sediment	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	220 ds	50	150
Benzo(a)anthracene-d12	145 ds	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.011
Acenaphthylene	0.018
Acenaphthene	<0.007
Fluorene	<0.0075
Phenanthrene	0.082
Anthracene	0.038
Fluoranthene	0.25
Pyrene	0.23
Benz(a)anthracene	0.13
Chrysene	0.27
Benzo(a)pyrene	0.18
Benzo(b)fluoranthene	0.38
Benzo(k)fluoranthene	0.11
Indeno(1,2,3-cd)pyrene	0.19
Dibenz(a,h)anthracene	0.037
Benzo(g,h,i)perylene	0.19

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	08/01/13	Lab ID:	03-1488 mb
Date Analyzed:	08/02/13	Data File:	080205.D
Matrix:	Soil/Sediment	Instrument:	GCMS6
Units:	mg/kg (ppm)	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	91	50	150
Benzo(a)anthracene-d12	115	35	159

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.00022
Acenaphthylene	<0.000091
Acenaphthene	<0.00014
Fluorene	<0.00015
Phenanthrene	<0.00032
Anthracene	<0.000088
Fluoranthene	<0.00028
Pyrene	<0.00026
Benz(a)anthracene	<0.00018
Chrysene	<0.00019
Benzo(a)pyrene	<0.00022
Benzo(b)fluoranthene	<0.00018
Benzo(k)fluoranthene	<0.00036
Indeno(1,2,3-cd)pyrene	<0.00062
Dibenz(a,h)anthracene	<0.00034
Benzo(g,h,i)perylene	<0.00034

Analysis For PCBs By EPA Method 8082

Client Sample ID:	IS-5	Client:	SLR International Corp.
Date Received:	07/24/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	08/15/13	Lab ID:	307357-01
Date Analyzed:	08/16/13	Data File:	14.D\ECD1A.CH
Matrix:	Soil/Sediment	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	104	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.033
Aroclor 1232	<0.033
Aroclor 1016	<0.033
Aroclor 1242	<0.033
Aroclor 1248	<0.033
Aroclor 1254	0.25
Aroclor 1260	0.24

Analysis For PCBs By EPA Method 8082

Client Sample ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	08/15/13	Lab ID:	03-1599 mb
Date Analyzed:	08/16/13	Data File:	12.D\ECD1A.CH
Matrix:	Soil/Sediment	Instrument:	GC7
Units:	mg/kg (ppm)	Operator:	mwdl

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
TCMX	113	50	150

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	<0.033
Aroclor 1232	<0.033
Aroclor 1016	<0.033
Aroclor 1242	<0.033
Aroclor 1248	<0.033
Aroclor 1254	<0.033
Aroclor 1260	<0.033

Analysis For Total Metals By EPA Method 200.8

Client ID:	IS-5	Client:	SLR International Corp.
Date Received:	07/24/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	08/02/13	Lab ID:	307357-01
Date Analyzed:	08/14/13	Data File:	307357-01.025
Matrix:	Soil/Sediment	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	145 vo	60	125
Indium	88	60	125
Holmium	92	60	125

Analyte:	Concentration mg/kg (ppm)
Selenium	<0.920
Cadmium	0.622
Thallium	<0.0440

Analysis For Total Metals By EPA Method 200.8

Client ID:	IS-5	Client:	SLR International Corp.
Date Received:	07/24/13	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	08/02/13	Lab ID:	307357-01 x10
Date Analyzed:	08/14/13	Data File:	307357-01 x10.045
Matrix:	Soil/Sediment	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	90	60	125
Indium	91	60	125
Holmium	95	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.860
Chromium	35.8
Nickel	37.6
Copper	128
Zinc	249
Arsenic	17.9
Selenium	<9.20
Silver	<0.780
Cadmium	<2.00
Antimony	<1.06
Barium	56.7
Thallium	<0.440
Lead	71.1

Analysis For Total Metals By EPA Method 200.8

Client ID:	Method Blank	Client:	SLR International Corp.
Date Received:	N/A	Project:	Crowley RIFS 101.00205.00030
Date Extracted:	08/02/13	Lab ID:	I3-476 mb
Date Analyzed:	08/14/13	Data File:	I3-476 mb.016
Matrix:	Soil/Sediment	Instrument:	ICPMS1
Units:	mg/kg (ppm)	Operator:	AP

Internal Standard:	% Recovery:	Lower Limit:	Upper Limit:
Germanium	80	60	125
Indium	87	60	125
Holmium	87	60	125

Analyte:	Concentration mg/kg (ppm)
Beryllium	<0.0860
Chromium	<0.480
Nickel	<0.200
Copper	<0.0720
Zinc	<0.980
Arsenic	<0.420
Selenium	<0.920
Silver	<0.0780
Cadmium	<0.200
Antimony	<0.106
Barium	<0.0520
Thallium	<0.0440
Lead	<0.0500

Date of Report: 08/21/13
Date Received: 07/24/13
Project: Crowley RIFS, 8th Ave Terminals 101.00205.00030, F&BI 307357
Date Extracted: 08/02/13
Date Analyzed: 08/05/13

RESULTS FROM THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Total Mercury
IS-5 307357-01	0.11
Method Blank	<0.002

Date of Report: 08/21/13
Date Received: 07/24/13
Project: Crowley RIFS, 8th Ave Terminals 101.00205.00030, F&BI 307357

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 307331-04 (Matrix Spike) Silica Gel

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	500	160	109	109	64-133	0

Laboratory Code: Laboratory Control Sample Silica Gel

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	500	126	58-147

Date of Report: 08/21/13
Date Received: 07/24/13
Project: Crowley RIFS, 8th Ave Terminals 101.00205.00030, F&BI 307357

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D

Laboratory Code: 307331-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Phenol	mg/kg (ppm)	1.7	<0.0054	74	94	50-150	24 vo
Bis(2-chloroethyl) ether	mg/kg (ppm)	1.7	<0.00158	65	84	50-150	26 vo
2-Chlorophenol	mg/kg (ppm)	1.7	<0.0062	76	87	50-150	13
1,3-Dichlorobenzene	mg/kg (ppm)	1.7	<0.0026	41 vo	63	50-150	42 vo
1,4-Dichlorobenzene	mg/kg (ppm)	1.7	<0.0024	40 vo	65	50-150	48 vo
1,2-Dichlorobenzene	mg/kg (ppm)	1.7	<0.004	45 vo	67	50-150	39 vo
Benzyl alcohol	mg/kg (ppm)	1.7	0.019326	65	70	50-150	7
Bis(2-chloroisopropyl) ether	mg/kg (ppm)	1.7	<0.00158	49 vo	65	50-150	28 vo
2-Methylphenol	mg/kg (ppm)	1.7	<0.0064	87	92	50-150	6
Hexachloroethane	mg/kg (ppm)	1.7	<0.0032	12 vo	10 vo	50-150	18
N-Nitroso-di-n-propylamine	mg/kg (ppm)	1.7	<0.003	77	81	50-150	5
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	1.7	<0.0144	91	100	50-150	9
Nitrobenzene	mg/kg (ppm)	1.7	<0.0026	75	87	50-150	15
Isophorone	mg/kg (ppm)	1.7	<0.00112	77	88	50-150	13
2-Nitrophenol	mg/kg (ppm)	1.7	<0.0082	71	32 vo	50-150	76 vo
2,4-Dimethylphenol	mg/kg (ppm)	1.7	<0.0186	91	102	50-150	11
Benzoic acid	mg/kg (ppm)	2.5	<0.054	64	40 vo	50-150	46 vo
Bis(2-chloroethoxy)methane	mg/kg (ppm)	1.7	<0.00144	79	91	50-150	14
2,4-Dichlorophenol	mg/kg (ppm)	1.7	<0.0058	102	110	50-150	8
1,2,4-Trichlorobenzene	mg/kg (ppm)	1.7	<0.0034	65	84	50-150	26 vo
Hexachlorobutadiene	mg/kg (ppm)	1.7	<0.002	59	84	50-150	35 vo
4-Chloroaniline	mg/kg (ppm)	3.3	<0.178	12 vo	13 vo	50-150	8
4-Chloro-3-methylphenol	mg/kg (ppm)	1.7	<0.0044	111	110	50-150	1
2-Methylnaphthalene	mg/kg (ppm)	1.7	0.002083	78	94	50-150	19
Hexachlorocyclopentadiene	mg/kg (ppm)	1.7	<0.0022	0 vo	0 vo	50-150	
2,4,6-Trichlorophenol	mg/kg (ppm)	1.7	<0.008	110	112	50-150	2
2,4,5-Trichlorophenol	mg/kg (ppm)	1.7	<0.0096	96	107	50-150	11
2-Chloronaphthalene	mg/kg (ppm)	1.7	<0.00144	82	98	50-150	18
2-Nitroaniline	mg/kg (ppm)	1.7	<0.0026	94	107	50-150	13
Dimethyl phthalate	mg/kg (ppm)	1.7	0.006248	84	99	50-150	16
2,6-Dinitrotoluene	mg/kg (ppm)	1.7	<0.00188	79	57	50-150	32 vo
3-Nitroaniline	mg/kg (ppm)	3.3	<0.0174	10 vo	36 vo	50-150	113 vo
2,4-Dinitrophenol	mg/kg (ppm)	1.7	<0.0138	20 vo	14 vo	50-150	35 vo
Dibenzofuran	mg/kg (ppm)	1.7	0.002999	85	97	50-150	13
2,4-Dinitrotoluene	mg/kg (ppm)	1.7	<0.00158	84	50	50-150	51 vo
4-Nitrophenol	mg/kg (ppm)	1.7	<0.0178	40 vo	15 vo	50-150	91 vo
Diethyl phthalate	mg/kg (ppm)	1.7	0.035569	82	74	50-150	10
4-Chlorophenyl phenyl ether	mg/kg (ppm)	1.7	<0.00158	86	99	50-150	14
N-Nitrosodiphenylamine	mg/kg (ppm)	1.7	<0.00102	86	103	50-150	18
4-Nitroaniline	mg/kg (ppm)	3.3	<0.0182	21 vo	55	50-150	89 vo
4,6-Dinitro-2-methylphenol	mg/kg (ppm)	1.7	<0.0106	17 vo	6 vo	50-150	96 vo
4-Bromophenyl phenyl ether	mg/kg (ppm)	1.7	<0.00164	91	108	50-150	17
Hexachlorobenzene	mg/kg (ppm)	1.7	<0.00102	89	105	50-150	16
Pentachlorophenol	mg/kg (ppm)	1.7	0.015494	105	105	50-150	0
Carbazole	mg/kg (ppm)	1.7	0.010996	79	86	50-150	8
Di-n-butyl phthalate	mg/kg (ppm)	1.7	<0.02	86	136	50-150	45 vo
Benzyl butyl phthalate	mg/kg (ppm)	1.7	0.018743	111	176 vo	50-150	45 vo
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	1.7	0.404255	-61	-165	50-150	
Di-n-octyl phthalate	mg/kg (ppm)	1.7	0.013994	73	91	50-150	22 vo

Date of Report: 08/21/13
Date Received: 07/24/13
Project: Crowley RIFS, 8th Ave Terminals 101.00205.00030, F&BI 307357

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Phenol	mg/kg (ppm)	1.7	98	91	51-119	7
Bis(2-chloroethyl) ether	mg/kg (ppm)	1.7	100	93	60-112	7
2-Chlorophenol	mg/kg (ppm)	1.7	96	90	59-114	6
1,3-Dichlorobenzene	mg/kg (ppm)	1.7	95	87	62-113	9
1,4-Dichlorobenzene	mg/kg (ppm)	1.7	96	88	61-114	9
1,2-Dichlorobenzene	mg/kg (ppm)	1.7	97	88	61-113	10
Benzyl alcohol	mg/kg (ppm)	1.7	103	97	50-119	6
Bis(2-chloroisopropyl) ether	mg/kg (ppm)	1.7	111	102	59-113	8
2-Methylphenol	mg/kg (ppm)	1.7	95	91	58-115	4
Hexachloroethane	mg/kg (ppm)	1.7	95	87	63-114	9
N-Nitroso-di-n-propylamine	mg/kg (ppm)	1.7	101	97	62-114	4
3-Methylphenol + 4-Methylphenol	mg/kg (ppm)	1.7	99	94	54-120	5
Nitrobenzene	mg/kg (ppm)	1.7	104	96	59-114	8
Isophorone	mg/kg (ppm)	1.7	109	102	61-113	7
2-Nitrophenol	mg/kg (ppm)	1.7	104	98	59-114	6
2,4-Dimethylphenol	mg/kg (ppm)	1.7	77	78	54-107	1
Benzoic acid	mg/kg (ppm)	2.5	127	112	43-150	13
Bis(2-chloroethoxy)methane	mg/kg (ppm)	1.7	104	96	60-114	8
2,4-Dichlorophenol	mg/kg (ppm)	1.7	106	98	57-118	8
1,2,4-Trichlorobenzene	mg/kg (ppm)	1.7	100	91	56-112	9
Hexachlorobutadiene	mg/kg (ppm)	1.7	103	93	60-116	10
4-Chloroaniline	mg/kg (ppm)	3.3	73	67	10-126	9
4-Chloro-3-methylphenol	mg/kg (ppm)	1.7	112	104	59-115	7
2-Methylnaphthalene	mg/kg (ppm)	1.7	106	99	60-115	7
Hexachlorocyclopentadiene	mg/kg (ppm)	1.7	108 vo	96	41-107	12
2,4,6-Trichlorophenol	mg/kg (ppm)	1.7	109	102	47-119	7
2,4,5-Trichlorophenol	mg/kg (ppm)	1.7	113	105	61-121	7
2-Chloronaphthalene	mg/kg (ppm)	1.7	104	99	58-114	5
2-Nitroaniline	mg/kg (ppm)	1.7	115	111	55-119	4
Dimethyl phthalate	mg/kg (ppm)	1.7	112	108	58-116	4
2,6-Dinitrotoluene	mg/kg (ppm)	1.7	113	110	57-119	3
3-Nitroaniline	mg/kg (ppm)	3.3	100	96	10-143	4
2,4-Dinitrophenol	mg/kg (ppm)	1.7	108	103	40-122	5
Dibenzofuran	mg/kg (ppm)	1.7	107	102	56-115	5
2,4-Dinitrotoluene	mg/kg (ppm)	1.7	120	116	53-126	3
4-Nitrophenol	mg/kg (ppm)	1.7	121	112	40-124	8
Diethyl phthalate	mg/kg (ppm)	1.7	109	104	57-116	5
4-Chlorophenyl phenyl ether	mg/kg (ppm)	1.7	109	104	54-119	5
N-Nitrosodiphenylamine	mg/kg (ppm)	1.7	104	103	54-113	1
4-Nitroaniline	mg/kg (ppm)	3.3	106	106	47-109	0
4,6-Dinitro-2-methylphenol	mg/kg (ppm)	1.7	113 vo	110 vo	57-108	3
4-Bromophenyl phenyl ether	mg/kg (ppm)	1.7	109	105	56-116	4
Hexachlorobenzene	mg/kg (ppm)	1.7	105	104	57-115	1
Pentachlorophenol	mg/kg (ppm)	1.7	125 vo	122	45-123	2
Carbazole	mg/kg (ppm)	1.7	105	104	57-116	1
Di-n-butyl phthalate	mg/kg (ppm)	1.7	118	114	56-118	3
Benzyl butyl phthalate	mg/kg (ppm)	1.7	119	113	56-122	5
Bis(2-ethylhexyl) phthalate	mg/kg (ppm)	1.7	122	116	56-125	5
Di-n-octyl phthalate	mg/kg (ppm)	1.7	106	96	58-120	10

Date of Report: 08/21/13
Date Received: 07/24/13
Project: Crowley RIFS, 8th Ave Terminals 101.00205.00030, F&BI 307357

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR PNA'S BY EPA METHOD 8270D SIM

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	85	90	58-121	6
Acenaphthylene	mg/kg (ppm)	0.17	93	98	54-121	5
Acenaphthene	mg/kg (ppm)	0.17	89	94	54-123	5
Fluorene	mg/kg (ppm)	0.17	94	98	56-127	4
Phenanthrene	mg/kg (ppm)	0.17	91	94	55-122	3
Anthracene	mg/kg (ppm)	0.17	88	92	50-120	4
Fluoranthene	mg/kg (ppm)	0.17	96	97	54-129	1
Pyrene	mg/kg (ppm)	0.17	98	104	53-127	6
Benz(a)anthracene	mg/kg (ppm)	0.17	91	92	51-115	1
Chrysene	mg/kg (ppm)	0.17	95	101	55-129	6
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	99	105	56-123	6
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	84	86	54-131	2
Benzo(a)pyrene	mg/kg (ppm)	0.17	78	80	51-118	3
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	90	94	49-148	4
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	88	91	50-141	3
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	87	91	52-131	4

Date of Report: 08/21/13
Date Received: 07/24/13
Project: Crowley RIFS, 8th Ave Terminals 101.00205.00030, F&BI 307357

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 307357-01 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	<0.033	<0.033	nm
Aroclor 1260	mg/kg (ppm)	<0.033	<0.033	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	% Recovery LCS	% Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.8	88	93	70-130	6
Aroclor 1260	mg/kg (ppm)	0.8	92	95	70-130	3

Date of Report: 08/21/13
Date Received: 07/24/13
Project: Crowley RIFS, 8th Ave Terminals 101.00205.00030, F&BI 307357

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8

Laboratory Code: 307331-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Beryllium	mg/kg (ppm)	5	0.155	74	62 vo	67-138	18
Chromium	mg/kg (ppm)	50	12.9	62 b	60 b	57-128	3 b
Nickel	mg/kg (ppm)	25	13.2	58 b	69 b	69-112	17 b
Copper	mg/kg (ppm)	50	24.7	61 b	61 b	57-120	0 b
Zinc	mg/kg (ppm)	50	42.6	78 b	61 b	55-129	24 b
Arsenic	mg/kg (ppm)	10	12.5	94 b	121 b	70-118	25 b
Selenium	mg/kg (ppm)	5	<0.920	88	85	64-117	3
Silver	mg/kg (ppm)	10	0.0990	103	107	73-122	4
Cadmium	mg/kg (ppm)	10	<0.200	106	108	83-116	2
Antimony	mg/kg (ppm)	20	0.722	69	73	54-116	6
Barium	mg/kg (ppm)	50	31.0	111 b	113 b	60-141	2 b
Thallium	mg/kg (ppm)	5	<0.0440	96	98	68-121	2
Lead	mg/kg (ppm)	50	11.6	107 b	107 b	59-148	0 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Beryllium	mg/kg (ppm)	5	114	69-146
Chromium	mg/kg (ppm)	50	103	78-121
Nickel	mg/kg (ppm)	25	100	82-122
Copper	mg/kg (ppm)	50	99	82-119
Zinc	mg/kg (ppm)	50	100	81-120
Arsenic	mg/kg (ppm)	10	93	83-113
Selenium	mg/kg (ppm)	5	94	84-115
Silver	mg/kg (ppm)	10	100	81-116
Cadmium	mg/kg (ppm)	10	100	54-114
Antimony	mg/kg (ppm)	20	106	69-114
Barium	mg/kg (ppm)	50	98	85-116
Thallium	mg/kg (ppm)	5	96	77-123
Lead	mg/kg (ppm)	50	101	80-120

Date of Report: 08/21/13
Date Received: 07/24/13
Project: Crowley RIFS, 8th Ave Terminals 101.00205.00030, F&BI 307357

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL/SEDIMENT SAMPLES FOR TOTAL MERCURY USING EPA METHOD 1631E

Laboratory Code: 307331-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Mercury	mg/kg (ppm)	0.125	0.13	101	100	62-140	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Mercury	mg/kg (ppm)	0.125	100	63-131

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

A1 – More than one compound of similar molecule structure was identified with equal probability.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for this range fell outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte indicated may be due to carryover from previous sample injections.

d - The sample was diluted. Detection limits may be raised due to dilution.

ds - The sample was diluted. Detection limits are raised due to dilution and surrogate recoveries may not be meaningful.

dv - Insufficient sample was available to achieve normal reporting limits and limits are raised accordingly.

fb - Analyte present in the blank and the sample.

fc – The compound is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. The variability is attributed to sample inhomogeneity.

ht - Analysis performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of normal control limits. Compounds in the sample matrix interfered with the quantitation of the analyte.

j – The result is below normal reporting limits. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The analyte result in the laboratory control sample is out of control limits. The reported concentration should be considered an estimate.

jr - The rpd result in laboratory control sample associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the compound indicated is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc – The sample was received in a container not approved by the method. The value reported should be considered an estimate.

pr – The sample was received with incorrect preservation. The value reported should be considered an estimate.

ve - Estimated concentration calculated for an analyte response above the valid instrument calibration range. A dilution is required to obtain an accurate quantification of the analyte.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Analytical Resources, Incorporated
Analytical Chemists and Consultants

August 1, 2013

Michele Costales Poquiz
Friedman & Bruya
3012 16th Ave W
Seattle, WA 98119

RE: Project: 307357
ARI Job No.: WY67

Dear Michele:

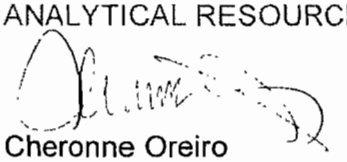
Please find enclosed the Chain-of-Custody record (COC), sample receipt documentation, and the final data for the samples from the project referenced above. Analytical Resources, Inc. (ARI) accepted one sediment sample on July 25, 2013, under ARI job WY67. For further details regarding sample receipt, please refer to the enclosed Cooler Receipt Form.

The sample was analyzed for TOC, as requested on the COC.

There were no anomalies associated with the analysis of this sample.

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

Respectfully,
ANALYTICAL RESOURCES, INC.



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

cc: eFile WY67

Enclosures

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

WY60+

SAMPLE CHAIN OF CUSTODY

Send Report To Michele Costales Poquiz

Company Friedman & Bruya, Inc.

Address 3012 16th Ave. W.

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

Email Address mpoquiz@friedmanandbruya.com

SUBCONTRACTOR
Analytical Resources, Inc. (ARI)

PROJECT NAME/NO.	PO #
307357	C-483

REMARKS

Please e-mail results

ELECTRONIC DATA REQUESTED (EIM)

TURNAROUND TIME
☒ Standard Turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Dispose after 30 days
☐ Return samples
☐ Will call with instructions

Samples Received at ____ °C

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of containers	ANALYSES REQUESTED: TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270	HFS	Hexavalent Cr by 7196A	Total Organic Carbon by 9060M				Notes
IS-5		7/24/13	1200	sediment	1								X				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michele Costales Poquiz	F&B	7/25/13	8:22AM
Received by:	A. Volgardsen	ARI	7/25/13	1100
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FORMS\COC\COC SLRC.DOC

Analytical Chemists and Consultants

Cooler Receipt Form

ARI Client: Friedman + Bruya

Project Name: _____

COC No(s): _____ (NA)

Delivered by: Fed-Ex UPS Courier Hand Delivered Other: Postal Express

Assigned ARI Job No. WYL67

Tracking No: 4538993 NA

Preliminary Examination Phase:

Were intact, properly signed and dated custody seals attached to the outside of to cooler?	YES	(NO)
Were custody papers included with the cooler?	(YES)	NO
Were custody papers properly filled out (ink, signed, etc.)	(YES)	NO
Temperature of Cooler(s) (°C) (recommended 2.0-6.0 °C for chemistry). 5.6		
If cooler temperature is out of compliance fill out form 00070F	Temp Gun ID#: 90089952	

Cooler Accepted by: AV Date: 7/25/13 Time: 1100

Complete custody forms and attach all shipping documents

Log-In Phase:

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

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

Samples Logged by: AV Date: 7/25/13 Time: 1127

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

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

Additional Notes, Discrepancies, & Resolutions:

By: Date:

Small → "sm"
Peabubbles → "pb"
Large → "lg"
Headspace → "hs"

Sample ID Cross Reference Report

ANALYTICAL RESOURCES INCORPORATED

ARI Job No: WY67
Client: Friedman and Bruya, Inc
Project Event: 307357
Project Name: N/A

	Sample ID	ARI Lab ID	ARI LIMS ID	Matrix	Sample Date/Time	VTSR
1.	IS-5	WY67A	13-15593	Sediment	07/24/13 12:00	07/25/13 11:00

SAMPLE RESULTS-CONVENTIONALS
WY67-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 07/31/13

Project: NA
Event: 307357
Date Sampled: 07/24/13
Date Received: 07/25/13

Client ID: IS-5
ARI ID: 13-15593 WY67A

Analyte	Date	Method	Units	RL	Sample
Total Solids	07/25/13 072513#1	SM2540B	Percent	0.01	45.58
Total Organic Carbon	07/29/13 072913#1	EPA 9060M	Percent	0.020	3.05

RL Analytical reporting limit
U Undetected at reported detection limit

LAB CONTROL RESULTS-CONVENTIONALS
WY67-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 07/31/13

Project: NA
Event: 307357
Date Sampled: NA
Date Received: NA

Analyte/Method	QC ID	Date	Units	LCS	Spike Added	Recovery
Total Organic Carbon EPA 9060M	ICVL	07/29/13	Percent	0.092	0.100	92.0%

METHOD BLANK RESULTS-CONVENTIONALS
WY67-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 07/31/13

Project: NA
Event: 307357
Date Sampled: NA
Date Received: NA

Analyte	Date	Units	Blank	QC ID
Total Solids	07/25/13	Percent	< 0.01 U	ICB
Total Organic Carbon	07/29/13	Percent	< 0.020 U	ICB

STANDARD REFERENCE RESULTS-CONVENTIONALS
WY67-Friedman and Bruya, Inc

ANALYTICAL RESOURCES INCORPORATED

Matrix: Sediment
Data Release Authorized:
Reported: 07/31/13

Project: NA
Event: 307357
Date Sampled: NA
Date Received: NA

Analyte/SRM ID	Date	Units	SRM	True Value	Recovery
Total Organic Carbon NIST 1941B	07/29/13	Percent	2.56	2.99	85.6%

Budinger & Associates

Proudly serving the Inland Northwest for over 30 years

Geotechnical Engineering
Environmental Engineering
Construction Materials Testing
Subsurface Exploration
Special Inspection

Michele Costales Porquiz
Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119

August 7, 2013

Project Number L13378

PROJECT: 307357 Soils
Seattle, WA

SUBJECT: Results of Laboratory Testing
Report # 1

At your request, we provided laboratory testing services for the subject project. Services were limited to the performance of specific laboratory tests, selected at your discretion.

For this period our involvement was limited to laboratory testing of one sample delivered to us on July 26, 2013. Laboratory tests were performed in general accordance with methods listed on the attached *Laboratory Summary* and *Particle Size Distribution* sheets.

If you have any questions, please call.

Respectfully Submitted,
BUDINGER & ASSOCIATES, INC.

Kyle L. Sanford
Mgr. Construction Services

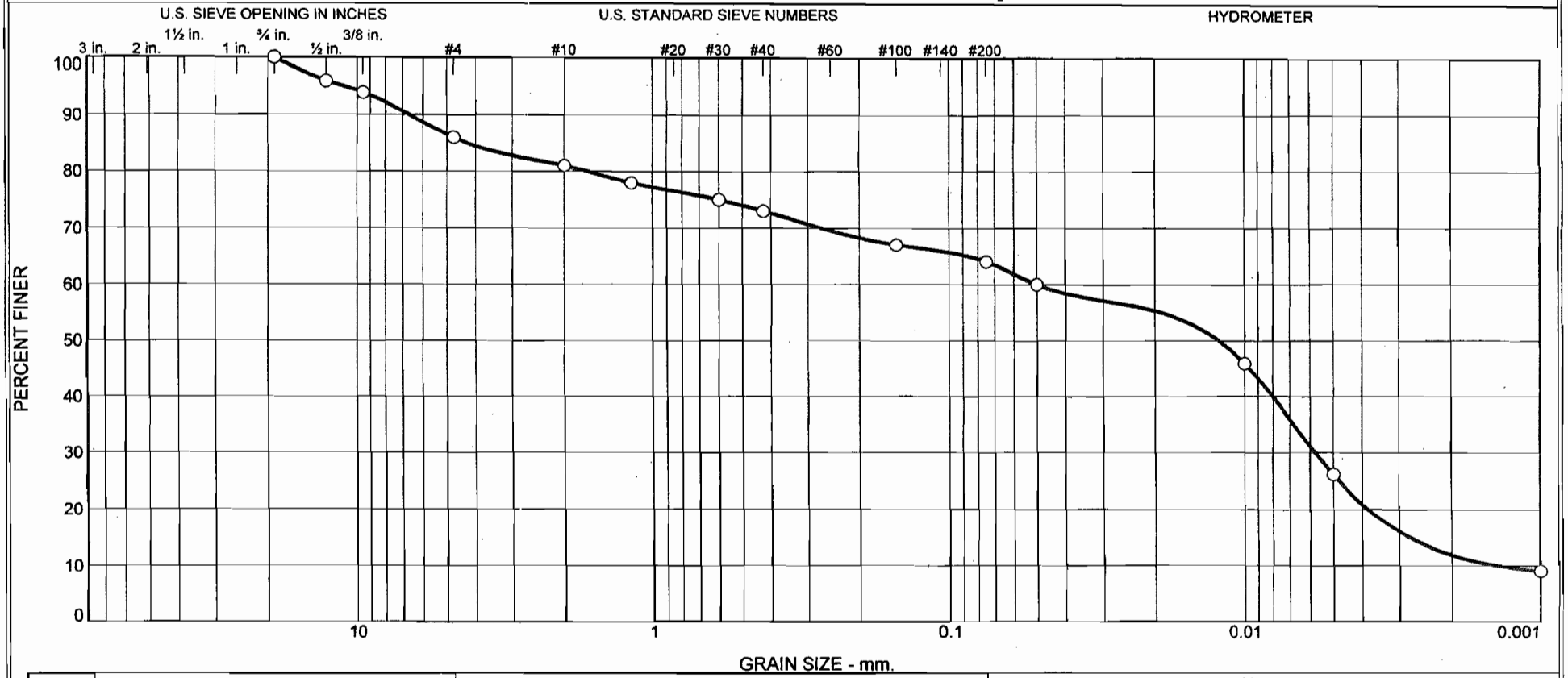
KLS/kh
Addressee – 2
Attachments:
- Soils - Laboratory Summary (1 page)
- Particle Size Distribution (1 page)

1101 North Fancher Road
Spokane Valley, WA 99212
Tel: 509-535-8841
Fax:509-535-9589

SOILS
LABORATORY SUMMARY

LABORATORY NUMBER				13-0636
SAMPLE NUMBER				1
SAMPLED BY				Client
SAMPLE TYPE				Bulk
DATE RECEIVED				7/26/13
CLIENT SAMPLE ID				IS-5
		Units	Test Method	
SIEVE ANALYSIS			ASTM D-422	
	3/4"			100
S	1/2"	%		96
I	3/8"			94
E	#4	P		86
V	#10	A		81
E	#16	S		78
	#30	S		75
S	#40	I		73
I	#100	N		67
Z	#200	G		64
E	.05mm			60
	.01mm			46
	.005mm			26
	.001mm			9

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0	0	14	5	8	9	38	26

	Identification	Date Sampled	Date Received	Date Tested
○	Source of Sample: on site Sample Number: 1 (13-0636)	7/24/13	7/26/13	7/30/13

Client Friedman & Bruya, Inc.
Project 307357 Soils
Project No. L13378 Date 8/2/13

BUDINGER & ASSOCIATES, INC.

○ Sampled by Client, sample ID IS-5

Tested By: KB **Checked By:** TB

307357

SAMPLE CHAIN OF CUSTODY

KJ 07/24/13 BT2

Page # 1 of 1

Send Report To Mike Staton

Company SLR International Corp.

Address 22118 20th Ave SE, G202

City, State, ZIP Bothell, WA 98021

Phone # 425-402-8800 Fax # 425-402-8488

SAMPLERS (signature)

PROJECT NAME/NO.: Crowley RIFS 8th Ave Terminals 101.00205.00030

PO#: 101.00205.00030

REMARKS: NWTPH-Dx after silica gel cleanup

TURNAROUND TIME
- ☒ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☒ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type (per Amanda M. via e-mail 7/24/13)	# of containers	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260	SVOCs by 8270D	HFS	Priority Pollutant Metals (6 by 200.8)	Mercury by 1631E	PAHs by 8270D SIM	PCBs by 8082A	Grain Size by ASTM D-422	TOC by 9060	Notes
IS-5	01 A-F	7/24/13	1200	sediment ~~Soil~~	6	X				X		X	X	X	X	X	X	
~~IS-6~~																		
																		Samples received at 3 °C

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Amanda Mengniot	SLR	7/24/13	1300
Received by:	Nhan Phan	FeBT	7/24/13	1300
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
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SGS ANALYTICAL PERSPECTIVES

7 August 2013

Mike Staton
SLR Consulting
22118 20th Ave SE
Suite G202
Bothell, WA 98021

Ph.: 425-402-8800
Email: mstaton@slrconsulting.com

Subject: Certificate of Results

Dear Mike;

Attached to this narrative are the analytical results you requested on the samples submitted for the determination of polychlorinated dibenzo-*p*-dioxins and dibenzofurans. The insert below summarizes the relevant information pertaining to your project. In particular, QC annotations bring to your attention specific analytical observations and assessments made during the sample handling and data interpretation phases. Results reported relate only to the items tested.

Project Information Summary	When applicable, see QC Annotations for details
Client Project No.	Crowley RIFS 101.00205.00030
AP Project #	**A5767**
Analytical Protocol	Method 8290
No. Samples Submitted	5
No. Samples Analyzed	5
No. Laboratory Method Blanks	1
No. OPRs / Batch CS3	1
No. Outstanding Samples	0
Date Received	26-Jul-2013
Condition Received	good
Temperature upon Receipt (C)	3
Extraction within Holding Time	yes
Analysis within Holding Time	yes
Data meet QA/QC Requirements	yes
Exceptions	none
Analytical Difficulties	none

QC Annotations:

Please see Appendix A & B attached for data qualifier/attribute and lab identifier descriptions which may be contained in the project.

Analytical Perspectives Certification IDs:

SOUTH CAROLINA	99054
ARKANSAS	88-0628
NEW JERSEY-NELAP SECONDARY	NC005
FLORIDA-NELAP PRIMARY	E87608
LOUISIANA	4024
NORTH CAROLINA	37783
WASHINGTON	C2027
NEW YORK	11988
VIRGINIA	460180
MINNESOTA	037-999-448
OREGON	pending
TEXAS	T104704484-10-1
PENNSYLVANIA-NELAP SECONDARY	68-01849

SGS Analytical Perspectives remains committed to serving you in the most effective manner. Should you have any questions or need additional information and technical support, please do not hesitate to contact us.

The management and staff of SGS Analytical Perspectives welcomes customer feedback, both positive and negative, as we continually improve our services. Please visit our web site at www.ultratrace.com and click on the 'Leave Your Feedback Here!' link on the Home Page. Thank you for choosing SGS Analytical Perspectives.

Sincerely,

Heather Distel

Heather Distel, Ph.D.
Senior Project Scientist/Team Lead

APPENDIX A: DATA QUALIFIERS / DATA ATTRIBUTES	
>	Indicates high recoveries. Shown with the numeric value at the top of the range.[1]
B	The analyte was found in the method blank, at a concentration that was at least 10% of the concentration in the sample.
C	Two or more congeners co-elute. In EDDs C denotes the lowest IUPAC congener in a co-elution group and additional co-eluters for the group are shown with the number of the lowest IUPAC co-eluter.
E	The reported concentration exceeds the calibration range (upper point of the calibration curve).
EMPC	Represents an Estimated Maximum Possible Concentration. EMPC's arise in cases where the signal/noise ratio is not sufficient for peak identification (the determined ion-abundance ratio is outside the allowed theoretical range), or where there is a co-eluting interference.
ETH	Indicates the presence of a diphenyl ether that appears to interfere with the quantitation of a furan. The reported concentration is the maximum.
H/h	If the standard recovery is below the method or SOP specified value "H" is assigned. If the obtained value is less than half the specified value "h" is assigned.[1]
J	Indicates that an analyte has a concentration below the reporting limit (lowest point of the calibration curve).
ND	Indicates a non-detect.
NR	Indicates a value that is not reportable.
PR	Due to interference, the associated congener is poorly resolved.
QI	Indicates the presence of a quantitative interference.
SI	Denotes "Single Ion Mode" and is utilized for PCBs where the secondary ion trace has a significantly elevated noise level due to background PFK. Responses for such peaks are calculated using an EMPC approach based solely on the primary ion area(s) and may be considered estimates.[1]
U	The analyte was not detected. The estimated detection limit (EDL) may be reported for this analyte.
V	The labeled standard recovery was found to be outside of the method control limits.
X	Indicates results reported from reinjection, refractionation, or repeat analyses.
APPENDIX B: LAB ID IDENTIFIERS	
AR	Indicates use of the archived portion of the sample extract.
CU	Indicates a sample that required additional clean-up prior to MS injection/processing.
D	Indicates a dilution of the sample extract. The number that follows the "D" indicates the dilution factor.
DE	Indicates a dilution performed with the addition of ES (extraction standard) solution.
DUP	Designation for a duplicate sample.
MS	Designation for a matrix spike.
MSD	Designation for a matrix spike duplicate.
RJ	Indicates a reinjection of the sample extract.
S	Indicates a sample split. The number that follows the "S" indicates the split factor.

[1]Denotes data qualifiers/attributes whose use will be phased out over time

Sample ID: Method Blank — Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5767	Date Received:	n/a
Project ID:	Crowley RIFS 101.00205.00030	Weight/Volume:	0.0100 Kg	Lab Sample ID	MB1_11183_DF_SDS	Date Extracted:	29-Jul-2013
Date Collected:	n/a	% Solids:	100.0 %	QC Batch No:	11183	Date Analyzed:	05-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	07:42:45

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	ND	66.5			ES 2378-TCDD	94.8	
12378-PeCDD	ND	68.2			ES 12378-PeCDD	90.2	
123478-HxCDD	ND	51.7			ES 123478-HxCDD	91.3	
123678-HxCDD	ND	56.6			ES 123678-HxCDD	89.1	
123789-HxCDD	EMPC		79.8	J	ES 123789-HxCDD	91.7	
1234678-HpCDD	81.5			J	ES 1234678-HpCDD	84.1	
OCDD	EMPC		401	J	ES OCDD	65.8	
2378-TCDF	ND	44.2			ES 2378-TCDF	94.8	
12378-PeCDF	ND	49.9			ES 12378-PeCDF	92.6	
23478-PeCDF	ND	46.9			ES 23478-PeCDF	91.2	
123478-HxCDF	ND	48.4			ES 123478-HxCDF	88.3	
123678-HxCDF	ND	45.2			ES 123678-HxCDF	88	
234678-HxCDF	ND	45.9			ES 234678-HxCDF	87.8	
123789-HxCDF	ND	55.3			ES 123789-HxCDF	90.4	
1234678-HpCDF	ND	54.2			ES 1234678-HpCDF	83.1	
1234789-HpCDF	ND	62.7			ES 1234789-HpCDF	85.5	
OCDF	ND	78.1			ES OCDF	73.5	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	89.4	
Total TCDD	ND	66.5	ND		CS 12347-PeCDD	91.6	
Total PeCDD	ND	68.2	ND		CS 12346-PeCDF	92.1	
Total HxCDD	ND		79.8		CS 123469-HxCDF	90.6	
Total HpCDD	211		211		CS 1234689-HpCDF	84.5	
					AS 1368-TCDD	94.6	
Total TCDF	ND	44.2	ND		AS 1368-TCDF	99.6	
Total PeCDF	ND	48.4	ND				
Total HxCDF	ND	48.4	ND				
Total HpCDF	ND	58.2	ND				
Total PCDD/Fs	**211**		**692**				
WHO-2005 TEQs							
TEQ: ND=0	0.815		8.92				
TEQ: ND=DL/2	96.6	96.1	102				
TEQ: ND=DL	192	192	195				

SGS ANALYTICAL PERSPECTIVES
2714 Exchange Drive
Wilmington, NC 28405 , USA
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Sample ID: IS-1

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5767	Date Received:	26-Jul-2013
Project ID:	Crowley RIFS 101.00205.00030	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5767_11183_DF_001	Date Extracted:	29-Jul-2013
Date Collected:	23-Jul-2013	% Solids:	41.5 %	QC Batch No:	11183	Date Analyzed:	05-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	08:35:25

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers
2378-TCDD	EMPC		503	
12378-PeCDD	1930			J
123478-HxCDD	3620			
123678-HxCDD	10900			
123789-HxCDD	7830			
1234678-HpCDD	333000			
OCDD	3350000			
2378-TCDF	2310			
12378-PeCDF	2080			J
23478-PeCDF	4130			
123478-HxCDF	6120			
123678-HxCDF	2990			
234678-HxCDF	3690			
123789-HxCDF	ND	200		
1234678-HpCDF	47000			
1234789-HpCDF	4110			
OCDF	148000			
Totals				
Total TCDD	5710		7400	
Total PeCDD	17000		17400	
Total HxCDD	119000		119000	
Total HpCDD	1130000		1130000	
Total TCDF	38000		39200	
Total PeCDF	42600		42800	
Total HxCDF	79800		79800	
Total HpCDF	150000		150000	
Total PCDD/Fs	**5090000**		**5090000**	
WHO-2005 TEQs				
TEQ: ND=0	11900		12400	
TEQ: ND=DL/2	11900	272	12400	
TEQ: ND=DL	12000	543	12400	

Standard	ES Recoveries	Qualifiers
ES 2378-TCDD	92.2	
ES 12378-PeCDD	86.6	
ES 123478-HxCDD	88.9	
ES 123678-HxCDD	88.9	
ES 123789-HxCDD	84.7	
ES 1234678-HpCDD	85.5	
ES OCDD	79.1	
ES 2378-TCDF	95.5	
ES 12378-PeCDF	89.8	
ES 23478-PeCDF	90.6	
ES 123478-HxCDF	85.2	
ES 123678-HxCDF	84.1	
ES 234678-HxCDF	85.5	
ES 123789-HxCDF	89.9	
ES 1234678-HpCDF	88.4	
ES 1234789-HpCDF	85.4	
ES OCDF	77.1	
Standard	**CS/AS Recoveries**	
CS 37Cl-2378-TCDD	86.9	
CS 12347-PeCDD	85.5	
CS 12346-PeCDF	88.8	
CS 123469-HxCDF	83.9	
CS 1234689-HpCDF	81.8	
AS 1368-TCDD	91.8	
AS 1368-TCDF	99.9	

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Sample ID: IS-2

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5767	Date Received:	26-Jul-2013
Project ID:	Crowley RIFS 101.00205.00030	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5767_11183_DF_002	Date Extracted:	29-Jul-2013
Date Collected:	23-Jul-2013	% Solids:	53.1 %	QC Batch No:	11183	Date Analyzed:	05-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	09:27:58

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	854				ES 2378-TCDD	92.1	
12378-PeCDD	3220				ES 12378-PeCDD	90.6	
123478-HxCDD	6380				ES 123478-HxCDD	87.2	
123678-HxCDD	24100				ES 123678-HxCDD	85.4	
123789-HxCDD	12900				ES 123789-HxCDD	85.4	
1234678-HpCDD	803000				ES 1234678-HpCDD	91.3	
OCDD	7370000				ES OCDD	94.8	
2378-TCDF	2310				ES 2378-TCDF	94.5	
12378-PeCDF	2180			J	ES 12378-PeCDF	93.4	
23478-PeCDF	5570				ES 23478-PeCDF	92.1	
123478-HxCDF	8560				ES 123478-HxCDF	85.5	
123678-HxCDF	4940				ES 123678-HxCDF	80.4	
234678-HxCDF	7030				ES 234678-HxCDF	84.7	
123789-HxCDF	ND	214			ES 123789-HxCDF	88.6	
1234678-HpCDF	130000				ES 1234678-HpCDF	90.8	
1234789-HpCDF	10800				ES 1234789-HpCDF	87.9	
OCDF	804000				ES OCDF	89.8	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	89	
Total TCDD	9070		9500		CS 12347-PeCDD	86.2	
Total PeCDD	21400		22100		CS 12346-PeCDF	91.9	
Total HxCDD	218000		218000		CS 123469-HxCDF	83.9	
Total HpCDD	2380000		2380000		CS 1234689-HpCDF	91.6	
					AS 1368-TCDD	91	
Total TCDF	38400		39400		AS 1368-TCDF	90.2	
Total PeCDF	60700		61300				
Total HxCDF	170000		170000				
Total HpCDF	524000		524000				
Total PCDD/Fs	**11600000**		**11600000**				
WHO-2005 TEQs							
TEQ: ND=0	24300		24300				
TEQ: ND=DL/2	24300	265	24300				
TEQ: ND=DL	24300	530	24300				

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Sample ID: IS-3

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5767	Date Received:	26-Jul-2013
Project ID:	Crowley RIFS 101.00205.00030	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5767_11183_DF_003	Date Extracted:	29-Jul-2013
Date Collected:	23-Jul-2013	% Solids:	41.5 %	QC Batch No:	11183	Date Analyzed:	05-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	10:20:32

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers	Standard	ES Recoveries	Qualifiers
2378-TCDD	EMPC		502		ES 2378-TCDD	97.8	
12378-PeCDD	2170			J	ES 12378-PeCDD	95	
123478-HxCDD	3750				ES 123478-HxCDD	91.2	
123678-HxCDD	13700				ES 123678-HxCDD	91.4	
123789-HxCDD	7390				ES 123789-HxCDD	92.2	
1234678-HpCDD	399000				ES 1234678-HpCDD	95.8	
OCDD	3390000				ES OCDD	93.7	
2378-TCDF	2030				ES 2378-TCDF	104	
12378-PeCDF	1640			J	ES 12378-PeCDF	101	
23478-PeCDF	4140				ES 23478-PeCDF	101	
123478-HxCDF	6530				ES 123478-HxCDF	90.4	
123678-HxCDF	3470				ES 123678-HxCDF	86.2	
234678-HxCDF	4560				ES 234678-HxCDF	89.3	
123789-HxCDF	ND	166			ES 123789-HxCDF	93.9	
1234678-HpCDF	63600				ES 1234678-HpCDF	92.9	
1234789-HpCDF	5090				ES 1234789-HpCDF	94.7	
OCDF	240000				ES OCDF	93.1	
Totals					**Standard**	**CS/AS Recoveries**	
					CS 37Cl-2378-TCDD	95.9	
Total TCDD	6870		7870		CS 12347-PeCDD	93.5	
Total PeCDD	17500		17500		CS 12346-PeCDF	96	
Total HxCDD	121000		121000		CS 123469-HxCDF	91.1	
Total HpCDD	1060000		1060000		CS 1234689-HpCDF	94.1	
					AS 1368-TCDD	97.3	
Total TCDF	34900		35700		AS 1368-TCDF	103	
Total PeCDF	43900		43900				
Total HxCDF	101000		101000				
Total HpCDF	224000		224000				
Total PCDD/Fs	**5240000**		**5240000**				
WHO-2005 TEQs							
TEQ: ND=0	13400		13900				
TEQ: ND=DL/2	13400	214	13900				
TEQ: ND=DL	13500	428	13900				

SGS ANALYTICAL PERSPECTIVES
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Sample ID: IS-4

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5767	Date Received:	26-Jul-2013
Project ID:	Crowley RIFS 101.00205.00030	Weight/Volume:	0.0106 Kg	Lab Sample ID	A5767_11183_DF_004	Date Extracted:	29-Jul-2013
Date Collected:	23-Jul-2013	% Solids:	49.7 %	QC Batch No:	11183	Date Analyzed:	05-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	11:13:03

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers
2378-TCDD	917			
12378-PeCDD	EMPC		3620	
123478-HxCDD	8080			
123678-HxCDD	25300			
123789-HxCDD	13100			
1234678-HpCDD	823000			
OCDD	8110000			
2378-TCDF	4930			
12378-PeCDF	4750			
23478-PeCDF	8040			
123478-HxCDF	10200			
123678-HxCDF	6000			
234678-HxCDF	7480			
123789-HxCDF	ND	224		
1234678-HpCDF	104000			
1234789-HpCDF	8130			
OCDF	335000			
Totals				
Total TCDD	14900		15500	
Total PeCDD	25600		29900	
Total HxCDD	256000		256000	
Total HpCDD	2820000		2820000	
Total TCDF	73300		74500	
Total PeCDF	89400		89400	
Total HxCDF	168000		168000	
Total HpCDF	349000		349000	
Total PCDD/Fs	**12200000**		**12200000**	
WHO-2005 TEQs				
TEQ: ND=0	22900		26500	
TEQ: ND=DL/2	23000	297	26500	
TEQ: ND=DL	23100	594	26500	

Standard	ES Recoveries	Qualifiers
ES 2378-TCDD	94.4	
ES 12378-PeCDD	96.6	
ES 123478-HxCDD	90.8	
ES 123678-HxCDD	89.5	
ES 123789-HxCDD	89	
ES 1234678-HpCDD	96.1	
ES OCDD	95	
ES 2378-TCDF	96.5	
ES 12378-PeCDF	95.6	
ES 23478-PeCDF	96.1	
ES 123478-HxCDF	84.5	
ES 123678-HxCDF	85.4	
ES 234678-HxCDF	87.7	
ES 123789-HxCDF	88.1	
ES 1234678-HpCDF	87.9	
ES 1234789-HpCDF	89.4	
ES OCDF	88.1	
Standard	**CS/AS Recoveries**	
CS 37Cl-2378-TCDD	91.1	
CS 12347-PeCDD	94.4	
CS 12346-PeCDF	93.9	
CS 123469-HxCDF	89	
CS 1234689-HpCDF	96	
AS 1368-TCDD	94.7	
AS 1368-TCDF	97.3	

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Sample ID: IS-5

Method 8290A

Client Data		Sample Data		Laboratory Data			
Name:	SLR International Corporation	Matrix:	Solids	Lab Project ID:	A5767	Date Received:	26-Jul-2013
Project ID:	Crowley RIFS 101.00205.00030	Weight/Volume:	0.0100 Kg	Lab Sample ID	A5767_11183_DF_005	Date Extracted:	29-Jul-2013
Date Collected:	24-Jul-2013	% Solids:	44.2 %	QC Batch No:	11183	Date Analyzed:	05-Aug-2013
		Split:	-	Dilution:	-	Time Analyzed:	12:05:37

Analyte	Conc. (pg/Kg)	DL (pg/Kg)	EMPC (pg/Kg)	Qualifiers
2378-TCDD	1120			
12378-PeCDD	3190			
123478-HxCDD	6260			
123678-HxCDD	17200			
123789-HxCDD	10900			
1234678-HpCDD	489000			
OCDD	3820000			
2378-TCDF	5090			
12378-PeCDF	2930			
23478-PeCDF	7450			
123478-HxCDF	11100			
123678-HxCDF	5980			
234678-HxCDF	6570			
123789-HxCDF	ND	204		
1234678-HpCDF	77000			
1234789-HpCDF	6560			
OCDF	248000			
Totals				
Total TCDD	11000		11300	
Total PeCDD	24000		24000	
Total HxCDD	161000		161000	
Total HpCDD	1260000		1260000	
Total TCDF	66300		67400	
Total PeCDF	75400		75400	
Total HxCDF	133000		133000	
Total HpCDF	238000		238000	
Total PCDD/Fs	**6040000**		**6040000**	
WHO-2005 TEQs				
TEQ: ND=0	19900		19900	
TEQ: ND=DL/2	19900	282	19900	
TEQ: ND=DL	19900	564	19900	

Standard	ES Recoveries	Qualifiers
ES 2378-TCDD	93.1	
ES 12378-PeCDD	93	
ES 123478-HxCDD	86.9	
ES 123678-HxCDD	87	
ES 123789-HxCDD	86.6	
ES 1234678-HpCDD	88.8	
ES OCDD	86.7	
ES 2378-TCDF	95.2	
ES 12378-PeCDF	95.5	
ES 23478-PeCDF	94.2	
ES 123478-HxCDF	84.4	
ES 123678-HxCDF	80.9	
ES 234678-HxCDF	84.2	
ES 123789-HxCDF	89.1	
ES 1234678-HpCDF	91	
ES 1234789-HpCDF	88.3	
ES OCDF	82.5	

Standard	CS/AS Recoveries
CS 37Cl-2378-TCDD	89.9
CS 12347-PeCDD	90.6
CS 12346-PeCDF	95.5
CS 123469-HxCDF	86.6
CS 1234689-HpCDF	86.3
AS 1368-TCDD	89.3
AS 1368-TCDF	93.7

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ANALYTICAL PERSPECTIVES

CHAIN-OF-CUSTODY RECORD

PROJECT ID: Crowley RIFS 101.00205.00030 | P.O. No.: 101.00205.00030 | SAMPLER: Amanda Mengriot (PRINTED NAME) (SIGNATURE)

RELINQUISHED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:	RECEIVED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:
Amanda Mengriot	7/25/13	1100			
RELINQUISHED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:	RECEIVED BY: (SIGNATURE & PRINTED NAME)	DATE:	TIME:

PLEASE SEE NOTES ON THE BACK OF THE COC REGARDING THE SAMPLE ACCEPTANCE POLICY AND THE METHOD 8290 MS/MSD & DUP

REQUESTED TAT: 21 DAYS

SHIP TO: ANALYTICAL PERSPECTIVES, 2714 EXCHANGE DRIVE, WILMINGTON, NC 28405, PH.: 910-794-1613

ATTN: YVES TONDEUR

METHOD OF SHIPMENT: Fed Ex

SHIPMENT ID:

QAPP REFERENCE: _____
SAMPLE ACCEPTANCE POLICY (ON BACK SIDE)

SAMPLE ID	DATE	TIME	SAMPLE DESCRIPTION	MS/MSD	DUP	METHOD 8290	METHOD 1613	METHOD 1668A	METHOD 1668B	METHOD 1668C	PAHS BY HRMS	QUANTIC	U-SVOA	WHO-2/WHO-2S	CONTAINER(S) QTY	CONTAINER(S) TYPE	MATRIX
IS-1	7/23/13	1225	4oz jar of intertidal sediment			X									1	4oz jar	SEDIMENT
IS-2	7/23/13	1300	↓			X									1	↓	↓
IS-3	7/23/13	1335	↓			X									1	↓	↓
IS-4	7/23/13	1350	↓			X									1	↓	↓
IS-5	7/24/13	1200	↓			X									1	↓	↓

SPECIAL INSTRUCTIONS/COMMENTS: (PLEASE CIRCLE OPTION BELOW)

("DF ONLY") "DF & PCB" "DF & PAH" "DF & PCB & PAH"

"TRI – OCTA" "2,3,7,8-TCDD & F ONLY" "2,3,7,8-TCDD ONLY"

PLEASE SPECIFY TEFs: (PLEASE CHECK BOXES BELOW)

☐ "ITEFS" ☐ "WHO-98" ☒ "WHO-05" ☐ "MA-TEFS" ☐ "CT-TEFS"

SEND DOCUMENTATION & RESULTS TO:

NAME: MIKE STATON
COMPANY: SLR INTERNATIONAL
ADDRESS: 22118 20th AVE SE G202
CITY: BOTHELL
STATE: WA ZIP: 98021
PH.: 425-402-8800
E-MAIL: mstaton@slrconsulting.com

BILL TO: (☒ CHECK IF SAME)

NAME:
COMPANY:
ADDRESS:
CITY:
STATE: ZIP:
PH.:

ECOLOGY DRAFT DATA GAP REPORT COMMENT LETTER

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
711 for Washington Relay Service • Persons with a speech disability can call 877-833-6341

April 21, 2014

Mr. Stephen Wilson
Director
Health, Safety, Security, Environmental and Quality
CPD Alaska, LLC
201 Arctic Slope Avenue
Anchorage, AK 99518

Re: Agreed Order No. DE 6721
Draft Data Gaps Report, First Phase of Remedial Investigation,
8th Avenue Terminals Site, Seattle, WA, February 14, 2014

Dear Mr. Wilson:

This letter contains the Department of Ecology's (Ecology) comments on the Draft Data Gaps Report submitted on February 14, 2104, and summarizes our evaluation of the remaining data gaps. These data gaps are required to be addressed in a draft Sampling and Analysis Plan Addendum (Addendum) to the Remedial Investigation and Feasibility Work Plan, October 2012 for the Phase 2 Remedial Investigation as required by the Agreed Order No. DE 6721 and Ecology's letter of May 23, 2013, Resolution of Dispute. The draft Addendum is due on June 13, 2014, for Ecology review.

This letter also provides an extension of the schedule requirement in Agreed Order No. DE 6721 to complete field work for the remedial investigation (RI) from May 23, 2014, to November 21, 2014. This will allow for the Phase 2 investigation activities in the Addendum to be conducted.

To facilitate evaluation of the site data, Ecology prepared the enclosed draft maps for soil, groundwater and intertidal sediment contaminants arsenic, lead, carcinogenic PAHs, naphthalene, total petroleum hydrocarbons (TPH), and summaries of other contaminants. Maps for polychlorinated biphenyls (PCBs) and dioxins/furans were prepared for soil.

Based on our review, the primary site areas that require additional investigation and characterization include:

- The western margin of the property, including the parking area and right-of-way west of the existing borings and wells; primarily for, but not limited to, metals, PAHs, and TPH.

- The northern margin and northeastern corner of the property; primarily for, but not limited to, metals, TPH, volatile organic carbons (VOCs) and PCBs.

- The southwestern corner of the property; primarily for, but not limited to, metals, PAHs, TPH, and PCBs.

- The area beneath and down-gradient from the former wood treatment facility; primarily for, but not limited to, PAHs. PCBs, TPH, VOCs; pentachlorophenol and metals are also not fully delineated at some locations in this area.

The following section includes our responses for each of the data gaps identified by SLR in the Draft Data Gaps Report and summarized in Section 8. Ecology's responses are below each item in italic text.

1. The source and the lateral and vertical extents of the oily substance with a creosote-like odor in deep boring EMW-l0D (at the former wood treating operations area) have not been determined.

   Additional characterization of the lateral and vertical extent of soil affected by possible creosote-related contaminants is needed.

2. The lateral extents of the PAH-impacted soil have not been delineated to the north, northeast, northwest, and west and the vertical extents of the impacted soil have not been determined at several locations throughout the property.

   Ecology considers that these areas of PAH impacts require delineation, and the areas requiring the most additional investigation appear to be the western margin of the site in both shallow and deep soil, the area around and downgradient of the former wood treatment facility.

3. The lateral extents of the main area of arsenic- and lead-impacted soil have not delineated to the west of the property, and the lateral extents of two localized areas of arsenic-impacted soil at the western part of Parcel F are not defined. The western and northeastern extents of the long area of lead-impacted soil on Parcel F and the northern extent of the northern area of lead-impacted soil (north of the property) have not been delineated. Also, the lateral extents of a localized area of lead-impacted soil at the western part of Parcel F are not defined.

   Metals contamination in these areas, including off-site to the west of the property, are not defined. The full-suite of metals analyses as listed in the current RI and FS Work Plan should be considered at these locations.

4. The vertical extents of the arsenic- and lead-impacted soil have not been delineated at several locations throughout the property.

These locations need to be specified in the Addendum and include locations where the deepest analyzed sample had arsenic and/or lead concentration above the screening level. The full-suite of metals analyses as listed in the current RI and FS Work Plan should be considered at these locations.

5. The vertical extents of the PCB-impacted soil at boring DB-12, the 2- methylphenol-impacted soil at boring HC-13, and the di-n-octyl phthalate- impacted soil at boring CMW-4 have not been defined.

   Add borings as required to characterize nature and extent of contamination near the listed locations.

6. The source of 1,1-dichloroethene in soil at FMW-2 has not been determined, and may be associated with activities at the neighboring Markey Machinery Company facility.

   Perform additional sampling to verify and characterize extent as necessary.

7. The preliminary soil cleanup levels for petroleum hydrocarbons are very conservative (MTCA Method A levels) because the data necessary to calculate site-specific, risk-based Method B cleanup level for TPH have not been collected. After collecting the data and calculating the Method B cleanup level, the existing data can be evaluated to determine if the lateral and vertical extents of the petroleum hydrocarbon-impacted soil have been delineated.

   The lateral and vertical extent should also be characterized based on the MTCA Method A levels for areas where TPH impacts are not currently delineated. Note that the TPH concentrations identified in proximity to the former wood treatment area could be related to creosote rather than petroleum-based hydrocarbon, or to both, so PAHs should also be included in the risk-based cleanup level calculations.

8. The source of petroleum hydrocarbons in the soil at EMW-7S has not been identified and may be associated with off-property activities.

   Additional evaluation is warranted in this area, particularly to the west of EMW-7S.

9. The lateral extents of each area of dioxin-impacted soil have not been delineated, and the vertical extent of the impacted soil is not defined at boring EMW-9S.

   Additional assessment of dioxins/furans is needed to delineate the lateral and vertical extent. Assessment should also include areas where dioxin/furan sampling has not been previously performed to determine if the detected concentrations represent a site-wide "background" or localized hot spots.

10. We have assumed that the observed westernmost arm of the sheet pile seawall extends to the same depth as the rest of the wall; however, there are no records to verify that assumption. Since the seawall serves as a barrier to shallow groundwater flow, the depth of that section of the seawall is needed to determine if the shallow groundwater flows around the western end of the observed seawall or the western end of the pier.

    Additional wells in the shallow-zone and deep-zone may also be needed to characterize hydrogeologic conditions in the southwestern portion of the site and to evaluate the extent to which the seawall affects groundwater flow and discharge to surface water.

11. Additional groundwater sampling should be conducted at the groundwater compliance wells to further evaluate the groundwater COPCs for the site.

    Additional groundwater sampling should include all wells necessary to evaluate the extent of impacts and to address data gaps, including any new wells that are installed for Phase 2 of the RI. Analyses should include the "full suite" for each type of contaminant that requires additional assessment (i.e. all PAHs, all metals, etc. as listed in the RI and FS Work Plan).

12. The lateral extent of PAH-impacted groundwater has not been delineated to the west of the property (west of HC-20 and EMW-7S), and the vertical extents of the PAH-impacted groundwater have not been defined at wells EMW-4D and EMW-14D.

    The shallow and deep PAH impacts to groundwater are not fully characterized laterally along the western property margin including the southwest corner, and vertically at the indicated wells. PAH characterization should include both cPAHs and naphthalene, both of which are typical of creosote. Ecology's assessment of cPAHs was based on total cPAHs. SLR's maps are based on benzo(a)anthracene and chrysene. The overall area of cPAH impacts is similar in both cases.

13. The preliminary cleanup level for arsenic is based on a regional background concentration; however, groundwater samples from the upgradient wells (EMW-1S EMW-6S, and EMW-7S) on the property contained arsenic concentrations much greater than the preliminary cleanup level. Additional groundwater sampling is needed at the upgradient wells and possibly upgradient of the property to evaluate the arsenic concentrations flowing onto the property (background conditions). After the background arsenic concentration for the property has been established, it may be possible to delineate the lateral and vertical extents of the arsenic- impacted groundwater.

    Additional evaluation of background concentrations for arsenic may be warranted, but the preliminary screening level of 0.87 ug/l is fairly low. The MTCA Method A and LDW surface water proposed cleanup level of 5 ug/l may be more appropriate for delineation of the extent of groundwater impacts. Additional shallow-zone and deep-zone wells may be needed to evaluate the extent of arsenic impacts to groundwater.

Analytical testing should include the full-suite of metals as described in the RI and FS Work Plan, including any proposed "background" locations.

14. The lateral extents of the barium- and copper-impacted groundwater have not been delineated to the west of the property (west of EMW-11S), and the lateral extent of cadmium-impacted groundwater has not been delineated to the north of well EMW-3 (and northeast of well EMW-2S).

    In general, additional delineation of the lateral extent of metals in shallow groundwater should be considered for the western property margin, the southwestern corner, the northern property margin, and the northeastern corner north of the seawall. Analysis of the full-suite of metals based on the RI and FS Work Plan should be considered for existing wells and any new wells installed during Phase 2 of the RI.

15. The vertical extents of the barium-impacted groundwater have not been delineated near the seawall (at EMW-4D, EMW-14D, and EMW-16D), and the vertical extents of the cadmium-impacted groundwater are not delineated near the seawall (at EMW-4D) or below the former wood treating operations area (at EMW-10D).

    Additional delineation of the lateral and vertical extent of metals in deep groundwater should be performed. New deep-zone monitoring wells should be positioned to provide for evaluation of potential contaminant transport from upland areas to the LDW. Additional shoreline and upland deep wells should both be considered and ideally paired with shallow-zone wells. Analysis of the full-suite of metals based on the RI and FS Work Plan should be considered for existing deep wells and any new deep wells installed during Phase 2 of the RI.

16. Nickel analysis by ICP-DRC-MS is needed to evaluate if matrix interferences have been affecting the concentrations that were analyzed by EPA Method 200.8. After establishing if the ICP-DRC-MS or 200.8 method is appropriate for nickel, then the lateral and vertical extents can be properly evaluated.

    Perform additional groundwater analyses for nickel as needed to address data gaps, including all site wells that were analyzed for metals in 2013 plus any new wells installed for Phase 2 of the RI.

Additional data gaps identified during our review, some of which are similar to those discussed above, include the following:

- Currently, there are some large areas where soil sampling has not been previously performed. Some of these areas will likely be "filled in" based on the previously discussed data gaps and planned Phase 2 borings. However, based on the extensive fill history of the site, additional soil borings for general assessment and CSM revision should be considered for gaps greater than approximately 100 feet between existing soil borings.

- Metals impacts in soil are mostly located within the footprint of the arsenic- and lead-affected areas, and provide a good reference for overall metals impacts at the site. However, there are some areas, primarily in the northern and northeastern portions of the site, where other metals have been detected at concentrations above the screening levels. These include selenium, copper, cadmium, and barium. Many of the older soil borings did not include a full-suite of metals analyses, so the previous data set should be reviewed and soil borings proposed where needed to delineate the extent of these other metals impacts.

- To further assess potability of site groundwater and groundwater flow, along with the chloride and total dissolved solids data, a tidal study to measure groundwater flow should be included for Phase 2. Data from deep well EMW-10D indicates the potential presence of a marine or brackish water "wedge" beneath the site, however, no other deep wells are currently located in upland areas.

- In the northeastern corner of the site, PCE (at SLR-6) and vinyl chloride (at EMW-2S) were detected in groundwater samples at concentrations above screening levels. Vinyl chloride was also detected in groundwater at CMW-5 at a concentration above the screening level. Delineation of the extent of possible impacts should be considered at these locations, including additional groundwater sampling and possibly soil sampling to identify potential sources.

- The extent of PCB impacts in soil does appear to be generally delineated; however, much of the previous analytical data is based on reporting limits that are above the screening level making a full assessment difficult. Some level of additional soil sampling using lower reporting limits should be considered to verify the previous findings. PCBs were detected in shallow groundwater during 2013 at three locations (DMW-2, CMW-4, EMW-13S) suggesting that PCBs could be present in soil at some of the previous "non-detect" locations where reporting limits were elevated.

Phase 2 RI Sampling and Analysis Plan Addendum

In addition to including the Data Gap needs, the Addendum must also contain the following tasks planned for Phase 2 during the Dispute Resolution, and any tasks remaining to be completed, as described in the Remedial Investigation and Feasibility Study Work Plan, Crowley Marine Services 8th Avenue South Site, October 2012:

- Section 4.2.2 Soil Borings, modified by letter of May 23, 2013 - All soil borings planned for Phase 2 and shown in Figure 3 of the May 23, 2013 Resolution of Dispute Letter unless justification is provided for moving or eliminating the boring.

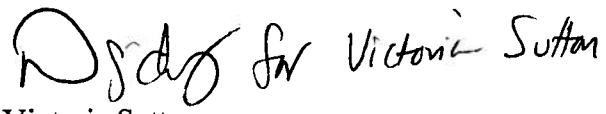
- Section 4.2.6, modified by letter of May 23, 2013 - Three remaining stormwater sampling events.

- Section 4.2.4 Conduct Groundwater Monitoring, modified by letter of May 23, 2013 - Two additional groundwater monitoring events. Analytes for these events may be modified by request to Ecology at least 30 days prior to the third quarterly monitoring event.

- Section 4.2.8 Sediment Sampling

Ecology appreciates your work on the Phase 1 Remedial Investigation and look forward to working with you on Phase 2. Please contact me at vsut461@ecy.wa.gov or (425) 649-7219 if you have any questions or would like to discuss this review.

Sincerely,



Victoria Sutton
Hydrogeologist
Toxics Cleanup Program

Enclosures

By Certified Mail [7011 0470 0003 3682 5056]

DRAFT SAMPLING AND ANALYSIS PLAN ADDENDUM

DRAFT SAMPLING AND ANALYSIS PLAN ADDENDUM

8TH AVENUE TERMINALS, INC.

Prepared for

DeNovo Seattle, LLC

100 South Wacker Drive, Suite LL1-50

Chicago, Illinois 60606

Prepared by

Anchor QEA, LLC

720 Olive Way, Suite 1900

Seattle, Washington 98101

In Association With

SLR International Corporation

November 2014

TABLE OF CONTENTS

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LIST OF ACRONYMS AND ABBREVIATIONS

The TOC Title style can also be used for an acronym list or any other front matter required for the document.

Abbreviation	Definition
µg/kg	micrograms per kilogram
8th Avenue Terminals	8th Avenue Terminals, Inc.
AO	Agreed Order
ARAR	applicable or relevant and appropriate requirement
ARI	Analytical Resources, Inc.
bgs	below ground surface
CAP	cleanup action plan
cm	centimeter
COC	chain-of-custody
COPC	constituent of potential concern
cPAH	carcinogenic polycyclic aromatic hydrocarbon
Crowley	Crowley Marine Services, Inc.
DAHP	Washington State Department of Archaeology and Historical Preservation
DCE	1,1-dichloroethene
DeNovo	DeNovo Seattle, LLC
DGPS	differential global positioning system
DNS	Determination of Non-significance
DRO	diesel range organics
Ecology	Washington State Department of Ecology
EPA	U.S. Environmental Protection Agency
EPH	extractable petroleum hydrocarbon
FS	Feasibility Study
FSP	Field Sampling Plan
GRO	gasoline range organics
LDW	Lower Duwamish Waterway
LOD	limit of detection

mg/kg	milligrams per kilogram
MS/MSD	matrix spike/matrix spike duplicate
MTCA	Model Toxics Control Act
NAD 83	North American Datum 1983
NAVD 88	North American Vertical Datum 1988
ng/kg	nanograms per kilogram
NPDES	National Pollutant Discharge Elimination System
ORP	redox potential
PCB	polychlorinated biphenyl Aroclor
PCE	tetrachloroethylene
PID	photoionization detector
PQL	practical quantitation limit
Property	8th Avenue Terminals Property
PSL	preliminary screening level
PVC	polyvinyl chloride
QA	quality assurance
QAPP	Quality Assurance Project Plan
RI	Remedial Investigation
RRO	residual oil-range organics
SAP	Sampling and Analysis Plan
SAP Addendum	Sampling and Analysis Plan Addendum
Site	8th Avenue Terminals Site
SLR	SLR International
SMS	Sediment Management Standards
SVOC	semi-volatile organic compound
TDS	total dissolved solids
TEE	Terrestrial Ecological Evaluation
TEQ	Toxic Equivalency
TOC	total organic carbon
TPH	total petroleum hydrocarbons
TSS	total suspended solids
vibracore	vibration core sampler
UCT	Universal Cell Technology

VOC	volatile organic compound
VPH	volatile petroleum hydrocarbon
WAC	Washington Administrative Code
Work Plan	Washington State Department of Ecology's 2012 Remedial Investigation/Feasibility Study Work Plan

1 INTRODUCTION

On October 12, 2009, 8th Avenue Terminals, Inc. (8th Avenue Terminals), entered into an Agreed Order (AO; No. DE 6721) with the Washington Department of Ecology (Ecology) to complete a remedial investigation (RI) and feasibility study (FS), and prepare a cleanup action plan (CAP) for the 8th Avenue Terminals, Inc., site (Site). On April 18, 2014, the 8th Avenue Terminals, Inc. property (Property) was purchased by DeNovo Seattle, LLC (DeNovo), and the responsibility for completing the required activities under the AO was transferred to DeNovo. The Site is defined by the extent of contamination caused by the release of hazardous substances at the Property at 7400 8th Avenue South in Seattle, Washington. The Property is located along the northeast bank of the Duwamish Waterway and the west bank of Slip 4, and includes the southwestern part of Slip 4 (see Figure 1-1).

This RI/FS process is part of Ecology's effort to investigate properties adjacent to the federal Lower Duwamish Waterway (LDW) Superfund Site for potential ongoing sources of contamination to the Superfund Site. In early 2008, Ecology issued a Site Hazard Ranking of "2" for the site, due in large part to the perceived potential of contaminants on the Property to migrate to the LDW sediments (primarily Slip 4). In response, Crowley Marine Services, Inc. (Crowley), the former property owner, conducted an independent investigation at the Property to assess the potential contaminant migration pathways to the waterway. A report that presented the results of that investigation was submitted to Ecology on August 1, 2008 (SLR 2008).

Under the AO, 8th Avenue Terminals was required to provide additional data and analysis to determine the potential risks to the LDW posed by the Property, to determine if active cleanup of the Site is necessary and, if so, to facilitate the selection of a cleanup alternative. More specifically, the RI will determine the nature and extent of contamination and assess the potential risks to human health and the environment. The FS will identify, screen, and evaluate potential remedial measures. Based on the results of the RI/FS, the CAP will present a proposed remedial action to address the remediation of contamination present at the Site, as necessary.

After the negotiation of an RI scope of work, 8th Avenue Terminals agreed to conduct the scope of work developed by Ecology and presented in Ecology's RI/FS Work Plan (Work Plan) dated October 2012 (Ecology 2012) after modifications to the scope were accepted by both parties (Ecology 2013; see Appendix A-1). In accordance with Washington Administrative Code (WAC) 173-340-350(6) and (7)(a), the RI is being conducted in two phases to adequately characterize the Site, address critical questions, focus sampling efforts on data gaps, prevent the collection of unnecessary data, and increase the efficiency of the investigation. The first phase of the RI (Phase 1) was conducted from May 2013 through February 2014 by SLR International (SLR) and consisted of collecting the data necessary to assess the potential contaminant source areas that currently have limited data, to better understand contaminant fate and transport and associated potential receptors, and to further review the applicable or relevant and appropriate requirements (ARARs) for the Site. After identifying the appropriate ARARs for the Site, the preliminary conceptual site model was revised, contaminants of potential concern (COPCs) were identified, and preliminary soil and groundwater screening levels were developed for the COPCs in accordance with WAC 173-340-350(9)(a).

A Draft Data Gaps Report dated February 2014 (SLR 2014a) was prepared and described the field activities performed during Phase 1 of the RI, presented the results of the work, including the revised preliminary conceptual site model and the proposed preliminary soil and groundwater screening levels, and identified the remaining investigation data gaps that would be addressed during the Phase 2 investigation. The Data Gaps Report was finalized by SRL in October 2014 (see Appendix A-2). Ecology provided comments to the Data Gaps Report and summarized an evaluation of the remaining data gaps (Ecology 2014; see Appendix A-3). In addition, during a meeting between Ecology and DeNovo on October 1, 2014, Ecology presented a series of maps (prepared by Kennedy/Jenks Consultants) with a revised conceptual site model and focus on further data collection needs for Phase 2 of the RI (see Appendix A-4)[1].

[1] During its review, Ecology did not consider the preliminary cleanup levels, conditional points of compliance wells, and non-potability determination identified in the 2014 SLR's Draft Data Gaps Report. Ecology comments considered these elements to be 'preliminary' in this phase of the investigation and identified that these items will be revisited during completion of the RI/FS process.

In coordination with Ecology and DeNovo, SLR and Anchor QEA conducted soil sampling and chemical testing in July 2014 to support implementation of planned development activities (i.e., rail construction) that were determined by Ecology to be completed under an interim action process. As part of that interim action planning effort, soil samples were collected at 42 locations throughout the Site and groundwater samples were collected from three existing site monitoring wells that were subsequently decommissioned (Figure 2-1) in anticipation of construction of the interim action. Appendices B and C present final laboratory and data validation reports for the July 2014 soil and groundwater sampling efforts.

As part of the interim action, the purpose of the July 2014 sampling effort was to evaluate soil conditions throughout the proposed interim action project area, and to develop the extents of planned soil removal activities associated with the interim action. As part of the July 2014 investigation, continuous soil samples were obtained from the anticipated bottom depth(s) of excavation, as well as from deeper (2-foot) intervals, including one from the top of the saturated zone, and one each from approximately 15 and 20 feet below ground surface (bgs). Soil samples from the uppermost sample at each location and groundwater samples (collected from site monitoring wells EMW-5S, DMW6, and MW-2) were analyzed for COPCs identified for the Site.

In August 2014, Ecology withdrew their Determination of Non-Significance (DNS) as part of the Model Toxics Control Act (MTCA) State Environmental Policy Act process, and the planned interim action (including site development activities for construction of new rail access) was not implemented. DeNovo then began coordination efforts with Ecology for completion of required supplemental Site investigation activities, development of RI and FS reports, and a CAP, in accordance with the AO for the Site.

This draft Sampling and Analysis Plan (SAP) Addendum (Addendum) document addresses the second phase (Phase 2) of the RI and identifies the RI data gaps for the Site (described in Section 2), thereby completing the investigation of the nature and extent of the contamination at the Site and the assessment of any potential risks to human health and the environment presented by the contamination. Completion of the Phase 2 investigations

described in this SAP Addendum will also allow for development of the RI and FS reports, as required by the AO.

1.1 Purpose

The purposes of this draft SAP Addendum are to describe the proposed scope of work for Phase 2 of the RI, and to specify procedures for implementation of the proposed field activities and sample analyses that will serve as the basis for development of the RI and FS reports, as required by the AO.

1.2 Sampling and Analysis Plan Organization

The draft SAP Addendum is organized in five sections. A brief description of each section is presented below:

- Section 1—Introduction. Section 1 contains an overview of the draft SAP Addendum.
- Section 2—Remaining Investigation Data Gaps. Section 2 contains an overview of the data gaps presented in the Data Gaps Report (SLR 2014a) and updates to RI data gaps based on the July 2014 interim action soil sampling effort.
- Section 3—Remedial Investigation Scope of Work (Phase 2). Section 3 presents the proposed scope of work that will be performed during Phase 2.
- Section 4—Field Sampling Plan (FSP) Section 4 identifies the proposed sampling locations and depths, and presents the procedures to be used in field sampling and characterization studies. Included are procedures for drilling and soil sampling; soil, groundwater, storm water, and sediment sample collection; sample labeling, shipping, and custody; groundwater monitoring well installation and development; decontamination; and residuals management.
- Section 5—Analytical Methods. Section 5 identifies the analyses and analytical methods that will be used during Phase 2 of the RI.

A Quality Assurance Program Plan (QAPP, Ecology 2012) that describes the quality assurance/quality control procedures for the proposed Phase 2 field activities and laboratory analyses is presented in Appendix D of the Work Plan. Phase 2 of the RI will be conducted in accordance with the QAPP. Current analytical methods and laboratory practical

quantitation limits (PQLs) for each medium supersede those included in Ecology's 2012 QAPP and are presented in Section 5.

2 REMAINING INVESTIGATION DATA GAPS

Based on the results of the first phase of the RI, SLR identified several remaining investigation data gaps (Appendix A-2; SLR 2014a and 2014b) to address during implementation of Phase 2 of the RI. On April 21, 2014, Ecology commented on the data gaps identified in the Data Gaps Report, and provided additional recommendations (Appendix A-3; Ecology 2014). In July 2014, additional soil and groundwater data were collected and analyzed as part of the interim action and planned redevelopment activities for the Site. Historical and Phase 1 RI data, along with the recent July 2014 data (all existing locations shown in Figure 2-1), were evaluated against Site-specific soil and groundwater screening levels (described below), and are used herein to identify remaining data gaps as part of Phase 2 of the RI. Additional discussion of data gaps occurred at a meeting with DeNovo and Ecology on October 1, 2014, where Ecology consultants (Kennedy/Jenks) provided technical information to support Ecology's comments that were issued in September 2014 (Appendix A-4) regarding the draft SAP Addendum submitted in June 2014.

2.1 Preliminary Screening Levels

Preliminary screening levels (PSLs) were developed for soil and groundwater contaminants by evaluating potential pathways and exposure scenarios applicable to the Site. The basis for development of the PSLs is the protection of the highest beneficial use of each Site medium, including protection of human health and the environment (with respect to protection of surface water and sediment quality in the LDW), and ensuring that all the requirements of federal, state and local regulations are satisfied. The pathway and exposure scenarios evaluation for potential soil and groundwater contamination included conservative pathway assumptions and accounted for Site-specific conditions. A summary of the potential pathways for the ARAR evaluation is included in Table 2-1. Based on pathways applicable to the Site, an ARAR evaluation for Site soil and groundwater is presented in Tables 2-2 and 2-3. These tables present each potential ARAR and the rationale for their identification, and provide justification as to whether the potential ARAR is retained as a Site-specific PSL. A description of the pathway and ARAR evaluation process for each medium is provided below.

2.1.1 Pathway Evaluation

A summary of the applicable pathways for the ARAR evaluation is presented in Table 2-1. Site soil and groundwater have potential exposure pathways to human health and/or ecological receptors. For upland soils, the primary exposure pathway is direct contact, so direct contact ARARs are applied. Soil-to-groundwater leaching of contaminants is an applicable pathway for upland soils, and therefore, relevant soil ARARs under MTCA include those derived for protection of groundwater. Groundwater at the Site is assumed to be non-potable, and final determination of this assumption will be made in the RI report in coordination with Ecology. The soil ARARs evaluation for protection of groundwater at the Site was conducted based on this assumption.

The groundwater exposure pathways are defined by protection of the highest beneficial use of Site groundwater. Both groundwater and surface water at the Site are non-potable based on MTCA criteria (WAC 173-340-720[2]), and this will be verified as part of the final RI report. Groundwater at the Site discharges to the LDW and therefore, must be protective of LDW human health and aquatic life exposure pathways for both surface water and sediment.

2.1.2 ARAR Evaluation

A summary of the soil, groundwater, and surface water ARARs that were evaluated are included in Tables 2-2 and 2-3. The ARAR evaluation includes a review of the applicability of each potential ARAR to the Site and whether a potential ARAR is retained or not retained in the determination of Site-specific PSLs. In additional to identifying ARARs, the Site-specific soil and groundwater PSLs were determined based on the following assumptions:

- **Promulgated ARARs.** Promulgated ARARs established under state or federal law are retained as site-specific PSLs.
- **Unrestricted Land Use.** The property is zoned as industrial; however, for purposes of determining soil PSLs, unrestricted land use is assumed.
- **Terrestrial Ecological Evaluation (TEE).** A TEE for Site soils is assumed not to be applicable, given the industrial setting of the Site; however, analysis of the proximity to the Slip 4 habitat restoration area will be evaluated as part of the RI to determine if completion of a TEE is required.
- **Natural Background.** The Site-specific soil PSLs take into account natural background

concentrations for select metals published by Ecology. Groundwater natural background concentrations were not used for determination of groundwater Site-specific PSLs.

- **Soil to Groundwater.** Potential ARARs for soil protective of groundwater are based on the most stringent potential groundwater and surface water ARARs that apply to the Site, and were calculated using MTCA Equation 747-1 (WAC 173-340-747(4)(b)) with a calculated average Site-specific organic carbon content of 0.4 percent.
- **Conservative Pathway Assumptions.** The potential soil ARARs protective of groundwater do not take into account Site-specific conditions (e.g., fate and transport processes).
- **Potable Water.** Based on groundwater salinity data collected from site monitoring wells, groundwater beneath the Site is assumed to be non-potable, and this assumption will be verified during development of the RI report. The LDW surface water is also determined to be non-potable; and therefore, potential soil ARARs are protective of non-potable groundwater and surface water for the purposes of Phase 2 investigation planning.

2.1.3 Determination of Site-Specific Preliminary Screening Levels

The evaluation of potential pathways and ARARs resulted in the determination of Site-specific PSLs for soil and groundwater. PSLs were the lowest value of those ARARs retained in Section 2.1.2. After determining the PSLs, the PQLs that were established for each analytical method were compared to PSLs. If the lowest possible PQL exceeded the PSL, then the PQL was identified as the PSL. Site-specific PSLs for soil and groundwater are presented in Tables 2-4 and 2-5.

2.2 Soil Data Gaps

Soil data gaps were determined based on a review of historical data, Phase 1 RI data, and recent (July 2014) interim action Site data (see the summary of soil results in Tables 2-6 through 2-10) by comparing these data to Site-specific preliminary soil PSLs, as described in the previous section. The remaining RI data gaps for soils, to be fulfilled as part of Phase 2 investigations, are outlined below. A summary of RI data gaps was identified by SLR in the Data Gaps Report, by Ecology in their comments to the document, and in meeting materials

and maps provided by Kennedy/Jenks on October 1, 2014, as well as DeNovo's responses and comments addressing each data gap as part of Phase 2 data collection efforts. This summary is also included in Table 3-1. In addition, six cross-sections (Figures 2-2a through 2-8f) and two plan views (Figures 2-9a through 2-10b) have been developed to aid in determining the vertical and lateral extent of soil contamination for the COPCs.

The following describes a summary of the remaining soil data gaps that require further evaluation in the RI/FS process to determine nature and extent of contamination at the Site:

- The lateral extents of arsenic-impacted soil were evaluated using a PSL of 7 milligrams per kilogram (mg/kg), which is currently considered the natural background level for arsenic. Based on that evaluation, the lateral extents of arsenic-impacted soil have not been delineated to the west of the Property, and the lateral extents of two localized areas of arsenic-impacted soil at the western part of Parcel F (Figure 2-1) are not defined. The vertical extents of the arsenic-impacted soil have not been delineated at several locations throughout the Site.
- The lateral extents of lead-impacted soil at the Site were evaluated using a PSL of 17 mg/kg, which is the natural background level. Based on that evaluation, the lateral extents of lead-impacted soil have been delineated at most locations, except along the western part of Parcels D and F (Figure 2-1). The vertical extents of lead-impacted soil (i.e., above the PSL) have not been delineated at several shoreline borings.
- The lateral extents of copper-impacted soil at the Site were evaluated using a PSL of 36 mg/kg, which is the natural background level. Based on that evaluation, the lateral extents of copper-impacted soil have been delineated at most locations, except along the western part of Parcel D. The vertical extents of copper-impacted soil (i.e., above the PSL) have been mostly delineated, except at shoreline location CMW-3 (Figure 2-1).
- The lateral and vertical extents of naphthalene-impacted soil at the site were evaluated using a PSL of 2,262 micrograms per kilogram (µg/kg), which is based on the MTCA Method B Direct Contact/Ingestion cleanup level soil, and was calculated using site-specific assumptions. Based on the evaluation of site soil data to the PSL, the lateral extents of the naphthalene-impacted soil have not been delineated to the east of the former aluminum window manufacturing plant (near the Property line) and in the area east and south of the former wood treatment facility. The vertical

extents of the naphthalene-impacted soil have not been determined at several locations throughout the Site.

- The lateral and vertical extents of total carcinogenic polycyclic aromatic hydrocarbon (cPAH)-impacted soil at the site were evaluated using a PSL of 100 µg/kg, which corresponds to the MTCA Method A Unrestricted Land Use soil cleanup level. The lateral extents of the total cPAH-impacted soil have not been delineated east and south of the former wood treatment facility, along the western property boundary, and in the area surrounding the former pipe manufacturing building (Figure 2-1). The vertical extents of the total cPAH-impacted soil have not been determined at several locations throughout the Site.
- The extents of polychlorinated biphenyl (PCB)-impacted soil at the property were evaluated using a PSL of 47 µg/kg, which is the MTCA Method B Direct Contact/Ingestion cleanup level that was calculated using site-specific data (WAC 173-340-747). Based on that evaluation, the lateral extents of PCB-impacted are mostly delineated, except along the southern Site shoreline, and in the upland areas between the former wood treatment and storage areas and shoreline of Slip 4. The vertical extents of PCB-impacted soil have not been delineated in the vicinity of the former creosote tanks (e.g., boring DB-12) (Figure 2-1).
- The source of 1,1-dichloroethene (DCE) in soil at FMW-2 (Figure 2-1) has not been determined, and may be associated with activities at the neighboring Markey Machinery Company facility.
- The extents of Diesel Range Organics (DRO)- and Residual Oil-Range Organics (RRO)- impacted soils were evaluated using a PSL of 2,000 mg/kg, which corresponds to the MTCA Method A unrestricted land use level for both total petroleum hydrocarbon (TPH) constituents. The data necessary to calculate a Site-specific, risk-based Method B cleanup level for TPH have not yet been collected. Therefore, Phase 2 of the RI will include the collection of, extractable petroleum hydrocarbons (EPH) and volatile petroleum hydrocarbons (VPH) to calculate Method B cleanup levels that are appropriate for the Site. Based on the evaluation of soil DRO and RRO data to the PSL, the lateral extent of DRO and RRO-impacted soil has not been delineated to the west of EMW-7S and EB-40 (Figure 2-1).
- The source and the lateral and vertical extents of the oily substance with a creosote-like odor in deep boring EMW-10D (at the former wood treating operations area)

have not been determined. The location of EMW-10D is shown on Figure 2-1.

- Total dioxins/furan concentrations were compared to the PSL of 5.2 nanograms per kilogram (ng/kg), which is the natural soil background level for total dioxins/furans Toxic Equivalency (TEQ; Ecology 2010). The lateral extents of each area of dioxin/furan-impacted soil have not been delineated, and the vertical extent of the impacted soil is not defined at boring EMW-9S (Figure 2-1).

2.3 Groundwater Data Gaps

Data gaps were determined based on a review of recent site groundwater data, including 2013 Phase 1 RI data and July 2014 interim action data (see the summary of groundwater results in Tables 2-11 through 2-14) by comparing these data to Site-specific groundwater PSLs, as described in Section 2.1. Historical groundwater data collected from 1988 to 2012 were not included in the data gaps evaluation, as these data are not representative of current Site groundwater conditions; historical site groundwater data, screened to Site-specific PSLs, are included in Appendix D for informational purposes only. The remaining RI data gaps for groundwater, to be fulfilled as part of Phase 2 investigations, are outlined below. A summary of RI data gaps identified by SLR and Ecology, as well as DeNovo's data gap comments are also included in Table 3-1. In addition, eight plan view maps (Figures 2-11 through 2-18) have been developed to aid determining the lateral extent of groundwater contamination for the COPCs.

The following describes a summary of the remaining groundwater data gaps that require further evaluation in the RI/FS process to determine the nature and extent of contamination at the Site:

- The lateral extent of total cPAH-impacted groundwater has not been delineated to the west of the Property (e.g., west of EMW-7S), and downgradient from the former wood treatment facility. The vertical extents of total cPAH-impacted groundwater have not been defined at wells EMW-4D and EMW-15D (Figure 2-1).
- The lateral and vertical extents of metals impacts to groundwater have not been fully delineated at the Site, specifically along the western property margin, the southwest shoreline, and along the western shoreline adjacent to the seawall.
- Though volatile organic compounds (VOCs) are not typically above groundwater

PSLs, the extent of potential tetrachloroethylene (PCE) and vinyl chloride impacts to Site groundwater should be verified at all wells.

- Potential matrix interferences in total and dissolved metals results, including those caused by groundwater salinity (i.e., polyatomic interferences), will be evaluated as part of Phase 2 groundwater analyses by using EPA Method 200.8 with Universal Cell Technology (UCT).

2.4 Sediment Data Gaps

Based on the previous sediment dredging adjacent to the Property, the extensive sediment sampling that has been conducted in the LDW and Slip 4, and EPA's planned remedial action for the LDW Superfund Site, few sediment data gaps remain for this Site (see the summary of sediment results in Table 2-15). In accordance with the Work Plan, additional surface sediment sampling will performed to provide baseline surface conditions in the barge berth areas.

During the October 1, 2014 meeting between Ecology and DeNovo, Ecology identified additional surface and subsurface sediment data gaps adjacent to the 8th Avenue right of way along the shoreline of the Duwamish River. The Ecology-identified data gaps include an evaluation of the nature and extent of contamination related to a historical sand dump and sand blast area near the southwestern corner of the Property, as depicted in a 1952 Georgetown Steam Plant Map (see Appendix E).

2.5 Catch Basin Solids and Storm Water Data Gaps

Catch basin solids sampling was completed in accordance with the Work Plan during Phase 1. No RI data gaps remain for catch basin solids and stormwater (see the summary of catch basin solids and storm water results in Tables 2-16 and 2-17). In accordance with the Work Plan, there will be one additional stormwater sampling event completed as part of Phase 2 investigations at the Site.

2.6 Cultural Resources Investigation

DeNovo is in the process of coordinating with the Washington State Department of Archaeology and Historical Preservation (DAHP) and Ecology to prepare and implement a

Cultural Resources investigation effort that will address planned remediation and redevelopment activities at the Site. The Site is identified as a location that may contain cultural resources (archaeological and/or historical resources), and a review of available historical information indicates that a set of pipes once crossed through the Property that were used to support operations associated with the former Seattle Electric Company Georgetown Steam Plant, which is included on the National Register of Historic Places. As such, it has been determined that a Cultural Resources investigation must be completed prior to implementation of remediation or redevelopment activities, in order to meet permitting requirements for the planned work. The scope of the Cultural Resources investigation is currently being coordinated with DAHP and Ecology and will be implemented (following agency review and approval) independent of the Phase 2 data collection efforts described in this draft SAP Addendum.

3 REMEDIAL INVESTIGATION SCOPE OF WORK (SECOND PHASE)

The proposed scope of work for Phase 2 of the RI was developed to address the data gaps described in Section 2. A summary of all RI data gaps, including data gaps identified by SLR in the Data Gaps Report, and by Ecology in their comments to the document and in meeting materials provided by Kennedy/Jenks on October 1, 2014, as well as DeNovo's responses and comments to each data gap as part of Phase 2 data collection efforts, is included in Table 3-1. The Phase 2 RI scope of work is described in the following sections.

3.1 Pre-fieldwork Activities

Prior to conducting any field work, the following activities will be completed:

- Permissions will be obtained from the City of Seattle to drill soil borings and/or install groundwater monitoring wells within the 8th Avenue South and Othello Street rights-of-way, located to the west and northwest of the Property, respectively.
- A public utility locate will be requested, and it will be arranged for a private utility locator to identify and mark the locations of underground utilities within 50 feet of the proposed drilling locations.
- All required permits to conduct sediment sampling will be obtained.

3.2 Soil Boring Drilling and Sampling

To meet the objectives described above, a total of 29 soil borings will be drilled and sampled. In addition, soil borings will be drilled to install replacement wells for four monitoring wells that were decommissioned in July 2014. Three of the 31 borings are additional drilling locations that were added to address data gaps discussed in Section 2.1. The locations of proposed soil borings, including soil-only borings and borings for monitoring well installations (see Section 3.3), are shown on Figure 3-1. The proposed soil borings address the data gaps discussed in Section 2.1. The rationale for moving several of the boring locations originally proposed in the Work Plan are described in Table 3-2. Table 3-2 also provides a summary of the depths to be sampled and analyses to be performed, which are further discussed in Section 5. The Work Plan proposed drilling and sampling of 39 soil borings for the second phase of the RI; however, there was limited to no technical

justification for 13 of the proposed borings; therefore, Table 3-2 discusses the rationale for eliminating each of those borings.

If any of the proposed boring locations need to be moved by more than 25 feet for any reason (e.g., underground utilities, Site features, access restrictions, etc.), the revised location will be coordinated with Ecology.

3.3 Monitoring Well Installation and Development

A total of six groundwater monitoring wells will be installed at the locations indicated on Figure 3-1. Prior to well installation, soil borings will be advanced at each location, as described in Table 3-2. Two of the wells (EMW-17S and EMW-18S) will be shallow-zone wells screened across the water table between approximately 5 and 20 feet bgs (similar to the existing shallow monitoring wells installed during Phase 1 of the RI), and four of the wells (EMW-19D through EMW-22D) will be installed at greater depth (below the depths of the existing deep monitoring wells) and screened from approximately 75 to 80 feet bgs.

The shallow and deeper wells will be installed using hollow-stem auger or sonic drilling techniques. The borings for the shallow wells will be drilled to approximately 20 feet bgs. The borings for the deep wells will be drilled to approximately 80 feet bgs, or to the bottom of the water bearing unit, whichever is shallower (as determined in the field). Approximate well construction details and development are described in the FSP (Section 4). Groundwater sampling of the new wells will be performed no sooner than 24 hours following the completion of well development.

In addition to the new wells, two of the recently decommissioned groundwater monitoring wells (DMW6 and EMW 5S) will be replaced during Phase 2 of the RI. Monitoring wells DMW6 and EMW-5S were decommissioned in accordance with the requirements of WAC 173-160 in July 2014. The replacement wells will be constructed at similar depths (approximately 20 feet bgs), and with similar screen intervals (approximately 5 to 20 feet bgs) as the original wells. Installation of the replacement wells will be located as close to the original well locations as feasible (see Figure 3-1). Based on the evaluation of soil data gaps, soil samples will not be collected or analyzed for replacement well EMW 5Sa.

During June 2014, well HC-19 was found underneath an area where soil and compost materials were previously stored by a past Property tenant. Monitoring well HC-19 was observed to be damaged and was decommissioned in accordance with the requirements of WAC 173-160 in July 2014. In addition, intact well MW-2 was discovered during investigation activities at the Site, and was subsequently sampled for Site COPCs and decommissioned. Wells HC-19 and MW-2 are not proposed for replacement during Phase 2 of the RI due to their proximity to other monitoring wells that provide shallow groundwater data for those areas of the Site.

3.4 Groundwater Sampling

After installing all Phase 2 monitoring wells, two quarterly groundwater sampling events will be conducted to obtain additional required data for completion of the RI dataset. The two sampling events will be conducted during low tide conditions in the LDW to minimize any surface water effects on the groundwater samples.

The first quarterly groundwater sampling event will occur no sooner than 24 hours following the development of the newly installed wells. Wells included in the sampling events are listed in Table 3-3 and shown on Figure 3-1 (all intact wells will be sampled during each sampling event). Groundwater samples collected during each event will be submitted for laboratory analysis, as indicated in Table 3-3. Analytical methods are further discussed in Section 5. During each groundwater sampling event, groundwater elevation monitoring will be performed as described in the FSP (Section 4).

3.5 Sediment Sampling

During Phase 2 of the RI, sediment sampling will be conducted in the LDW areas adjacent to the Site to address sediment data gaps. Sediment data gaps are summarized in Section 2.1 and Table 3-1. Surface and subsurface sediment sampling locations proposed for Phase 2 work are shown on Figure 3-2, and the methodology for sample collection is described below. DeNovo will coordinate with the U.S. Army Corps of Engineers, EPA and the Washington Department of Fish and Wildlife (and other agencies as necessary) to determine if permits are required to complete the sediment sampling scope of work. Sediment sampling will be

performed in accordance with EPA and Ecology standards for management and disposal of investigation derived waste.

3.5.1 Surface Sediment Sampling

Eighteen surface sediment samples will be collected within the berth areas adjacent to the Site at the approximate locations shown on Figure 3-2. These samples will be collected to evaluate current sediment conditions in proximity to the Site and provide a baseline of sediment conditions prior to the start of tenant operations at the Property. Seven of 18 sediment locations (SSED-12 through SSED-18) will investigate the extent of a historical sand dump adjacent to the Site.

Surface sediment samples will be collected using a hydraulic Van Veen grab sampling device (or similar device). Sediment sampling methodologies are described in the FSP (Section 4). Approximate surface sediment sampling depths and analytical tests to be performed are summarized in Table 3-4.

3.5.2 Subsurface Sediment Sampling

Four subsurface sediment locations will be co-located with surface sediment locations in the vicinity of the historical sand dump area adjacent to the Site at the approximate locations shown on Figure 3-2. The four subsurface sediment locations, SSED-SB-12, SSED-SB -13, SSED-SB-14, and SSED-SB-16) will investigate the nature and extent of potential sediment contamination associated with the historical sand dump.

Subsurface sediment sampling will be collected by vibratory core sampler (vibracore) on a vessel. Subsurface sediment sampling methodologies are described in the FSP (Section 4). Approximate subsurface sediment sampling depths and analytical tests to be performed are summarized in Table 3-4.

3.6 Stormwater Sampling

To further assess the potential impacts to the LDW from stormwater discharge, stormwater samples will be collected from the outfalls of the six site stormwater conveyance lines during one precipitation event with at least 0.1 inch of rainfall over a 24-hour period. Outfalls

included in the sampling event are listed in Table 3-5 and are shown on Figure 3-3. Table 3-6 provides coordinates for proposal sampling locations. Stormwater sampling methods are described in the FSP (Section 4). Stormwater sampling activities will be coordinated with the Property tenant and will not interfere with (or replace) the sampling required under their National Pollutant Discharge Elimination System (NPDES) permit(s).

3.7 Tidal Study

To further assess groundwater flow beneath the Site and interactions between the LDW and shallow and deep groundwater beneath the Site, a tidal study will be performed during Phase 2 of the RI. The study will consist of tidally filtered groundwater monitoring that includes pressure transducers/data loggers installed in ten shallow wells (CMW-1, CMW-4, CMW-7, DMW-3, EMW-1S, EMW-3S, EMW-5Sa, EMW-7S, EMW-12S, and SLR-6) completed at depths of approximately 20 feet bgs, four intermediate wells (EMW-4D, EMW-10D, EMW-15D, and EMW-16D) completed at depths of approximately 50 feet bgs, and the four proposed deeper wells (EMW-19D, EMW-20D, EMW-21D, EMW-22D) completed at depths of approximately 80 feet bgs, plus a stilling well in the LDW. Four of the locations are situated with shallow/intermediate/deep well groupings spread across the Site. The locations of the wells are shown on Figure 2-1. The transducers will be installed for a period of 72 hours, and will be set to record water level measurements at 10-minute intervals. Periodic manual water level measurements will also be recorded to correlate transducer measurements to groundwater elevations. The shallow, intermediate, and deep nested well groupings will be used to compare the amplitudes of tidal signals between shallow and deep groundwater and to allow for calculation of vertical gradients.

To further assess the potability of site groundwater, chloride and total dissolved solids data will be collected from Site monitoring wells during the groundwater monitoring events to evaluate for the presence of marine or brackish water in groundwater beneath the Site.

3.8 Waste Disposal

The soil generated by the drilling activities and the wastewater that is generated by the cleaning of the drilling and sampling equipment and the development and purging of the wells will be temporarily stored at the Site in properly labeled 55-gallon drums. After

obtaining the sample analytical results, the soil and water will be characterized in accordance with WAC 173-303 and transported off-site for disposal at licensed facilities.

3.9 Surveying

A licensed surveyor will survey the horizontal positions and vertical elevations of the new soil borings and groundwater monitoring wells from Phase 2 of the RI. The horizontal positions will be surveyed to the nearest 0.1 foot, relative to the Washington State Plane Coordinate System, North Zone, 83/91. The vertical elevations of the ground surface and well casings will be surveyed to the nearest 0.01 foot, relative to the North American Vertical Datum of 1988 (NAVD 88).

4 FIELD SAMPLING PLAN

The FSP presented below is based on the site data gaps discussed in Section 2 and summarized in Table 3-1. The FSP describes the field procedures, methodologies, and analytical methods for each work task based on the scope of work presented in Section 3.

The sampling activities for Phase 2 of the RI at the Site will be performed to provide data of sufficient quality and quantity to satisfy the investigation objectives for the entire Site and will address known data gaps.

Sample locations are shown on the following figures:

- Figure 3-1 shows the proposed soil and groundwater investigation locations that will be used to further delineate the lateral and vertical extents of impacted soil and groundwater
- Figure 3-2 shows the proposed locations surface and subsurface sediment investigation locations
- Figure 3-3 shows the outfalls that will be used for storm water investigation

Sampling locations, depths, analytical testing requirements, and coordinates are listed on the following tables:

- Table 3-2—Soil Sampling Locations, Analyses, and Sample Depths
- Table 3-3—Groundwater Sampling Locations and Analyses
- Table 3-4—Sediment Sampling Locations and Analyses
- Table 3-5—Stormwater Outfall Sampling Locations and Analyses
- Table 3-6—Proposed Sampling Location Coordinates

4.1 Sample Locations

During Phase 2 of the RI, a total of 29 soil borings will be drilled and sampled, and six of the borings will be completed as new groundwater monitoring wells to address the remaining investigation data gaps. In addition, two borings will be drilled and completed as replacement monitoring wells for decommissioned wells DMW6 and EMW-5S (see Section

3.3). The proposed depths of soil samples that will be collected from each of the borings for chemical analysis are provided in Table 3-2.

During Phase 2 of the RI, a total of two low-tide groundwater sampling events will be conducted. The locations of the proposed and existing groundwater monitoring wells are shown on Figure 3-1.

A total of 18 surface sediment samples with four co-located subsurface sediment locations will be collected within the berth areas adjacent to the piers. The locations of the proposed sediment samples are shown on Figure 3-2.

During Phase 2 of the RI, one stormwater sampling event will be conducted, and a stormwater sample will be collected from each of the six outfalls (OF1 through OF6). The locations of the stormwater system components, including the outfalls, are shown on Figure 3-3.

4.2 Soil Borings

A total of 31 soil borings are proposed for Phase 2 of the RI, including six to be completed as new monitoring wells, and two monitoring wells to replace wells decommissioned in July 2014. The proposed soil boring and monitoring well locations are shown on Figure 3-1.

Soil borings will be drilled by a driller licensed in the State of Washington by using direct-push or sonic drilling methods, and soil samples will be collected on a continuous basis. After the completion of drilling and sampling activities, each temporary boring will be abandoned with hydrated bentonite. Drilling activities will be performed under the direction of an Anchor QEA geologist.

Anchor QEA field personnel will continuously log the soils encountered during drilling and will perform field screening for the potential presence of contamination based on visual appearance (staining or sheen), odor, and photoionization detector (PID) readings. Most of the soil borings will be advanced to a depth of 20 feet bgs. Some soil borings (see Table 3-2) will be advanced to greater depths (up to 80 feet bgs) to provide for evaluation of COPCs, site

stratigraphy, and for deep monitoring well installation. If field observations indicate the potential presence of contaminants at the proposed bottom depth at a soil boring location, the boring may be advanced to greater depth as needed to evaluate the vertical extent of potential contaminant impacts.

A minimum of two soil samples from each boring and up to five soil samples from select borings, based on previous analytical results and data gaps, will be submitted for laboratory analysis. The samples will be analyzed for the parameters specified in Table 3-2. Soil analytical methods, limits of determination (LODs), and PQLs are defined in Table 5-1. Additional soil samples will be collected and archived at the laboratory for possible follow-up analyses. Soil samples will be collected for analysis or archive at the 2-foot depth intervals specified in Table 3-2 for depths less than 20 feet bgs, and at approximate 10-foot intervals for depths more than 20 feet bgs.

The approximate sample depths for analysis and archive for each soil boring are listed in Table 3-2. The specified depths are the "default" depths, and samples should be collected as close as possible to the indicated depths; however, the depths may be adjusted slightly if warranted by field observations (i.e., preference will be given for sample collection where field observations indicate contaminant impacts are more likely).

Additional samples will be submitted for initial laboratory analysis if field observations indicate the potential presence of contaminants. Field observations warranting additional sample analyses include, but are not necessarily limited to, the following:

- Staining, odor, non-aqueous phase liquid, sheen, and PID readings greater than background readings. Additional samples will be submitted for the full suite of analyses listed for that specific boring in Table 3-2.
- The presence of materials such as metals shavings or slag-like materials that may suggest anthropogenic activities. Additional samples will be submitted for the full suite of analyses listed for that specific boring in Table 3-2.
- The presence of burned or partially burned materials and ash that indicate past filling activities. These samples will be submitted for analysis of dioxins and furans. If burned or ash materials are observed in a sample already being submitted for laboratory analysis, analysis for dioxins and furans will be added.

The soil sampling procedures generally include the following:

- All sampling equipment and reusable materials that will contact the sample will be decontaminated on Site in accordance with procedures identified in Section 4.10. The field geologist will use clean nitrile gloves for handling each sample.
- The sample container labels will be filled out and attached to the appropriate containers as described in Section 4.9. Sample handling requirements are outlined in Table 5-2.
- A clean, stainless-steel spoon will be used to transfer the soil samples to the sample jars.
- The laboratory-provided volatile organic analysis vials (EPA Method 5035 kit) will be filled at each sample interval to be analyzed for VOCs and/or gasoline range organics (GRO). Soil will be transferred directly from the sampler to the sample containers. Care will be taken to minimize disturbance of soil placed in the containers. Sample container requirements are specified in Table 5-2.
- After filling the sample jars, the sample interval will be logged on a dedicated field boring log form using the United Soil Classification System.
- Quality assurance and field duplicate samples will be collected at a frequency of 1 in 20 samples, and is further described in Section 4.13.
- Sample container and sample handling requirements for each Site media are provided in Table 5-2.

After filling, the sample containers will be placed on ice in a cooler and handled as described in Section 4.9.

4.3 Monitoring Well Installation

As discussed in Section 3.3, six new monitoring wells will be installed following completion of soil boring sampling activities, and two replacement wells will be installed. The new wells include two shallow wells (EMW-17S and EMW-18S) and four deep wells (EMW-19D through EMW-22D), and the replacement wells (DMW6a and EMW-5Sa) are both shallow wells. The proposed locations of the wells are shown on Figure 3-1.

All monitoring wells will be installed using appropriate techniques that are suitable for meeting the RI/FS work plan objectives and to comply with applicable regulations. It is anticipated that both the shallow and the deeper wells will be installed using a hollow-stem auger or sonic drill rig methods at the same location as the original soil boring.

Each of the wells will be constructed of 2-inch-diameter Schedule 40 polyvinyl chloride (PVC) with a 15-foot-long (shallow wells) or 5-foot-long (deep wells) screen (0.010-inch-wide slots). The screen interval for the shallow wells will intercept the groundwater table with at least 1 foot of screen installed above the seasonal/temporal high water level. A blank PVC casing will be attached to the screen and will extend to approximately 6 inches bgs.

A filter pack consisting of 2/12 Lapis Lustre silica sand or equivalent will extend from the bottom of each well to approximately 2 feet above the uppermost screen slot. A hydrated bentonite chip seal will be installed above the filter pack to approximately 1 foot bgs. A traffic-rated steel monument will be installed (in concrete) flush with the ground surface to protect the well.

After installation, the driller will thoroughly develop the newly installed wells by using surging and pumping methods. The development will be conducted at 1- to 2-foot intervals beginning at the bottom of the well and extending up to the top of the water table (shallow wells) or top or the screened interval (deep wells). The development process will be repeated until the turbidity of the groundwater becomes visually clear, three annular volumes of groundwater have been removed, or the well purges dry, whichever occurs first.

4.4 Groundwater Elevation Monitoring

As discussed in Section 3.4, quarterly groundwater elevation monitoring will be performed at low tide during two separate monitoring events. The first elevation monitoring event will be performed at least 1 week after the installation of new monitoring wells and replacement of the exiting site wells that will be decommissioned due to site redevelopment activities.

Water level measurements will include all Site monitoring wells (shallow and deep) and the Slip 4 stilling well for each monitoring event. Measurements will be completed within a

2-hour time span for each event and will coincide with published times for low tide conditions in the LDW, adjacent to the Property. Measurements will begin no earlier than one-half hour before the maximum low tide condition during that tidal cycle. Well caps will be loosened at least 30 minutes prior to measurement to allow for equilibration of water levels.

Water levels will be measured by using an electric water level probe at each well location. The probe will be cleaned between measurements, as described in Section 4.10. The water level in each well will be measured to the nearest 0.01 foot from a surveyed notch in the well casing by using an electric water level probe.

4.5 Groundwater Sampling

As discussed in Section 3.4, two quarterly groundwater sampling events during low tide conditions will be included in Phase 2 of the RI. During each sampling event, a groundwater sample will be collected from each monitoring well at the Property (see Figure 3-1). The sample analyses to be performed for each sampling event are presented in Table 3-3. Groundwater analytical methods, LODs, and PQLs are defined in Table 5-3. Table 5-2 presents the sample handling requirements.

The groundwater sampling procedures include the following:

- The depths to groundwater will be measured in the monitoring wells before sampling. The water level in each well will be measured to the nearest 0.01 foot from a surveyed notch in the well casing by using an electric water level probe. Water depths will be recorded on a dedicated purge and sample field form, and will include date, time, and sampler's initials.
- The monitoring wells will be purged by using low-flow procedures. Groundwater samples will be collected using a peristaltic pump fitted with silicon tubing and either Tygon® or polyethylene tubing. Pump tubing will be lowered to a depth of approximately 1 to 2 feet below the water table in the shallow wells, and at a depth of approximately 1 to 2 feet below the top of the well screen in the deep wells, for purging and sampling. Monitoring wells will be purged at a rate of less than 0.3 liter per minute. The flow rate will be adjusted as necessary to prevent the groundwater

level from dropping more than 10 percent.

- Field parameters will be measured in purged groundwater as it is discharging through a flow-through cell. Groundwater will be passed through the cell and discharged into a temporary storage container. Field parameters will be periodically measured (every 3 to 5 minutes) and recorded during well purging and upon stabilization. Field parameters will be measured by using a multi-parameter meter. The multi-parameter meter will be calibrated before measurements are taken. Field parameter measurements will include the following:
  - Temperature
  - Turbidity
  - pH
  - Dissolved oxygen
  - Redox potential (ORP)
  - Specific conductance.
- Groundwater samples will be collected after the field parameters have stabilized to within 10 percent of the previous reading. If the groundwater parameters do not stabilize, a maximum of three casing volumes will be purged prior to sampling. The purge water will be stored and disposed of as described in Section 4.11.
- Groundwater samples will be collected by using low-flow sampling techniques. Pump tubing will be maintained at a depth of 1 to 2 feet below the water table in the shallow wells, and at a depth of approximately 1 to 2 feet below the top of the well screen in the deep wells. Groundwater samples will be collected after recording final field parameter readings.
- Groundwater samples will be collected from the discharge line of the peristaltic pump. All samples will be transferred in the field from the sampling equipment into the laboratory-prepared containers and stored in a cooler on ice pending transport to the laboratory. Sample container requirements will be verified for the selected analytical laboratory prior to the start of field sampling activities.
- Samples will be labeled, handled, and shipped using the procedures described in Section 4.9. Sample custody will be maintained until delivery to the analytical laboratory. All sampling field activity and data will be recorded on a dedicated purge and sample field form.

- The sampler(s) will wear new nitrile gloves at each sampling location. New dedicated Tygon® or polyethylene tubing will be used at each sampling location.
- Quality assurance samples and duplicate samples will be collected at a frequency of 1 for every 20 samples, as described in Section 4.13. Duplicate samples will be collected by alternately filling similar containers until both containers are filled.

All reusable purging and sampling equipment will be decontaminated by using the procedures described in Section 4.10.

4.6 Duwamish River Sediment Sampling

Surface and subsurface sediment samples will be collected in the LDW at the locations indicated on Figure 3-2. Sample collection and testing will be conducted to establish baseline conditions adjacent to the Property prior to initiation of facility offloading operations and to address the data gaps outlined in Section 2. A detailed review of sediment quality, and historical dredging, and previous sediment investigations completed on and adjacent to the Site, are provided in the Data Gaps Report (SLR 2014a; Appendix A-2).

Sediment sample collection and processing procedures are described below. Analyses to be performed for sediment samples are listed in Table 3-4.

Horizontal positioning will be determined in the field by differential global positioning system (DGPS) based on target coordinates. The horizontal datum will be North American Datum of 1983 (NAD 83), Washington State Plane North. Measured geographical coordinates for station positions will be recorded and reported to the nearest 0.01 second. In addition, state plane coordinates will be reported to the nearest foot. The DGPS accuracy is less than 1 meter and generally less than 30 centimeter (cm), depending on the satellite coverage and the number of data points collected.

Surface sediment samples will be collected from the 0 to 10 cm biologically active zone at 18 locations in the LDW, as presented on Figure 3-2.

A hydraulic Van Veen (or similar) grab sampling device (or similar device) will be used to collect surface sediment samples. Final sampling methodology in the LDW will depend on access and water level. Van Veen sampling locations will be approached at slow boat speeds with minimal wake to minimize disturbance of bottom sediments prior to sampling. Sediment samples will be handled carefully to minimize disturbance during collection and transportation to the laboratory.

The grab sampler will be lowered over the side of the boat from a cable wire at an approximate speed of 0.3 foot per second. When the sampler reaches the mudline, the cable will be drawn taut, and DGPS measurements will be recorded. Each surface grab sample will be retrieved aboard the vessel and evaluated for the following acceptance criteria:

- Overlying water is present and has low turbidity
- Adequate penetration depth is achieved
- Sampler is not overfilled
- Sediment surface is undisturbed
- No signs of winnowing or leaking from sampling device

Grab samples not meeting these criteria will be rejected near the location of sample collection. The process will be repeated until criteria have been met. Deployments will be repeated within a 20-foot radius of the proposed sample location. If adequate penetration is not achieved after multiple attempts, less volume will be accepted and noted in the field notebook. Once accepted, overlying water will be siphoned off and a decontaminated stainless steel trowel, spoon, or equivalent will be used to collect only the upper 10 cm of sediment from inside the sampler without touching the sidewalls. The sampler will be decontaminated between stations and rinsed with site water between grabs.

After sample collection, the following information will be recorded on the Field Log Sheet, on the Sediment Sampling Form, and/or in the field notebook:

- Date, time and name of the person logging the sample
- Weather conditions
- Sample location number and coordinates
- Project designation

- Depth of water at the location and surface elevation
- Sediment penetration and depth
- Sediment sample interval
- Sample recovery

Homogenized surface sediment will be spooned immediately into appropriate pre-cleaned, pre-labeled sample containers, placed in coolers filled with ice or equivalent, and maintained at 4 degrees Celsius. Debris and materials more than 0.5 inch in diameter will be omitted from sample containers.

Sample concentrations will be reported down to the lowest laboratory limit available in order to evaluate for potential exceedences of the Sediment Management Standards (SMS) or other LDW preliminary screening levels/cleanup levels. Analytical methods for completion of sediment chemical testing are presented in Table 3-4.

In addition to the location information collected in the field, sample logging of bulk sediment not sampled in containers will involve physical characterization in general accordance with the visual-manual description procedure (ASTM D-2488 modified). The information will be recorded on the Sediment Sampling Forms (see Appendix F). Physical characterization includes the following:

- Grain size distribution
- Density/consistency
- Plasticity
- Color and moisture content
- Biological structures (e.g., shells, tubes, macrophytes, and bioturbation)
- Presence of debris and quantitative estimate (e.g., wood chips or fibers, paint chips, concrete, sand blast grit, and metal debris)
- Presence of oily sheen
- Odor (e.g., hydrogen sulfide)

Surface sediment samples collected for chemical and physical analysis will be securely packed and hand delivered to the analytical testing laboratory. The sediment sample analyses are listed in Table 3-4.

4.7 Subsurface Sediment Collection and Sampling

Subsurface sediment sampling will be carried out by vibracore to collect chemical and physical data. Four subsurface sediment sampling locations are proposed as part of Phase 2 activities. All four locations are co-located with surface sediment sampling locations in the LDW adjacent to the Property. Figure 3-2 shows the proposed subsurface sampling locations.

The subsequent sections provide details regarding vibracore collection and sediment processing methods.

4.7.1 Subsurface Sediment Collection Methods

Subsurface sediment stations will be collected by a vibracore. A vibracore collects a continuous profile of subsurface sediments by utilizing a high frequency vibrating coring device that penetrates into the underlying sediments with minimal distortion. A vibracore is ideal for collecting long, relatively undisturbed cores from a variety of sediment types. Subsurface sediment sampling by vibracore will be advanced approximately 15 feet below mudline, or until refusal is met.

Prior to deployment, the following procedure will be used to decontaminate sample tubes:

- Rinse and pre-clean with potable water
- Wash and scrub the tubes in a solution of laboratory grade, non-phosphate-based soap and potable water
- Rinse with potable water
- Rinse three times with distilled water
- Seal both ends of each core tube with aluminum foil

The aluminum foil will be removed immediately prior to placement into the coring device. Care will be taken during sampling to avoid contact of the sample tube with potentially contaminated surfaces.

Vibracore sediment samples will be collected in the following manner:

1. The vessel will maneuver to the proposed sample location.

2. A decontaminated core tube the length of the desired penetration depth will be secured to the vibratory assembly and deployed from the vessel.
3. The cable umbilical to the vibrator assembly will be drawn taut and perpendicular as the core rests on the bottom sediment.
4. The location of the umbilical hoist will be measured and recorded by the location control personnel, and depth to sediment will be measured using a lead line.
5. A 4-inch-diameter, thin-walled, aluminum tube will be vibratory-driven into the sediment using two counter-rotating vibrating heads.
6. A continuous core sample will be collected to the designated coring depth (15 feet below mudline) or until refusal.
7. The depth of core penetration will be measured and recorded.
8. The vibrator will be turned off, and the core barrel will be extracted from the sediment using the winch.
9. While suspended from the A-frame, the assembly and core barrel will be sprayed off and then placed on the vessel deck.
10. The core sample will be evaluated at the visible ends of the core tube and the length of recovered sediment will be recorded. If accepted, the core tube will be sectioned into 4- to 6.5-foot lengths.

Acceptance criteria for sediment core samples are as follows:

- Overlying water is present and the surface is intact
- The core tube appears intact without obstruction or blocking
- Recovery is greater than 75 percent of drive length

If sample acceptance criteria are not achieved, the sample will be rejected, unless modified acceptance criteria are approved by the Anchor QEA field geologist.

Anchor QEA personnel will record field conditions and drive notes on a standard core log (Appendix F). Logs will include the following information:

- Water depth at each station sampling using lead-line at point of sampling station
- Location of each station as determined by DGPS
- Date and time of collection of each sediment core sample

- Names of field personnel collecting and handling the samples
- Observations made during sample collection, including weather conditions, complications, and other details associated with the sampling effort
- The sample station identification
- Length and depth intervals of each core section and estimated recovery for each sediment sample as measured from mean lower low water
- Qualitative notation of apparent resistance of sediment column to coring (how the core drove)
- Any deviation from the approved SAP Addendum

Once the core samples are deemed acceptable, the cutterhead will be removed, and a cap will be placed over the end of the tube and secured firmly in place with duct tape. The core tube will then be removed from the sampler, and the other end of the core will be capped and taped. The core tube will be labeled with permanent black pen and inscribed with the location ID and an arrow pointing to the top of core. The cores will then be cut into appropriate lengths for transport and processing. Cores will be cut to a maximum length of 6.5 feet. The cores will be sealed tightly enough to prevent leakage or disturbance during transport to the processing station. Cores will be transported daily to the on-site processing area. A Chain-of-custody (COC) form (Appendix F) will be logged by Anchor QEA field staff and maintained by staff at the processing area.

4.7.2 Subsurface Sediment Processing Methods

The vibracore processing station will be located at the analytical laboratory. Transported cores will be handled consistent with ASTM procedures (ASTM D 4220) and stored upright and cool until processed. When processed, the core caps will be removed, and the core will be cut longitudinally using a circular saw. The core will be split with decontaminated stainless steel wire core splitters or spatulas into two halves for sampling.

Prior to sampling, Anchor QEA field staff will collect color photographs. Field staff also will record a sediment description of each core on a standard core processing log (Appendix F). The following parameters will be noted:

- Sample recovery

- Physical sediment description in accordance with ASTM procedures (ASTM D 2488 and ASTM D 2487 – Unified Soil Classification System) including sediment type, density/consistency of sediment, and color
- Odor (e.g., hydrogen sulfide and petroleum)
- Visual stratification, structure, and texture
- Vegetation and debris (e.g., wood chips or fibers, paint chips, concrete, sand blast grit, and metal debris)
- Biological activity (e.g., detritus, shells, tubes, bioturbation, and live or dead organisms)
- Presence of oil sheen

All cores will be fully logged, photographed, and sampled from discrete 2-foot depth intervals based on the sampling scheme outlined in Table 3-4. Field observations, such as color, odor, sheen, and anthropogenic material (e.g., blasting grit), may also be used to identify/adjust sample intervals.

Discrete samples will be taken directly from the selected depth interval and spooned into a stainless steel bowl for homogenization and then into laboratory-supplied jars. Table 3-4 presents the subsurface sediment sampling details, including sample nomenclature, depth interval, and planned analyses. Table 3-6 provides coordinates for proposal sampling locations.

Samples will be placed in a decontaminated stainless steel bowl and mixed using a decontaminated stainless steel mixing spoon. The sediment will be mixed until homogenous in color and texture and then spooned into laboratory-supplied jars for analyses. A COC form will be logged by the processing staff and relinquished to the laboratory staff (Appendix F). Subsurface sediment testing will include the parameters listed in Table 3-4. Sample concentrations will be reported down to the lowest laboratory limits available to evaluate for potential exceedences of the SMS and the Draft LDW preliminary screening levels. Analytical methods, LODs, and PQLs are defined in Table 5-1. Table 5-2 presents the sample handling requirements.

Quality assurance samples and duplicate samples will be collected at the frequency of one for every 20 samples, as described in Section 4.13.

4.8 Stormwater Outfall Sampling

As discussed in Section 3.5, stormwater samples will be collected from each of the six outfalls from the Site (see Figure 3-3). Since there will likely be minimal differences in sample analytical results between stormwater sampling events, completion of one stormwater sampling event is proposed for Phase 2 of the RI.

Stormwater samples will each be collected during precipitation events with at least 0.1 inch of rainfall over a 24-hour period. The sampling event will be preceded by at least 24 hours of no greater than a trace of precipitation. To minimize any surface water influence on the samples, the samples will be collected during a period when the drainage outfalls are above the water level of the waterway (at low tide). The stormwater samples will be grab samples collected directly from the outfall pipes. Each sample jar may be attached to an extension pole in order to reach the outfall.

The field geologist will use clean nitrile gloves for handling each sample. After filling, the sample containers will be placed on ice in a cooler and handled as described in Section 4.9. The stormwater sample analyses are listed in Table 3-5.

4.9 Sample Designation

Soil samples will be identified by the boring from which they are collected and the sample depth range. For example, the sample collected from boring EB-22, at a depth of 4 to 6 feet, would be designated "EB-22-4-6." The groundwater samples will be identified by the monitoring well from which they are collected and the date collected, using a six-digit date alphanumeric. For example, the groundwater sample collected from monitoring well EMW-17S on November 22, 2014 would be designated "EMW-17S-112214". Stormwater samples will be identified by the outfall that they are collected from and the date collected, using a six-digit alphanumeric. For example, the stormwater sample collected from outfall #5 on November 22, 2014 would be identified as "OF5-112214".

Quality assurance (QA) samples (field duplicates) will be collected at a frequency of one for every 20 samples for each medium. Field duplicate samples will be identified by the addition of 50 to the sample number when submitted to the laboratory. The following are examples of sample numbering:

- EB-72-4-6 represents a field duplicate soil sample for the 4- to 6-foot sample interval at soil location EB-22
- EMW-67S-112214 represents a field duplicate groundwater sample collected at well EMW-07S on November 22, 2014
- OF55-112214 represents a field duplicate stormwater outfall sample collected at Outfall 5 on November 22, 2014

The sediment sample nomenclature is described as follows. Each sample will be assigned a unique alphanumeric identifier according to the following method:

- Each station ID will be identified by a Surface Sediment Sample (SSED)-Sample Number described as follows:
  - The sample number will be in the order of sampling locations, beginning with -01
- Example sample identification nomenclature includes the following:
  - SSED-01: Surface sediment sample collected from the first location
- Subsurface sediment locations will be identified by Subsurface Boring (SB) after the SSED
  - SSED-SB-12: Subsurface sediment sample collected from the first location
- A field duplicate collected from a sample will be identified by the addition of 50 to the sample number
  - SSED-51: Duplicate surface sediment sample collected from the first location
  - SSED-SB-12-52: Duplicate subsurface sediment sample collected from station SSED-SB-12.

For rinsate blank samples, the letters "RB" will be used instead of the sample number, and the rinsate blank date in MMDDYY format will be added to the end. The resulting

nomenclature of a rinsate blank of the decontaminated sediment sample processing equipment on November 22, 2014, would be SSED-RB-112214.

Trip blanks will be identified with sequential sample number and a date suffix (e.g., TB-1-0614) on the container. Extra samples collected for laboratory duplicates and matrix spike and matrix spike duplicate (MS/MSD) analyses will be identified with the same designation as the sample.

4.10 Sample Labeling, Shipping, and Chain-of-Custody

Sample Labeling. Sample container labels will be completed immediately before or immediately after sample collection. Container labels will include the following information:

- Project name
- Sample number
- Name of collector
- Date and time of collection
- Analyses requested

Sample Transport. Samples will be transported in a sealed, iced cooler to the analytical laboratory at the end of each day of sample collection. Ice will be placed into each cooler with the samples. All delivered samples will be accompanied by a chain-of-custody form. Sample coolers will be transported to the laboratory by the field sampler.

Chain-of-Custody. Once a sample is collected, it will remain in the custody of the sampler or other Anchor QEA personnel until delivered to the laboratory. Upon transfer of sample containers to subsequent custodians, a chain-of-custody will be signed by each person transferring custody of the sample container. Upon receipt of samples at the laboratory, the condition of the samples will be recorded by the receiver. Chain-of-custody records will be included in the analytical report prepared by the laboratory.

4.11 Decontamination Procedures

All down-hole drilling equipment will be steam-cleaned or pressure-washed prior to beginning drilling and between drilling each boring. Spoons and other sampling equipment that will contact the soil samples will be decontaminated prior to initial use, between sampling locations, and between different sampling depths at the same location. Soil and sediment sampling equipment will be decontaminated by steam cleaning, pressure washing, or by the following procedure:

- Tap water rinse
- Non-phosphatic detergent (Liquinox) and tap water wash
- Tap water rinse
- Distilled water rinse (three times)
- Store in clean, closed container for next use

Polyethylene tubing will be dedicated to each well. The water level probe will be rinsed with distilled water between uses in different monitoring wells.

4.12 Residuals Management

The soil generated by the drilling activities, and the wastewater generated by the cleaning of the drilling and sampling equipment and the development and purging of the wells will be temporarily stored at the Site in properly labeled 55-gallon drums. After obtaining the sample analytical results, the soil and water will characterized and will be transported off-site for disposal at licensed facilities in accordance with WAC 173-303.

4.13 Field Quality Assurance

As described in the QAPP of the Work Plan (Ecology 2012), field QA will be maintained through compliance with the sampling plan, collection of field QA samples, and documentation of sampling plan alterations.

Duplicate soil, groundwater, stormwater, and sediment samples will be collected at a minimum frequency of one duplicate sample per 20 samples or one duplicate sample per batch of samples if less than 20 samples are collected. Duplicate samples will be collected to check the precision of the field sampling and analytical procedures. During each sampling

event, at least one duplicate sample will be taken from one sampling point at the same time as the regular sample. For soil and sediment, a split sample will be collected from the same homogenized sample interval. For groundwater and stormwater, duplicate samples will be obtained by alternately filling like sample bottles for the two sample sets (original and duplicate). Duplicate samples will be labeled similarly to the other samples and will be identified by the addition of 50 to the sample location ID. The locations for duplicate sample collection will be determined in the field.

Equipment rinsate blanks will be obtained after non-dedicated sampling equipment is decontaminated and will involve passing deionized organic-free water through the sampling equipment and transferring the water into an appropriate sampling container. Rinsate blanks will not be collected if single-use or dedicated equipment (e.g., tubing) is used for sampling. Rinsate blanks will be analyzed to determine whether decontamination of sampling equipment is adequate. One equipment rinsate blank will be collected with non-dedicated equipment or, at a minimum, one equipment rinsate blank will be collected for each sampling event for soil, groundwater, stormwater, and sediment programs. For the above media, one field rinsate sample will be collected for every 20 samples collected.

4.14 Standard Field Forms

Standard field forms used to record sampling data and field observations include the following:

- Daily Log
- Boring Log Form
- Soil Description Checklist – Field Log
- Generalized Well Installation Details – Flush Mount
- Well Development Log
- Groundwater Field Sampling Data Sheet
- Surface Sediment Field Log
- Sediment Core Collection Form
- Sediment Core Processing Log
- Chain of Custody Form

A blank copy of each form is presented in the Appendix F.

5 ANALYTICAL METHODS

All of the soil, groundwater, storm water, and sediment samples will be submitted to Analytical Resources, Inc. (ARI) in Tukwila, Washington, an Ecology-certified laboratory for the suite of analyses required. Groundwater samples for metals analysis will be analyzed by EPA Method 200.8 with UCT to reduce potential interferences associated with salinity.

A PQL for each of the sample analyses will be applied to ensure that the lowest practical detection limit is used. However, if interference in an analysis prevents the use of the PQL, then the laboratory will use the lowest possible reporting limit that is technically feasible for the sample matrix. The target PQLs for all soil, sediment, and water samples are presented in Tables 5-1 and 5-3.

5.1 Soil Samples

Select laboratory analyses and analytical methods anticipated for soil samples will be performed based on evaluation of Phase 1 data (Tables 2-6 through 2-10), and include the following:

- DRO and RRO by Northwest Method NWTPH-Dx (after silica gel cleanup)
- GRO by Northwest Method NWTPH-Gx
- Priority Pollutant Metals (antimony, arsenic, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc) and barium by EPA Method 200.8 or 6020
- Mercury by EPA Method 7471
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270D
- PAHs by EPA Method 8270D SIM
- PCBs by EPA Method 8082A
- VOCs (including n-hexane, 1,2-dibromoethane, 1,2-dichloroethane, and methyl tertiary butyl ether) by EPA Method 8260C
- VPH by Ecology Method WA-VPH
- EPH by Ecology Method WA-EPH
- Dioxins and furans by EPA Method 1613

5.2 Groundwater Samples

Select laboratory analyses and analytical methods anticipated for groundwater samples will be performed based on evaluation of Phase 1 data (Tables 2-11 through 2-14), and will include the following:

- Total and dissolved metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc) by EPA Method 200.8 with UCT
- Dissolved mercury by EPA Method 1631E
- SVOCs by EPA Method 8270D
- PAHs by 8270D SIM
- PCBs by EPA Method 8082A
- DRO and RRO by Northwest Method NWTPH-Dx (after silica gel cleanup)
- VOCs by EPA Method 8260C
- Total Dissolved Solids (TDS) by Standard Method 2540C
- Chloride by Method SM4500.

All dissolved metals analyses will be conducted after field filtering of the samples.

5.3 Sediment Samples

Select laboratory analyses and analytical methods anticipated for sediment samples will be performed based on evaluation of historical data (Table 2-15), and will include the following:

- Arsenic, cadmium, chromium, copper, lead, nickel, selenium, silver, and zinc by EPA Method 200.8 or 6020
- Mercury by EPA Method 7471
- SVOCs by EPA Method 8270D
- PAHs by EPA Method 8270D SIM
- PCBs by EPA Method 8082A
- Dioxins and Furans by EPA Method 1613
- Total organic carbon (TOC) by EPA Method 9060
- Grain size by ASTM D-422.

Dioxins/furans will be tested for sediment samples if visual field observations indicate potential impacts in the historical Sand Dump Area.

5.4 Storm Water Samples

Select laboratory analyses and analytical methods anticipated for storm water samples will be performed based on evaluation of Phase 1 data (Table 2-16), and include the following:

- Total metals (antimony, arsenic, barium, beryllium, cadmium, chromium, copper, lead, nickel, selenium, silver, thallium, and zinc) by EPA Method 200.8 or 6020
- Total mercury by EPA Method 1631E
- SVOCs by EPA Method 8270D
- PAHs by 8270D SIM
- PCBs by EPA Method 8082A
- DRO and RRO by Northwest Method NWTPH-Dx (after silica gel cleanup)
- GRO by Northwest Method NWTPH-Gx
- VOCs by EPA Method 8260C
- Total Suspended Solids (TSS) by Standard Method 2540D
- TOC by EPA Method 9060M
- Chloride by Method SM4500.

6 REFERENCES

SLR (SLR International Corporation), 2008. *Environmental Investigation Report, Crowley Marine Services Site, 7400 8th Avenue South, Seattle, Washington*. July 31, 2008

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SLR, 2014b. *Results of Second Catch Basin Solids and Storm Water Sampling Events, First Phase of Remedial Investigation, 8th Avenue Terminals, Inc. Site, Seattle, Washington*. April 11, 2014.

Ecology (Washington State Department of Ecology), 2010. Natural Background for Dioxins/Furans in WA Soils, Technical Memorandum #8, Publication No. 10-09-053. August 2010.

Ecology, 2012. *Remedial Investigation and Feasibility Study Work Plan, Crowley Marine Services 8th Avenue S. Site, 8th Avenue Terminals, Inc., 7400 8th Avenue South, Seattle, Washington 98108*. October 2012.

Ecology, 2013. Letter to Stephen Wilson of Crowley Maritime Corporation Regarding Resolution of Dispute of November 16, 2012, Approval of RI/FS Work Plan with Revisions, Crowley Marine Services 8th Avenue S. Site, Agreed Order No. DE 6721. May 23, 2013.

Ecology, 2014. Letter to Stephen Wilson of Crowley Marine Corporation Regarding Comments on SLR's Draft Data Gap Report, 8th Avenue Terminals Site, Agreed Order No. DE 6721. April 21, 2014.

ECOLOGY DRAFT SAMPLING AND ANALYSIS PLAN ADDENDUM COMMENT LETTER

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
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March 25, 2015

Mr. Matthew Woltman
Anchor QEA, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101

Re: Agreed Order No. DE 6721
Review of Draft Sampling and Analysis Plan Addendum, November 7, 2014
Crowley Marine Services 8th Ave S Site – DeNovo Seattle LLC
7400 8th Ave S, Seattle, WA

Dear Mr. Woltman:

This letter contains the Department of Ecology's (Ecology) review of the Draft SAP Addendum (Addendum), submitted on November 7, 2104, documenting remaining information and data gaps for completion of the remedial investigation (RI) at the Site. The Addendum was incomplete upon submission. Therefore Ecology requested supplemental information during the review period. At this time, some requested information remains outstanding. However, Ecology is providing comments on the Addendum to facilitate progress on the RI.

DeNovo implemented the proposed data collection in November and December 2014 prior to approval of the scope of work proposed in the Addendum. Ecology has not reviewed the Phase 2 data set.

The sampling program, as proposed in the Addendum, is insufficient to meet the requirements of the Phase 2 RI to provide sufficient data to prepare the Draft Remedial Investigation Report.

The comments below and in the enclosed table and figure show additional sampling proposed to fill remaining data gaps. Significant data gaps remain. However, since the field activities proposed in the Addendum have been completed, these comments are directed toward preparation of an updated and Revised Addendum. The Revised Addendum must contain the Phase 2 data and a plan to fill data gaps identified in this letter and additional data gaps which may be indicated by the Phase 2 data.

On October 22, Ecology approved the early submittal of the Addendum in advance of validated Phase 1 data entry into the EIM system. Ecology stated it would begin review of the Addendum. However, the validated data would be required before comments on the Addendum would be provided. The data became available in EIM on February 26. At this writing, Ecology has not had sufficient time to perform a complete review of the validated data, and is therefore providing comments in advance of the validated data set review.

Please address the comments below in a Revised Addendum and submit an agency review draft upon completion. At this time, Ecology does not approve any further data collection at the site prior to approval of the Revised Addendum to assure that the data gaps will be addressed and the appropriate field procedures are followed.

1. Information about the future development proposed for the site was not included in the Addendum.

   Ecology has provided the comments below in the absence of information on the future site development plans. This incomplete information may result in conflicting, unresolved, or unidentified data gaps. For example, the Site data collected to date indicates that the top five to six feet of soil across the Site has not been adequately characterized for a variety of Site contaminants. If future development plans include complete removal of the top six feet of soil, then contaminants need to be characterized for disposal and health and safety purposes to mitigate risks associated with the soil removal. Alternatively, if future development plans intend to leave this soil in place, additional characterization of contaminants, particularly metals and PAHs, is needed to understand and mitigate risks to Site workers and the environment. Revisions to the Addendum to include this information would be helpful to move the RI forward and determine the scope of applicable data gaps.

2. The Addendum did not describe how the data collected would inform the Feasibility Study (FS) so that a cleanup option can be selected.

   Further data collection to address the remaining data gaps should be coordinated with the plans for the future development, descriptions of potential cleanup options, and information on how data collected will inform the FS. Assure that the development and cleanup option information is considered in the Revised Addendum.

3. The Addendum sampling program does not appear to be connected to the conceptual site model presented by SLR or to a conceptual site model that considers exposure pathways as site development occurs or planned future use.

   Prepare and include a revised graphic conceptual site model that addresses potential exposure pathways for the RI and during development of the site and future use. Then, propose additional environmental sampling that will inform interim actions and cleanup actions that will preclude or mitigate risks to potential receptors.

4. Contaminants of potential concern appear to be identified too early in the RI process and are based on limited Site data.

   RI investigation activities should be focused on collecting data and developing information that will be needed to evaluate remedial alternatives for the Site. Based on the detection frequencies calculated during a limited review of the Site data posted to EIM, additional contaminants in soil and groundwater must also be considered as contaminants of potential concern.

5. The statements in Sections 2.1.1-2.1.2 and Table 2-1 eliminating the soil to surface water pathway and soil to sediment pathway are not supported by site data.

   Add further support for not retaining the soil to surface water pathway and the soil to sediment pathway. Please indicate how impacted soil throughout the entire Site is not capable of affecting the adjacent surface water and sediment. Without further substantiating information, these pathways and criteria will need to be added to the tables for use in developing screening levels.

6. Table 2-1, Summary of Applicable Pathways and ARAR Evaluation, includes soil and groundwater pathways only.

   Air, storm and surface water, and sediment also need to be included in this and other tables.

7. The Addendum assumes site groundwater is non-potable until further data is collected.

   Until the possible non-potability of site groundwater is determined and approved by Ecology, the Addendum and other RI documents will need to assume that site groundwater is potable. Based on existing TDS results from groundwater samples in site wells, a significant portion of the shallow aquifer does not exceed the MTCA criterion of 10,000 mg/L TDS to potentially qualify for non-potability.

8. Tables 2-2 and 2-3 show an incomplete ARAR Evaluation.

   This Site is undergoing Method B cleanup, and thus Method C is not necessary to consider; remove from the Yes column any Method C criteria. However, Method A should be retained only for TPH ranges. As mentioned above, the soil to sediment protection and soil to surface water protection (marine only, not fresh water) may need to be considered as Yes in this table.

   It is not stated how the surface water criteria will be applied. Are these surface water criteria to be applied as screening levels to all Site groundwater sample results? Are they also to be applied to surface water (outfall) sample results? This Site is undergoing Method B cleanup, and thus Method C is not necessary to consider; remove from the Yes column any Method C criteria. However, Method A should be retained only for TPH ranges. Whether the State Board of Health and MCLs/MCLGs are considered under groundwater Method A (rows 4-7) or groundwater Method B (rows 1-4), these criteria are required to be addressed per MTCA.

   For surface water, Slip 4 and the LDW in this area have been shown to qualify as marine water, and thus the fresh water criteria do not need to be considered as screening levels. Background levels for groundwater and surface water hazardous substances may be considered, as listed in the Ecology 2012 ARAR/PSL table. Although the groundwater to sediment pathway is included in Table 2-1, these two sets of criteria (based on CSL and SQS) are listed as not being retained under the groundwater pathway evaluation; they should be listed in the Yes column.

9. Screening levels were revised for this Phase of the RI. Tables 2-4 and 2-5, Preliminary Screening Levels do not show the criterion on which the screening level is based.

   The discussion in Section 2 concerning modifying screening levels, eliminating pathways, potentially applicable ARARs and exposure pathways, including the decision to use a non-potable groundwater determination, is based on an incomplete RI data set and includes assumptions that are not justified at this stage of the RI. Screening levels applied in this report are different from the screening levels presented in the SLR Data Gaps Report. This creates inconsistencies in the data screening process. Although the method seems to be somewhat similar in developing screening levels, numeric screening values in this SAP Addendum are up to several orders of magnitude different than in the SLR report. If there are errors or inconsistencies in the current screening levels, the SLR report screening levels would be more appropriate and would retain consistency during the RI process.

   Add to these tables the name of the criterion that corresponds to each of the Preliminary Screening Levels values (one per analyte). Develop similar tables for surface water and sediment. Incorporate the 2013 revision of the Sediment Management Standards criteria and information in the 2013 Sediment Cleanup Users Manual II (SCUM II).Additional information is needed to explain the process used in developing screening levels, or instead the SLR screening levels should be adopted to retain consistency.

   To provide one example of a screening level that is inconsistent with the SLR value, the soil screening level for lead is presented in the SAP Addendum as 17 mg/kg, which is the background level in the 2012 Ecology ARAR/PSL table. However, all criteria in the 2012 table are above this level (25 mg/kg is the lowest). Thus, the value of 25 mg/kg should be the proper screening level, which was the level used in the SLR report.

10. The soil borings, sampling, and analyses proposed in the 2012 Work Plan were meant to fill data gaps with regard to the nature and extent of soil contamination across the Site and were tied to a CSM for the Site use, as it was understood in 2012. Borings were located in areas where insufficient data are available to complete the RI and prepare FS and cleanup plans; including areas with no soil data, such as the area north of the former Treated Pole Storage area, and in areas where definition of the vertical and lateral extents of contaminants were not understood. Ecology disagrees with and objects to the assertions in the Section 3.2 that the 13 eliminated soil borings were proposed with "limited to no technical justification" and in Table 3-2 that indicates the eliminated borings were not needed because "objectives of the RI have been met..., [the boring] is not needed to further delineate the lateral or vertical extent of COPCs..., and there is sufficient information about contaminant conditions in the area to design a remedial action, if necessary."

    Remove all language from the Revised Addendum which indicates that environmental samples were proposed with "limited to no technical justification". Remove the statements from Table 3-2 that RI objectives have been met in the areas where Phase 2 soil borings were eliminated.

11. Interim action soil boring logs were not included in the Addendum.

    Include the boring logs for the interim action soil borings IAB-1 through IAB-42 in an Appendix. In the text of the Revised Addendum, explain the reason for multiple logs for some of the borings. Present all boring locations (i.e., "A", "B", "C", etc.) on the sample location map.

12. Soil contaminant maps were prepared with unvalidated Phase 1 data.

    The maps were reviewed as drafts. Revised figures and cross-sections using the validated data should be included in the Revised Addendum. Show proposed borings on these figures.

13. Contaminant maps for carcinogenic PAHs (cPAH) were prepared using data that did not contain the complete set of seven cPAHs. No contaminant maps were provided for individual cPAHs.

    Data for samples without the complete set of cPAHs should be mapped as individual cPAHs and compared to individual preliminary screening levels rather than cPAH TEQ. Some individual PAHs may warrant additional and separate maps.

14. Cross-sections and contaminant maps for diesel-range and residual-range organics were prepared as separate figures in the Addendum.

    Revise cross-sections and contaminant maps to present the sum of diesel-range and residual-range organics in soil and groundwater.

15. The nature and extent of dioxins/furans has not been adequately characterized across the Site.

    Collect samples for dioxins/furans analysis in areas and depths where PCB concentrations in soil and storm drain solids exceed preliminary screening levels. Collect additional samples in soil across the Site to define the lateral and vertical extent of dioxins/furans impacts. Address comments in this letter regarding dioxins at the site.

16. Some Site figures may be revised to be more easily read and interpreted.

    On figures which show soil concentrations and proposed boring and/or monitoring well locations, use unique symbols to show existing borings, existing wells, proposed borings, and proposed wells, rather than symbols that describe the date of installation. This will facilitate interpretation of information contained on the figures, such as Figure 3-1.

17. The Addendum provided for collection of additional samples, but not additional analyses, where field indications of impacts are observed.

    Sampling plans should include analysis for contaminants not planned for the particular boring location. For example, if field indications of hydrocarbon impacts are observed in a boring, samples should be submitted for TPH, PAHs, and PCBs regardless of whether those analyses are initially planned at that location.

18. Section 7.1.1 of the 2012 RI Work Plan called for additional analyses or borings when field evidence indicates the presence of contamination. This appears not to have been followed during the 2014 field investigation.

    Additional borings should be advanced lateral to borings in which field indications of impacts (e.g., sheen, odor, staining, elevated PID readings) are observed. Although this may not be practicable for metals at all locations, potential impacts from TPH, PAHs, VOCs, and possible PCBs can be readily identified based on field observations and "step-out" borings should be completed during the sampling event.

19. Ecology reviewed the draft borings logs from November and December 2014 and the laboratory chains-of-custody for soil samples. The following comments address questions and concerns resulting from this review.

    a. Descriptions of odor/sheen are not provided for all borings and sample intervals. Odor and/or sheen observations are typically only described if odor and/or sheen were present, but not in cases where no odor and/or no sheen were observed. The absence of odor and/or sheen should be noted in the logs as part of each description, particularly for borings in which odor and/or sheen were noted in one or more depth intervals, or where odor and/or sheen were observed in nearby borings.

    b. Reporting of odor/sheen is specified in the 2012 Work Plan and in the Addendum for all field screening activities, and as a basis for selection of additional sample intervals and analyses. Where provided, descriptions of odor and sheen are informative, but an absence of odor and/or sheen should not be left to assumption.

    Ensure that field observations are consistently reported, including the presence or absence of odors, sheens, and staining. Collect soil samples for laboratory analysis when odors, sheens, and/or staining are observed. Use appropriate sample containers when TPH-gasoline and/or VOC contamination is suspected to allow proper laboratory analysis within hold times. Samples collected for other contaminants may be archived for later analysis.

20. All of the PID readings for the Phase 2 borings are "0.0", even for intervals in which other indications of impacts (such as odor and/or sheen) were reported. This is unusual and is inconsistent with previous investigation findings.

    Please provide field calibration logs for PID units. Provide the field log book for each phase of data collection.

21. PID readings are not provided for all sample intervals, and the vertical spacing of readings is inconsistent.

    PID readings should be provided consistently for the entire vertical sequence in each boring, and for each sampled interval. The 2012 Work Plan and the Addendum specify PID readings for all field screening activities, and as a basis for selection of additional sample intervals and/or analyses. The PID screening results provided in the draft boring logs provide limited

information for evaluation of whether or not additional sampling and/or analyses should have been performed.

22. Some of the planned sample intervals shown in Table 3-2 of the Addendum were skipped. The rationale for skipping these intervals is not evident from the information provided in the logs, and soil does appear to have recovered in these skipped intervals.

    Provide the rationale for the skipped intervals which were not sampled as required under the Addendum.

23. Some boring/well locations include multiple logs, typically labeled "A", "B", etc. (typically locations where "refusal" was reported or borings were advanced with multiple drilling techniques; i.e. direct-push boring followed by well installation with an auger rig). Logs for the following "multiple boring" locations appear to be missing based on the boring designations.

    a. A log for EB-12-C is provided, but not for borings "A" or "B"

    b. A log for EB-30-D is provided, but not for "A", "B", or "C"

    c. Logs for EB-31-B and -C are provided, but not for "A"

    d. A log for EB-36-H is provided, but not for "A" through "G"

    e. A log for EB-53-C is provided, but not for "A" or "B"

    Provide logs for each boring attempted at each location. Without information regarding the field observations from the above-listed borings, it is uncertain if analytical results will be representative of and characterize site conditions at this location. Present all boring locations (i.e., "A", "B", "C", etc.) on the sample location map.

24. For some of the boring/well locations that include multiple logs, a note is included that samples from multiple borings were homogenized to meet soil volume requirements. In most of these instances, it is also noted that samples to be analyzed for TPH-gasoline and VOC were collected from a single boring sample, without clearly indicating if it was collected prior to sample homogenization. Additional comments on the boring logs are as follows:

    a. Soil boring EB-12: The notes on the log for EB-12-C do not indicate if sample intervals from the "A" and "B" borings were homogenized with the sample intervals from the "C" boring.

    b. Soil boring EB-30: The notes on the log for EB-30-D do not indicate if sample intervals from the "A", "B", and "C" borings were homogenized with the sample intervals from the "D" boring.

    c. Soil borings EB-31-A, EB-31-B, and EB-31C (note the log for EB-31-A was not provided, as stated above):

d. The notes on the log for EB-31-C indicate that the sample intervals from the "B" and "C" borings were homogenized. With no information about the samples from the "A" boring, it is uncertain if analytical results will be representative of and characterize site conditions at this location.

e. Samples to be analyzed for VOC were collected from EB-31-B. A "sulfur-like" odor was noted between 12.9 and 15.0 feet bgs in EB-31-C, a separate sample should have been collected from this location for VOC analysis. The logs do not indicate from which boring the samples to be analyzed for TPH-gasoline were collected. A "petroleum-like odor" was noted at 12.4 feet bgs in EB-31-B. It is not clear if this sample interval was collected for TPH-gasoline analysis.

f. Soil boring EB-36-H: It is noted on the log that samples collected for VOC analysis were taken prior to homogenization. No description of odor or sheen is provided on the EB-36-H log. In the absence of the remaining logs for this boring (i.e., EB-36-A through EB-36-G) it is uncertain that the VOC results from the "H" boring will be representative of and will properly characterize the site conditions at this location.

g. Soil boring EB-44: The logs for EB-44-1 and EB-44-2 do not indicate from which boring the samples to be analyzed for TPH-gasoline were collected.

h. Soil boring EB-53: The notes on the log for EB-53-C do not indicate if sample intervals from the "A" and "B" borings were homogenized with the sample intervals from the "C" boring.

i. Soil boring EB-55: The notes on the log for EB-55 indicate that samples were collected for VOC analysis prior to homogenization. However, there are no other indications that multiple boring attempts may have been made at this location.

j. Well EMW-17S: The notes on the log for EMW-17S-A indicate that the analytical samples were discarded after successful completion of EMW-17S-B.

k. Well EMW-21D: Sampled intervals from EMW-21D-A and EMW-21D-B were not homogenized. Samples were collected for analysis only from the "A" boring. However, red staining was noted in the "B" boring between 7.0 and 7.3 feet bgs.

In the Revised Addendum please include a discussion describing the rationale for determining when to discard or homogenize samples from multiple boring attempts at a single boring/well location, as well as the rationale and procedures for selecting samples to be analyzed for TPH-gasoline and VOCs when multiple boring attempts are made for a single boring/well location.

25. The boring logs all include notes and calculations for a "correction factor", apparently to correct for an assumption of linear compaction of the soil material within the sampler tube. The "correction factor" appears to be to have been used to normalize the recovery in each sampler to five feet (the length of the sampler tube). Recovery in direct-push borings ranged from approximately 2.3 to five feet, and was generally between 3.5 and 4.5 feet. The

"correction factor" was apparently used to correlate actual depths bgs with the interval collected from the sampler tube.

For example, if sample recovery was 80% (i.e., four feet recovered in a five foot sampler), and a sample was planned for two to four feet bgs, both the top and bottom depths were multiplied by the percent recovery, and the sample was collected from the sampler at the calculated intervals. For this example, the sample would be collected between 1.6 feet (2 x 80%) and 3.2 feet (4 x 80%) as measured from the top of the soil interval, but would be labeled as two to four feet. The calculations for sample intervals are shown at the bottom of each of the draft boring logs.

This approach leads to a degree of uncertainty with respect to actual sample depths. The methodology appears to assume that soil from the entire vertical sequence is represented in the sampler tube (i.e., no portions of the vertical sequence were missed) and that compaction is linear for all soil types. However, there are many factors that can result in a missed interval with direct-push sampling (for example, material being too coarse to enter the sampler tube or material being too soft or pushed aside so that the sampler advances through the interval without collecting soil). The information provided in the draft boring logs typically does not address the possibility of incomplete recovery or nonlinear compaction.

The depth intervals reported for each sample submitted to the laboratory for analysis or archive should be viewed with a "margin of error" in mind. It is difficult to assign a numerical value for a global "margin of error" (based on the variability of percent recovery), but ±0.5 foot would be a reasonable default value.

Provide a summary of the soil-depth correction factor problem and state the typical errors in the reported sample depths compared to the measured interval collected from the sampler tube.

26. Ecology has reviewed the boring logs and chains-of-custody for the soil samples collected in November/December 2014. In addition, Ecology reviewed the January 2015 draft contaminant concentration maps. The following list provides recommendations for potential additional analyses for soil samples collected for analysis of other parameters or as archive samples. This list is based on the information and descriptions provided in the draft boring logs, the chains-of-custody, and the draft contaminant concentration maps.

    a. *DMW-6A-2-3 and DMW-6A-3-3.5: Add analysis for dioxins/furans. "Organic debris" and "Ash debris" were noted on the log in these intervals.*

    b. *DMW-6A, all samples: Add analysis for SVOCs to characterize pentachlorophenol impacts in this area.*

    c. *EB-03-3-5: Add analysis for PCBs to characterize extent of PCB impacts near SS-4 and SS-5.*

    d. *EB-06, all samples: Add analysis for PCBs to characterize extent of PCB impacts in this area.*

e. *EB-07-2-4: Add analysis for dioxins/furans. "White fire brick" was noted on the log in this interval.*

f. *EB-07, all samples: Add analysis for PCBs to characterize extent of PCB impacts in this area.*

g. *EB-12-5-7: Add TPH-Dx analysis. A "diesel-like odor" was noted on the log in this interval.*

h. *EB-12, all samples: Add analysis for SVOCs to characterize extent of pentachlorophenol in this area.*

i. *EB-12-8-10: Add dioxins/furans analysis. The log describes "fused, glassy, sand material, coal-like fragments" in this interval.*

j. *EB-13, all samples: Add analysis for SVOCs and dioxins/furans to characterize the extents of pentachlorophenol and dioxins/furans in this area.*

k. *EB-19-1.5-4: Analyze this interval for all analyses identified in Table 3-2 of the Addendum.*

l. *EB-20, all samples: Add analyses for PAHs and PCBs to characterize impacts in this area.*

m. *EB-22, all samples: Add analysis for dioxins/furans to evaluate the extent of dioxins/furans detected in EMW-6S.*

n. *EB-25-2-4; EB-25-5.5-7.5; and EB-25-10.5-12.5: Add analysis for dioxins/furans. Anthropogenic materials were noted on the log for these intervals.*

o. *EB-27-2.5-4.5: Add analyses for metals, PAHs, SVOCs, and PCBs. Pentachlorophenol was detected above preliminary screening levels in well EMW-9S. Additional analyses will address data gaps in shallow soil in this area.*

p. *EB-30-2-4; EB-30-6-8; and EB-30-16.5-18.5 (well EMW-31D): Add analysis for dioxins/furans to evaluate the lateral extent of impacts in this area.*

q. *EB-31-12.5-14.5 (well EMW-32D): Run archived sample for all analyses. Logs note "petroleum odor" and "sulfur-like odor".*

r. *EB-31-18-20 (well EMW-32D): Run archived sample for all analyses to assess soil conditions in an area with limited data.*

s. *EB-34-3.5-5: Add dioxins/furans analysis. Log describes "coal debris" in this interval.*

t. *EB-34-8-10; EB-34-11-13; and EB-34-15-17: Add TPH and VOC analyses. Log describes "strong petroleum-like odor, rainbow sheen" in these intervals.*

u. *EB-35, all samples: Add analysis for metals, PAHs and PCBs to define lateral and vertical extent of contaminants in this area.*

v. *EB-42-3-5: Add dioxins/furans and metals analysis. Log notes "potential coal debris" and "paint chip flakes" in this interval.*

w. *EB-49, all samples: Add analysis for PCBs to define lateral and vertical extent of PCB impacts in this area.*

x. *EB-53-2-4; EB-53-5-7; and EB-53-8-10 (well EMW-30D): Add analyses for SVOCs, PCBs, and dioxins/furans to define extent of impacts in this area.*

y. *EB-55, all samples: The log notes "fire-brick-like debris" in the 0.5-3 foot depth interval, but a sample was not collected for dioxins/furans analysis. Analysis of dioxins/furans was omitted from all samples collected at EB-55 although it was listed for initial analysis in Table 3-2 of the Addendum. All samples from EB-55 (2-4', 5-7', 8-10') should be analyzed for dioxins/furans as specified in the Addendum.*

z. *EB-56, all samples: Add analysis for PCBs to define lateral and vertical extent of PCB impacts in this area.*

aa. *EMW-20D-2-4 and EMW-20D-4-7: Add dioxins/furans analysis. Log describes "burnt wood fragments" from 4.1-4.5 feet bgs (log "A").*

bb. *EMW-20D-10-11: Run archived sampled for dioxins/furans analysis. Log notes "black wood-like material". In addition, data may be used to evaluate the lateral extent of dioxins/furans concentrations detected in EB-45.*

cc. *EMW-21D-15-15.4 and EMW-21D-17-17.7: Run archived samples for metals and PCBs analyses to characterize impacts in this area.*

dd. *EMW-22D-2-4: Add dioxins/furan analysis. Log describes "wood fragments, burnt" at 0.2-1.2 feet bgs, but a sample was not collected. However, the two to four foot bgs interval sample was collected.*

ee. *EMW-22D-12.5-14.5: Add full suite of analyses performed for other EMW-22D samples (TPH, SVOCs, and PAHs). Log noted "petroleum-like odor, rainbow sheen" for 12.5-14.6 foot interval. Sample was initially submitted for archive.*

Review soil boring logs and draft contaminant concentration maps to identify additional samples collected during November/December 2014 that may be available for additional analyses that will define the lateral and vertical extents of Preliminary Contaminants of Concern (PCOCs).

Direct the laboratory to perform the above-listed analyses, in addition to any analyses identified by DeNovo's review of the soil boring logs and draft contaminant concentration maps. Data from these analyses must be validated to EPA Stage 2b and incorporated into the RI data set. If samples are outside holding times or no longer available in sufficient volume to perform these analyses, include plans to collect representative samples in the Revised Addendum.

27. The EB-34 boring log notes a "strong petroleum-like odor, rainbow sheen" from 10.2-20 feet bgs in description on first page, but on second page notes "no odor/sheen" at 18.1 feet bgs. The boring log is inconclusive regarding the presence of odor and sheen at the bottom of the boring (20 feet bgs). If odor and/or sheen were observed at the bottom of the boring, the boring should have been advanced to greater depth, and an additional deeper boring should be advanced at this location.

    Add at least one deep boring adjacent to EB-34 to sample shallow intervals (if needed to characterize TPH and VOCs, see comments above regarding additional analyses), the 18 to 20 feet bgs interval, and deeper intervals if field observations indicate the presence of PCOCs.

28. EMW-19D: The boring log describes a "silvery sheen on surface of standing water" for the 13.4-14.2 foot interval, but a sample was not collected. Samples were collected from 11-13 feet bgs and 15-17 feet bgs, but the "silvery sheen" was not noted in these intervals. In addition, the log notes a "petroleum-like odor and rainbow sheen" in the 21.5-31.8 foot interval, but no additional samples were collected for analysis (samples were collected at planned intervals of 18-20 feet, 26-28 feet and 38-40 feet).

    Add at least one boring adjacent to EMW-19D to sample the intervals described above, (13.4-14.2 feet bgs and 21.5-31.8 feet bgs) and others, if field observations indicate the presence of PCOCs. All samples should be analyzed for the full suite specified for EMW-19D samples (PAHs, PCBs, TPH).

29. EMW-22D: As indicated in the previous section, "wood fragments, burnt" were described in the log at 0.2-1.2 feet, but a sample was not collected.

    Add at least one boring adjacent to EMW-22D to sample the 0 to 1.5 foot interval for dioxins/furans analysis. Note that this boring may need to be extended to sample the 12.5-14.6 feet bgs interval for TPH, SVOCs, PAHs if the archived sample is not available for these analyses.

30. A moderate creosote odor and sheen was noted in boring IAB-37 from three to 24 feet bgs. Contamination was present in the samples from this boring. Well DMW-6 was replaced near this area. The well was drilled to a depth of 20 feet bgs and the sample from 18-20 was archived and not analyzed. Well DMW-6 was not drilled to a sufficient depth to collect samples to attempt to define the lateral and vertical extent of contamination at this location.

    Advance additional borings and a well in this area to characterize contamination in this area. Information on the extent of the contamination is required for completion of the

remedial investigation and selection of a cleanup action. If PCOCs are identified through field screening or analytical results in the new borings, additional "step-out" borings may be needed to characterize the vertical and lateral extent of impacts.

31. Locations for additional soil borings were selected to fill data gaps, including defining the nature and extent of contaminants at identified soil "hot spots" and in areas of the Site where limited or no analytical soil data are currently available. Other contaminants that are not depicted on the Addendum soil concentration maps and the January 2015 draft soil contaminant maps need to be considered for laboratory analysis. Recommended locations are shown on the enclosed figure.

    In addition to the borings identified in the following comments, DeNovo should review soil boring logs, all Site soil data, and draft contaminant concentration maps to identify the locations of additional soil borings needed to fully define the nature and extent of PCOCs. Particular attention is needed in areas with low sample density and in areas near and downgradient from areas where PCOCs are known or suspected to greatly exceed preliminary screening levels (i.e., "hot spots").

    Areas where potential "hot spots" were identified based on non-detects with elevated detection limits, such as for PCBs in the central portion of Parcel F, additional sampling and analysis is required to verify the presence of the PCOCs. Ensure that the analytical laboratory's PQLs are at or below the preliminary screening levels for each analyte.

32. The upper five to six feet of soil at the Site has not been characterized for PCOCs.

    In the Revised Addendum, develop a sampling plan to characterize the lateral and vertical extent of PCOCs within the upper 5 to 6 feet of soil across the Site. Information on the extent of contamination is required for completion of the remedial investigation, feasibility study, and selection of a cleanup action.

33. The lateral and vertical extent of PCBs is not defined along the western property line of Parcel F.

    Advance additional soil borings to characterize the extent of PCBs to the west of SS-5, FB-4 and EB-16. If PCOCs are identified through field screening or analytical results in the new borings, additional "step-out" borings may be needed to characterize the vertical and lateral extent of impacts.

34. The lateral and vertical extent of arsenic, PCBs, and PAHs is not defined in the central portion of Parcel F.

    Advance additional soil borings to characterize the extent of arsenic in the central portion of Parcel F, between previous borings SLR-3 and SLR-7, EB-17 and EB-14, and SB-3 and EMW-5SA. If PCOCs are identified through field screening or analytical results in the new borings, additional "step-out" borings may be needed to characterize the vertical and lateral extent of impacts.

35. The lateral extent of TPH and PAHs has not been characterized near EMW-7S.

    Advance additional soil borings near EMW-7S to characterize the lateral extent of TPH and PAHs at EMW-7S. If indications of TPH and/or PAHs are identified through field screening or analytical results in these borings (or in EB-20), additional "step-out" borings may be needed to characterize the vertical and lateral extent of impacts.

36. Site data are limited within the former Treated Pole Storage Area, the area to the north, and the area around boring EB-35 and EB-38. Additional data are needed to define the lateral and vertical extent of PCOC impacts in these areas.

    Advance additional soil borings within and to the north of these areas where previous data are limited and/or additional data are needed to define "hot spots." Soil samples should be analyzed for the full suite of PCOCs. If indications of PCOCs are identified through field screening or analytical results in the new borings, additional "step-out" borings may be needed to characterize the vertical and lateral extent of impacts.

37. The vertical extent of metals, PAHs, PCBs, and TPH has not been characterized in the former Creosote Tanks and Pole Dipping Tank areas and to the north of these areas (see Addendum figures associated with Cross-section I-I').

    Advance additional soil borings in this area to define the vertical extent of PCOC impacts in these areas. If PCOCs are identified through field screening or analytical results in the new borings, additional "step-out" borings may be needed to characterize the vertical extent of impacts.

38. The vertical and lateral extent of the "oily substance" previously identified in soil in the vicinity of the former Wood Treatment Facility has not been defined.

    Advance additional deep soil borings in addition to EB-36 and EB-42. Soil samples should be analyzed for the full suite of PCOCs. If PCOCs are identified through field screening or analytical results in the new borings, additional "step-out" borings may be needed to characterize the vertical and lateral extent of impacts.

39. The lateral and vertical extents of metals, PCBs, PAHs, and dioxins/furans have not been defined in the Interim Action area (see Addendum figures associated with cross-section D-D').

    Advance additional soil borings to characterize the extent of metals, PCBs, PAHs, and dioxins/furans detected in the central portion of the Interim Action area (northern portion of Parcel D). Additional analyses were also added to borings already located in the area. If PCOCs are identified through field screening or analytical results in the new borings, additional "step-out" borings may be needed to characterize the vertical and lateral extent of impacts.

40. The lateral and vertical extent of metals, PCBs, and PAHs is not defined in the former Pipe Manufacturing area, Sandblast area and near well EMW-11S.

Advance additional soil borings to characterize the extent of the PCOCs, including dioxins/furans, detected in this area to better define "hot spots" near well DMW-6 and borings EB-32 and EB-41. Additional borings are needed in the area between the former Pipe Manufacturing area and Sandblast area where soil samples have not been collected. If PCOCs are identified through field screening or analytical results in the new borings, additional "step-out" borings may be needed to characterize the vertical and lateral extent of impacts.

41. The lateral and vertical extent of metals, PCBs, and PAHs is not defined to the north and south of the former sawmill area.

    Advance additional soil borings to characterize the extent of PCOCs in this area, to the north of EB-11, near boring EB-28, and near boring EB-45. If PCOCs are identified through field screening or analytical results in the new borings, additional "step-out" borings may be needed to characterize the vertical and lateral extent of impacts.

42. The extent of PCOCs has not been defined along the Slip 4 shoreline near wells CMW-3, CMW-4, and CMW-5 and boring DB-7.

    Advance additional soil borings to characterize the extent of PCOCs in these areas. If PCOCs are identified through field screening or analytical results in the new borings, additional "step-out" borings may be needed to characterize the vertical and lateral extent of impacts.

43. The total metals concentrations in the soil samples submitted during the interim action for TCLP analysis (composite samples) were typically much lower than the total metals concentrations detected in discrete soil samples collected from interim action borings. For example, total arsenic was detected at a maximum concentration of 6,000 mg/kg in the interim action samples (as listed on Addendum Table 2-6), but the samples submitted for TCLP analysis had a maximum total arsenic concentration of 960 mg/kg (listed in the lab reports in Appendix G, but not tabulated). Total lead was detected at up to 3,700 mg/kg in interim action boring samples, but only at a maximum of 800 mg/kg in samples submitted for TCLP analysis. Although none of the samples submitted for TCLP metals analysis exceeded the respective dangerous waste criteria (for those analytes with such criteria), the samples submitted for TCLP do not appear to represent areas of greatest metals impacts.

    Additional TCLP metals analyses may be needed to characterize any waste soils generated at the site, and also to characterize the leaching potential of metals from highly contaminated soil at the Site.

44. The nature and extent of contaminants in groundwater have not been defined throughout the Site.

    Additional groundwater monitoring wells screened in the shallow (~20 feet bgs) and intermediate (~50 feet bgs) zones are required at the upgradient to cross-gradient perimeters of the Site to evaluate the nature of contaminants potentially migrating from offsite sources.

Shallow and intermediate groundwater monitoring wells are also required in the interior of the Site to define groundwater contaminant plumes within the Site boundaries.

The net groundwater flow direction in this tidally influenced aquifer has not been well defined. Therefore, the downgradient transport direction of groundwater plumes is considered approximate. Some recommended wells illustrated on the enclosed figure are located in the approximately downgradient direction from undefined or poorly defined groundwater contaminant plumes. Information on the proximity of the contaminant plume to the surface water is required for completion of the remedial investigation and selection of a cleanup action.

To evaluate the nature of contaminants potentially migrating onto the property, the following wells are required:

a. *Two additional shallow zone wells and one intermediate zone well are required near the property boundary with 8th Avenue S;*

b. *One additional shallow groundwater monitoring well is required adjacent to the western property boundary with Markey Machinery Company; and*

c. *Three additional shallow groundwater monitoring wells are required near the property boundary with S. Garden Street.*

To define groundwater contaminant plumes in the interior area of the Site, the following wells are required:

d. *One intermediate well near well EMW-5SA to evaluate PCOC concentrations in the intermediate groundwater zone;*

e. *One shallow zone well in the area north of the former Treated Pole Storage area (where groundwater data have not been collected previously);*

f. *One intermediate zone well near existing well EMW-9S to evaluate PCOC concentrations in this zone;*

g. *Two wells (shallow- and intermediate-zone pair) downgradient of borings IAB-19 and IAB-20 to evaluate metals in groundwater;*

h. *Two wells (shallow- and intermediate-zone pair) to replace abandoned well HC-19 to evaluate all PCOCs;*

i.

j. *One shallow zone well downgradient of wells DMW3/EMW-10D/EMW-19D to evaluate metals, PAHs, and TPH concentrations.*

To define PCOC contaminant plumes within 100 to 150 feet of the shoreline of the Site, five paired shallow and intermediate zone wells (10 wells total) are required upgradient or inland of the following wells:

- *CMW-7/EMW-16D and EMW-13S/EMW-21D;*
- *CMW-6/EMW-14D;*
- *CMW-5/EMW-30D;*
- *CMW-4/EMW-20D; and*
- *CMW-3/EMW-31D.*

Soil samples must be collected from all well borings to further delineate the lateral and vertical extent of contaminants in soil. Well locations shown on the enclosed figure were placed to address data gaps in the soil and groundwater data sets.

In the Revised Addendum, show proposed groundwater monitoring wells on the maps that present the contaminant groundwater plumes. Identify all existing and proposed shallow, intermediate, and deep wells with symbols unique to the zones in which the wells are screened, rather than using a symbol that identifies the date the well was installed.

All wells must be added to the quarterly groundwater monitoring program and analyzed for the full suite of PCOCs as part of the RI. The full-suite of analytes should be maintained for any additional wells that are installed and sampled during the required quarters of groundwater monitoring. Upon approval from Ecology, some chemical classes may be eliminated from the analyses performed from individual wells based on detection frequencies established during the first two quarterly monitoring events. This will be considered on a well-by-well basis.

In addition and not shown on the enclosed draft figure, wells in the wood treating area near 10D may be required and screened in the contaminated soil zone(s).

45. The arsenic and selenium analyses of groundwater in the shoreline wells were rejected by data validators in some samples. Data from the October 2014 sampling event were rejected. Because only the dissolved data are available, two complete full-suite data sets are not available.

    Include a discussion of this issue in the text about the technical quality of the data set, and in the groundwater section. Include a plan to address this issue including collection of additional groundwater samples, additional wells in alternate locations, or other methods to assure the collection of appropriate data for these chemicals in the shoreline area.

46. Groundwater data for arsenic indicate exceedances of screening levels in the 50-foot deep wells and the shallow zone wells in the shoreline area. This indicates that contaminated groundwater may be entering the surface water below the sheet pile wall.

    Include a discussion of the shallow and deep well data and the indications for all potential ongoing contaminant releases to the LDW. Propose additional wells where needed to further assess the movement of contaminated groundwater into the surface water.

47. The groundwater maps provided show diesel range organics on Figure 2-16 and residual range organics on Figure 2-17.

    Unless the specific nature of the petroleum material is known, revise the groundwater maps to show the combined diesel and residual range organics information. Show the proposed well locations on the maps so that the proposed locations can be evaluated in relation to the estimated contaminant plume(s).

48. The deeper wells (screened to ~80 feet bgs) proposed in the Addendum need a unique designation to distinguish them from the deep (now intermediate) wells screened at ~40-50 feet bgs (e.g., "DD" instead of "D"). DeNovo indicates that deeper wells will be set at 80 feet bgs, or at the bottom of the saturated unit, but they do not identify how the "bottom of the saturated unit" would be defined or identified in the field.

    In the Revised Addendum, include the criteria for determining the depth to set wells for installation of the deeper groundwater monitoring wells. Add rationale for why these wells are necessary and their selected screen depths. Is there a known aquitard at this approximate depth? If the aquitard depth is unknown, it could be stated, for example, that the deeper wells will be set above the first significant aquitard layer below the intermediate zone, or at a maximum depth of 80 feet, whichever is encountered first.

49. The proposed tidal study includes a limited number of wells along the shoreline, a few wells near the western boundary of the Site, two wells in the northern portion of the Site, and only one well (EMW-5Sa) in the interior of the Site.

    If one of the goals of the tidal survey is to identify groundwater flow at different tidal stages, and to identify net groundwater flow, then additional wells will need to be included in the interior of the Site. The previous tidal study (by SLR) produced questionable groundwater flow directions near the seawall, due to a lack of data points. The text of Section 3.7 states that the wells to be used in the tidal study are shown in Figure 2-1. However, the proposed wells are not so indicated on this figure.

    The well network should include additional shallow wells along the shoreline and the sheet pile seawall (such as EMW-13S, CMW-6, CMW-5, CMW-3, CMW-2, EMW-3S, and proposed new wells along 8th Avenue S) and additional intermediate wells (EMW-14D, EMW-30D, EMW-31D, and EMW-32D), plus any new intermediate/deep wells that are installed down-gradient from the former wood treatment facility and along 8th Avenue S.

    Results of the tidal study should be used to evaluate groundwater flow gradients, tidal amplitudes, and lag times between various wells. In addition to water levels, field measurements of salinity (or specific conductance) should be made in the wells during at least all low and high tidal levels. This will aid in interpretation of how far seawater intrusion affects the site during tidal cycles, and will distinguish between simply a pressure wave transmitted through the aquifer versus actual LDW/Slip 4 water entering the aquifer at high tidal periods.

50. The Addendum did not include a discussion of Site salinity nor provide maps showing where the groundwater may be affected by marine surface water interaction.

    Include a discussion of the salinity data and provide maps showing the salinity in the groundwater at the site with the available data. If additional data and/or wells are indicated to characterize the interaction between the groundwater and surface water, propose additional well locations to address data gaps.

51. The draft SAP Addendum proposes to collect surface sediment samples in Slip 4. No subsurface core samples are proposed. The recent sediment cleanup on the Boeing Plant 2 property in Slip 4 identified subsurface PCB contamination which may also be present on the DeNovo Slip 4 property.

    Subsurface sediment samples should be collected near the mouth of Slip 4 and adjacent to the recent Boeing Plant 2 cleanup area; a minimum of five sediment cores should be collected and analyzed for sediment SQS including PCBs to determine if contamination is present below the surface sampling interval. Sufficient samples should be collected to characterize the extent of the subsurface sediment contamination in this area.

52. Stormwater discharges from the six outfalls on the property are a potential source of contaminants to Slip 4. Phase 2 sediment sample locations should characterize sediments near the six outfalls; in general, surface sediment samples should be located within approximately 50 feet of outfalls less than 24 inches in diameter, and within approximately 100 feet of outfalls that are 24 inches or greater.

    Based on previous sampling conducted in Slip 4, and the proposed Phase 2 sediment sampling locations provided in the draft SAP, additional sampling will be required near Outfalls OF1, OF2, and OF4 to evaluate potential sediment contamination associated with current and historical discharges from these outfalls.

53. The draft SAP proposes to collect surface and subsurface sediment samples near the southwestern corner of the site to characterize the extent of a historical sandblast grit dumping site. These samples were collected in December 2014. Preliminary results indicate the presence of PCBs, HPAHs, and LPAHs in subsurface sediments at concentrations above the benthic lowest apparent effects threshold (LAET) and second lowest apparent effects threshold (2LAET) in this area, both downstream and upstream of the approximate dumping location. In addition, total dioxins/furans TEQ above the 25 ng/kg Remedial Action Level (RAL) was found in two locations on the downstream side of the former sandblast grit area.

    Additional characterization of the area potentially affected by sandblast material is needed. The dioxins/furans and PAHs detected in the Phase 2 sediment samples may be associated with this material, which may have migrated downstream from its original location. A minimum of three additional surface and subsurface sediment samples should be collected downstream of the December 2014 sample locations to delineate the downstream extent of contamination. In addition, subsurface sediment samples should be collected at locations SSED-09 and SSED-17A, since the Phase 2 subsurface sample collected between these two locations contained PAHs, PCBs, and phthalates at concentrations above the LAET.

Samples should be analyzed for PCBs, dioxins/furans, SVOCs, metals, TOC, and grain size. Additional samples should be collected as needed to fully delineate the extent of contamination in this area including the intertidal and/or bank area.

54. The October 2012 Work Plan called for two rounds of storm drain (catch basin) solids sampling. The first round of samples was collected in June 2013. Each of the active catch basins on Parcel D was subsequently cleaned. During the second round of storm drain solids sampling in February 2014, only two structures contained enough solid material to sample. The draft SAP Addendum does not propose any additional catch basin solids sampling.

    Since the collection of storm drain solids samples in June 2013 and February 2014, land use at the facility has changed; the Phase 1 storm drain solids data no longer represent current activities at the site. All catch basins on the site (including both Parcels D and F) should be resampled to assess the likelihood that contaminants are being transported to the LDW via the stormwater pathway.

    In addition, the samples collected previously had excessively high reporting limits; analytical methods should be selected to ensure that reporting limits are below the relevant screening levels, per the preliminary screening levels presented in Section 2.1.

    NOTE: Section 2.1 should include screening levels for storm drain solids and stormwater, based on sediment and surface water criteria.

    In addition to the suite of analytes selected for Phase 1, at least one sample from each storm drain line should be analyzed for dioxins/furans as part of the Phase 2 storm drain solids sampling. Where possible, structures selected for dioxins/furans sampling should be near locations where dioxins/furans are elevated in soil.

55. The October 2012 Work Plan called for five stormwater monitoring events. Two events were completed as part the Phase 1 investigation, prior to the land use change. The Addendum proposed only one stormwater outfall sampling event.

    Phase 2 stormwater sampling should include additional stormwater monitoring events per the October 2012 Work Plan. As stated above, land use at the facility has changed. Therefore, the Phase 1 stormwater samples are not representative of current activities at the site. A minimum of three rounds of stormwater monitoring is needed to adequately characterize the potential for transport of Site contaminants to the LDW.

56. A summary of data quality has not been provided for the Site data set. A plan for establishing a Site data set to be used for the RI has not been determined to assure that the appropriate data quality is achieved.

    The Site data set consists of older data collected for property transfer purposes with missing information such as detection limits, and more current data with variable technical quality, such as practical quantitation limits (PQLs). Include in the Revised Addendum a discussion of the technical quality status of the site data set and summary of data quality and validation

information, including issues with the data set and discussion of sampling and/or laboratory issues which could bias data. Discuss a rationale for how site data will be used in the RI.

57. The Addendum was prepared using unvalidated Phase 1 data. The entire data set, including data collected in November and December 2014, requires evaluation using the appropriate process to adequately determine site potential contaminants of concern (PCOCs). Because this evaluation is not complete, all appropriate maps of PCOCs may not have been included for consideration in the Addendum to assure that all Site contaminants were being addressed.

    Once an appropriate process to assess usability of Site data and applicability of historical data is established, the process for determining site PCOCs should be conducted. Contaminant maps to be included in the Revised Addendum can then be determined through coordination with Ecology.

58. Data validation was performed under Stage 2A guidelines by Laboratory Data Consultants (LDC) for the samples collected during the Phase 1 RI activities and under Stage 2B guidelines for the samples collected during the Interim Action activities.

    Summary-level (EPA Stage 2b) data validation should be performed for all standard chemistry. A full-level (EPA Stage 4) data validation should be performed for dioxins/furans. Compliance-level (EPA Stage 2a) screening, including a comparison of detected results to associated sample concentrations, should be performed for all rinse blank, trip blank, and waste characterization samples. As part of the validation process, 100 percent of field sample results and 10 percent of QC results in the EDD should be verified against the data package.

59. Data tables in the Addendum were prepared with preliminary data.

    Text, tables and figures in the Revised Addendum should show only the accepted and validated sample results, including data qualifiers as assigned by LDC or other third-party validators.

60. Several data validation reports for the interim action data set indicate that sample hold times were missed by several days to several weeks. As shown in Appendix C on pages 105 and 121, polynuclear aromatic hydrocarbons (PAHs) and polychlorinated biphenyls (PCBs) were extracted more than three weeks after the end of the 14-day holding time window. Due to soil reactivity outside the holding time "window", soil analytical results may be impacted by this deviation. The data validation reports address this issue by qualifying associated data points as estimated (including non-detect results), but these qualifiers have not been updated in the data tables, and do not address overall data usability.

    Update the data tables and add a discussion in the Addendum of the number of sample results qualified due to exceeding the holding time criteria identified in the method(s), and the implications for project data use.

61. The data validation reports from LDC for the interim action data do not appear to be using Spike Recovery Criteria (%R) acceptance criteria established by the laboratory for

LCS/LCSD and/or MS/MSD samples. The results were evaluated against a 50-150 %R window, and LDC qualifies and rejects data based on this alternate acceptance criteria. For example, in SDG 250-20167-1 the data were "J" qualified as estimated by LDC for MS/MSD recoveries outside the acceptance criteria (e.g. lead, barium, silver), shown on Appendix C, PDF page 48. These J-qualifiers are not presented on the data tables. See PDF page 15; e.g., the metals results for lead and barium are not J-qualified for IAB-02-3-5 and IAB-02-5-7).

Explain the reasons for the recovery criteria issues noted here. Explain if it was due to more stringent site-specific acceptance criteria that are identified in a previous work plan or QAPP/SAP, approved by Ecology. Update the data tables with any qualifiers added by the data validation process.

62. Low-level blank contamination was noted as an issue in some samples in the interim action data set. In SDG 250-20167-1 and 250-20212-1, data were qualified as non-detect by LDC due to low-level metals, such as antimony and selenium concentrations in method blank(s) shown on Appendix C page 47-48 and 133-134. These non-detect qualifiers, such as antimony and selenium in IAB-02-3-5 and IAB-02-5-7 shown on page 15, are not presented on the data tables. The metals results for these samples are still shown as detected concentrations.

    Revise the data tables and figures to show the qualifiers, and include in the discussion of the technical quality of the data the effect of the low level blank contamination on the site data set.

63. Discrepancies were noted between the data validation reports and laboratory reports for the interim action data. The data tables and data validation reports appear to be created from preliminary results are not consistent with the final laboratory reports. Examples are:

    a. In SDG 250-20167-2 and 250-2012-2, the data were qualified for individual volatiles in this data validation report, beginning on Appendix C, page 65 and page 160, including volatile compounds that do not appear to be reported in the corresponding final laboratory analytical report. For example, acrolein and vinyl acetate are mentioned in the data validation report, but are not reported in the final laboratory report. The data validation report has filename "_RV1", report dated November 3, 2014, and the TestAmerica report is dated August 5, 2014, on the cover page. This indicates that a change in analyte lists possibly occurred between the preliminary laboratory report and the final laboratory report, indicating that the preliminary laboratory report may have been used for the data validation, rather than the final report. Acrolein and vinyl acetate are reported in the data tables with the other volatile organic compounds (VOCs).

    b. Similar discrepancies were noted when comparing the semivolatile organic compounds (SVOCs) data validation report containing results for benzoic acid (see Appendix C PDF page 83) to the final laboratory analytical report where benzoic acid does not appear in the list of reported analytes for SVOCs. Also noted in this report: the range of acceptable %R for LCS/CLSD and MS/MSD analyses was based on an "advisory" (likely the QAPP/SAP or work plan approved by Ecology) and not based

on the acceptable ranges published in the QA/QC section of the laboratory analytical report for the individual analytes.

Explain the reason for the discrepancy, such as if LDC did not receive the final laboratory reports, or did not look for changes in the analyte lists before submitting their revised data validation report.

64. The rejected data in the interim action data set were assessed with some discrepancies noted. On Appendix C, page 178, the R-qualifier was applied by LDC to benzoic acid results associated with laboratory results that are not reported in the final laboratory report for SDG 250-2012-2. The 2,4-dinitrophenol data are rejected due to no recovery in MS/MSD samples. "R" data is not accurately shown in the associated data table (though in this case the result is non-detect, and to apply the "R" qualifier in the table is essentially inconsequential). Additional issues in the remaining rejected data are as follows:

    a. In SDG 250-20213-2, as explained in the case narrative of the laboratory analytical report, the sample was run at a dilution and both results were reported in the laboratory report from TestAmerica. R-qualifiers from LDC on Appendix C, page 255, appear to be data points rejected because more than one result is reported for the sample IAB-19-5-7, original results and dilution results. The data tables report both results for IAB-19-5-7 in the table, see PDF page 187.

    b. In SDG 250-20238-1, the "R" qualifier was applied by LDC to benzoic acid results due to low MS recoveries. Also, benzoic acid may not be reported in the final laboratory report, similar to SDG 250-2012-2.

    c. In SDG 250-20238-1, Appendix C, page 398, the R-qualifier was assigned to samples with two reported results, the original analysis plus dilution analysis.

    d. In SDG 250-20267-2, Appendix C, page 511, the R-qualifier was assigned to samples with two reported results, the original analysis plus dilution analysis.

    Revise the data tables and figures to show only accepted and validated results. Include in the discussion of the technical quality of the data that results rejected through data validation are eliminated from the site data set. Explain if the MS/MSD and/or LCS/LCSD results may have been reported outside the laboratory acceptance criteria or outside the site-specific acceptance criteria (more stringent acceptance criteria) and thereby given an R-qualifier by LDC.

65. The PQLs for the dioxins OCDF and OCDD in the Addendum are 10 ng/kg, but were 5 ng/kg in the 2012 work plan. PQLs for other dioxins/furans are the same or lower than the 2012 work plan.

    OCDF and OCDD should be reported to the lower PQL, as presented in the 2012 work plan.

66. A PQL for selenium is listed for soil analysis, but not for groundwater analysis.

    Provide a PQL for selenium for groundwater analysis.

Ecology appreciates your work toward completion of the Phase 2 RI and looks forward to working with you to complete the RI through the Revised Addendum and prepare a Draft RI Report. Please contact me at vsut461@ecy.wa.gov or (425) 649-7219 if you have any questions or would like to discuss this review.

Sincerely,

Victoria Sutton

Victoria Sutton
Hydrogeologist
Toxics Cleanup Program

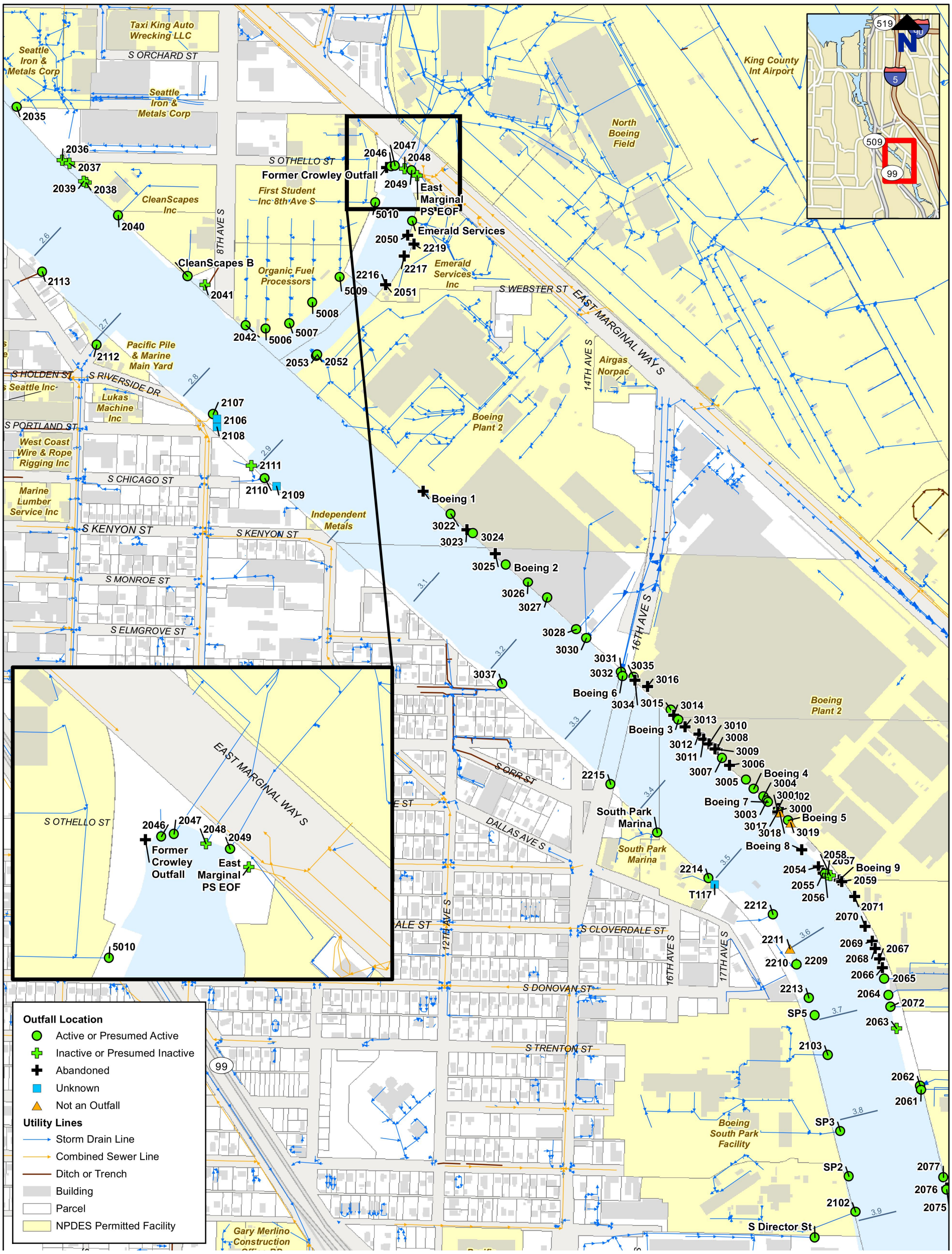
Enclosures

By Certified Mail [7011 0470 0003 3682 6527]

cc: Stephen Wilson, Crowley Maritime Corp.

APPENDIX B

FIGURE SHOWING LOCATIONS OF STORMWATER OUTFALLS INTO SLIP 4



NOTES

1) FIGURE OBTAINED FROM LOWER DUWAMISH WATERWAY OUTFALL INVENTORY UPDATE, JANUARY 2012 – FEBRUARY 2014, LOWER DUWAMISH WATERWAY OUTFALL LOCATIONS, RIVER MILE 2.5 TO 3.8, PREPARED BY LEIDOS, MARCH 2014.

SCALE: 1" = 500'
WHEN PLOTTED AT 11 x 17 PAGE SIZE
0 500 1,000 1,500'

8TH AVENUE TERMINALS, INC. SITE
7400 8TH AVENUE SOUTH
SEATTLE, WASHINGTON

Drawing
SLIP 4 OUTFALL LOCATIONS

Date	June 22, 2022	Scale	AS SHOWN
File Name	01-01	Project No.	128.00205.00044

Fig. No. 1

SLR
22118 20TH AVENUE SE
BLDG. G, SUITE 202
BOTHELL, WA 98201
T: 425-402-8800
F: 425-402-8488

N:\Bothell\1 PROJECTS\Crowley - 205\00044 Additonal Sampling and Feasibility Study\Draft Feasibility Study Report\Appendix A\Revised Appendix A\01-01.dwg

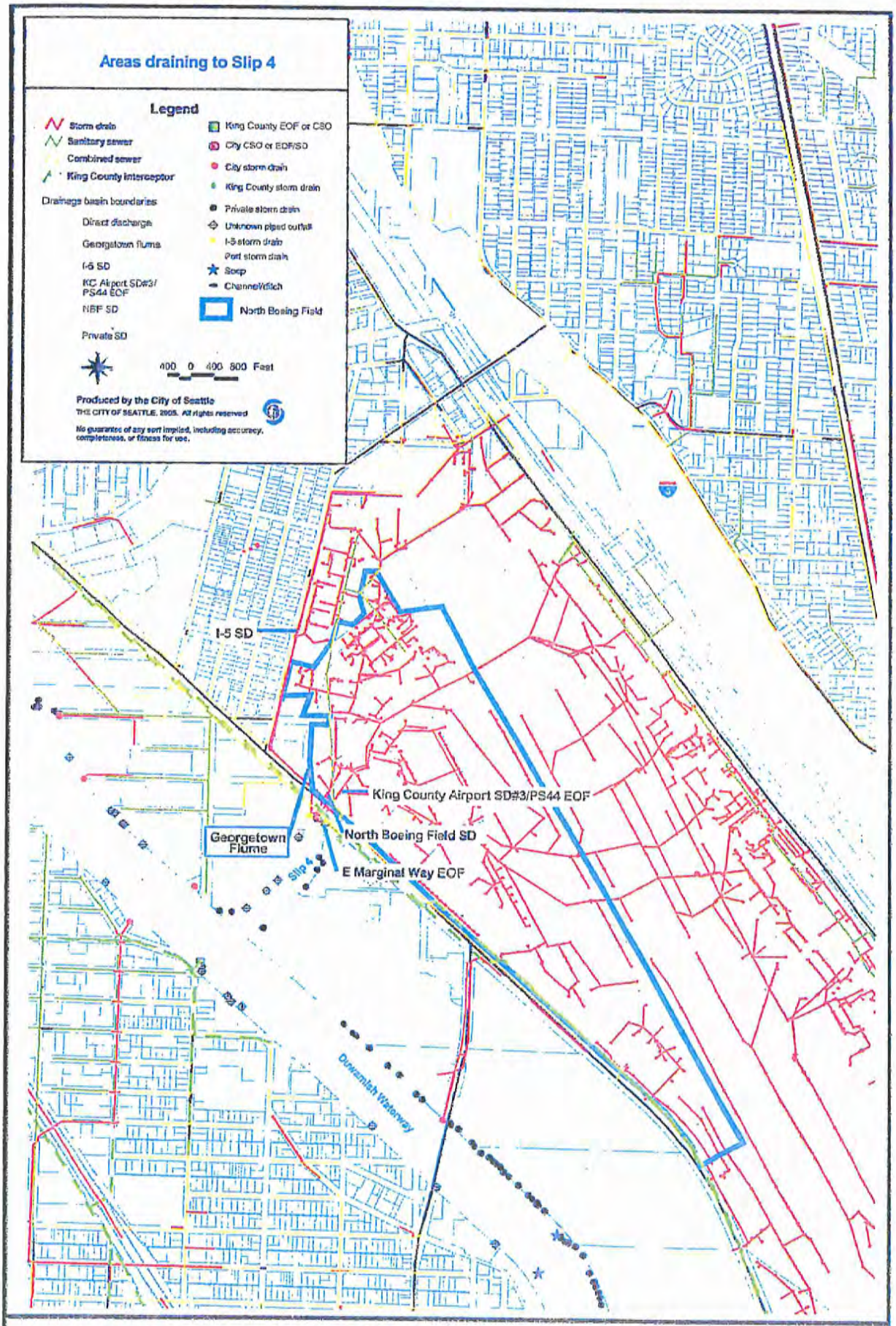
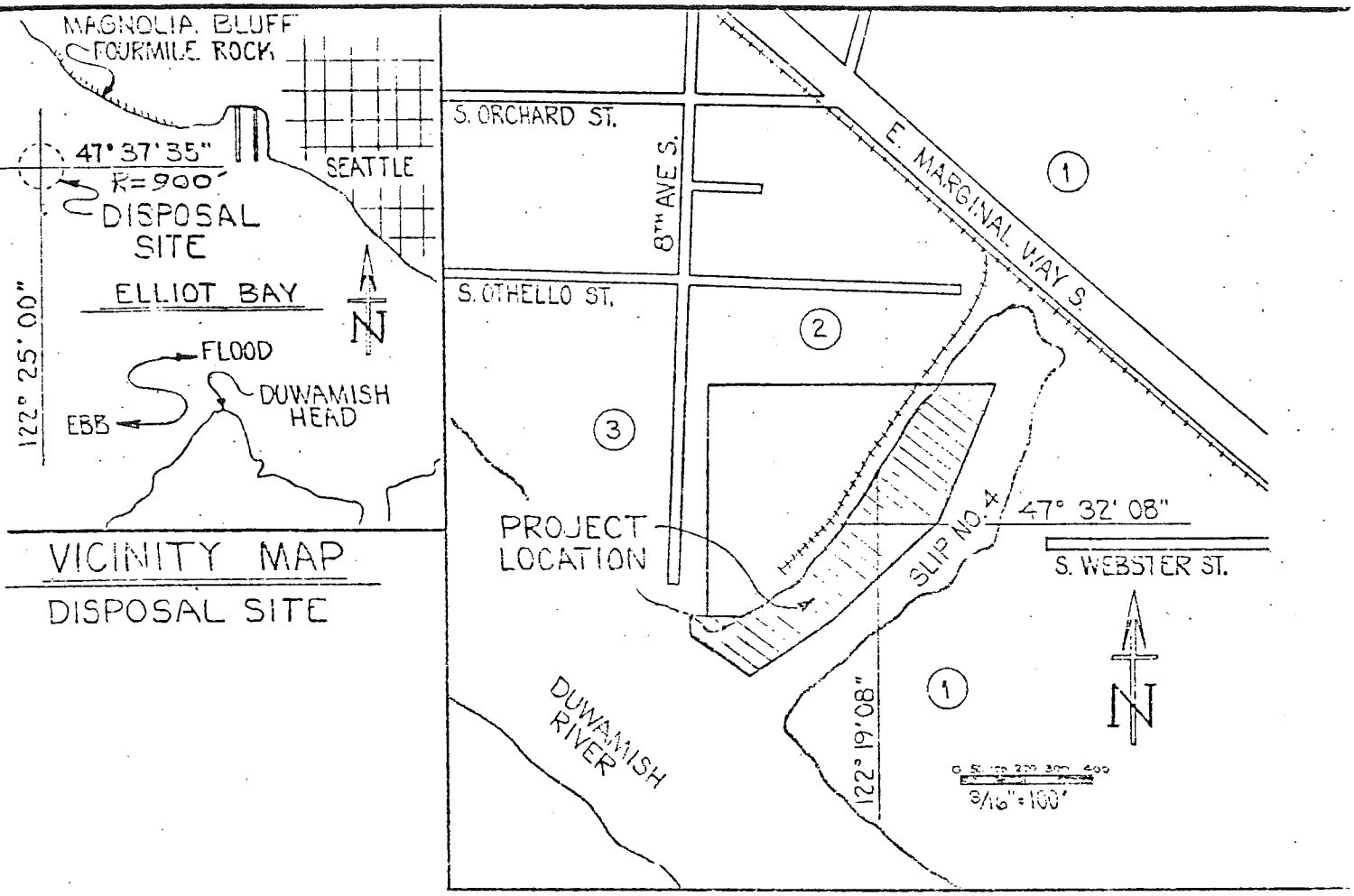


Figure 5. Slip 4 Drainage Basin
Adapted from: City of Seattle 2006

APPENDIX C

HISTORICAL DREDGING AND SEDIMENT SAMPLING INFORMATION

HISTORICAL DREDGING DOCUMENTS



VICINITY MAP
DISPOSAL SITE

VICINITY MAP
PROJECT LOCATION

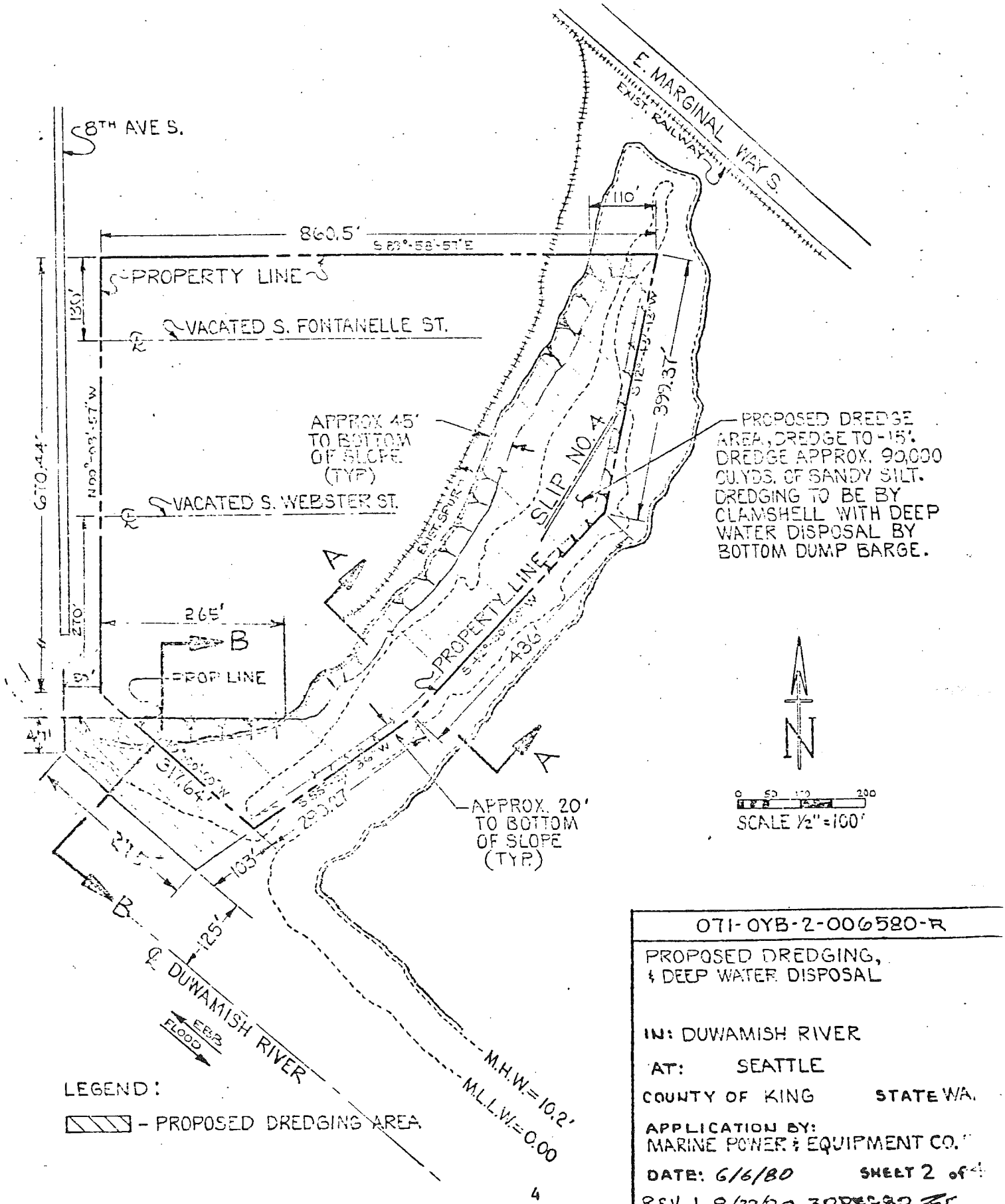
NO FEDERAL PIERHEAD LINES ESTABLISHED
PURPOSE: TO ESTABLISH A SAFE DEPTH FOR COMMERCIAL MARINE TRAFFIC.
DATUM: M.L.L.W. = 0.00 N.O.S.
ADJACENT PROPERTY OWNERS:

1. BOEING AIRCRAFT CO., 7755 E. MARGINAL WAY S. SEATTLE, WA. 98108
2. LAYRITE CONCRETE PRODUCTS CO., 7265 E. MARGINAL WAY S. SEATTLE, WA. 98108
3. PUGET SOUND TRUCK LINES, 3720 AIRPORT WAY S. SEATTLE, WA. 98108

OTI-OYB-2-006580-R

PROPOSED DREDGING & DEEP WATER DISPOSAL

IN DUWAMISH RIVER
AT SEATTLE
COUNTY OF KING STATE WA.
APPLICATION BY
MARINE POWER & EQUIP CO., INC.
SHEET 1 OF 4 DATE 6/16/80
REV 8/29/80, REV 10 DEC. 80



071-0YB-2-006580-R

PROPOSED DREDGING, & DEEP WATER DISPOSAL

IN: DUWAMISH RIVER

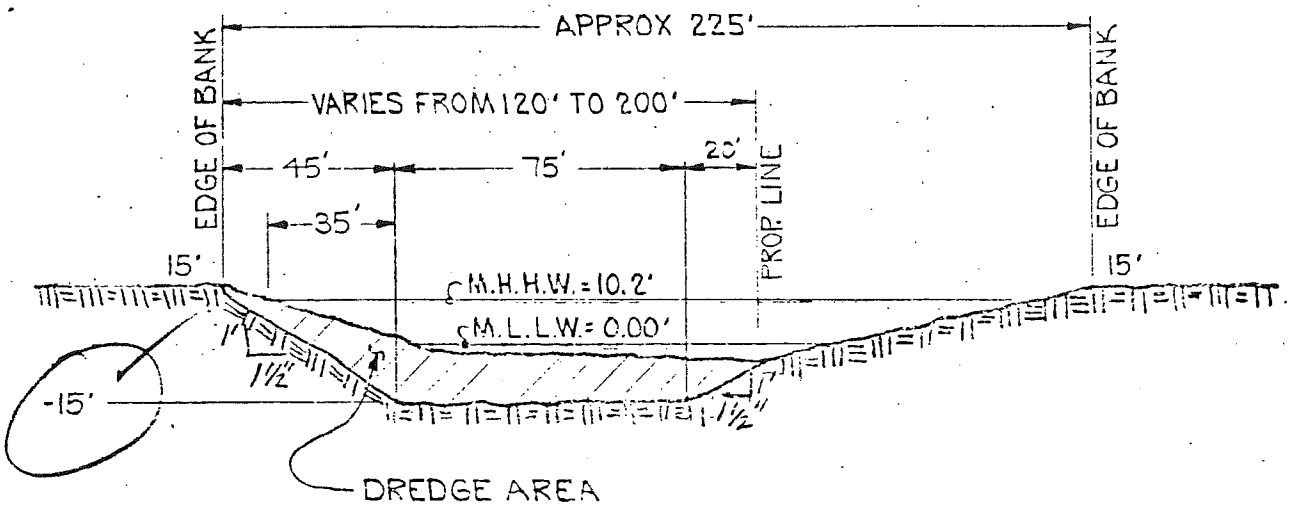
AT: SEATTLE

COUNTY OF KING STATE WA.

APPLICATION BY:
MARINE POWER & EQUIPMENT CO.

DATE: 6/6/80 SHEET 2 of 4

REV 1. 8/28/80, 30 DEC 80



SECTION A-A

0 10 25 50 100

SCALE: 1" = 50'-0"

071-0YB-2-006580-R

PROPOSED DREDGING & DEEP WATER DISPOSAL

IN: DUWAMISH RIVER

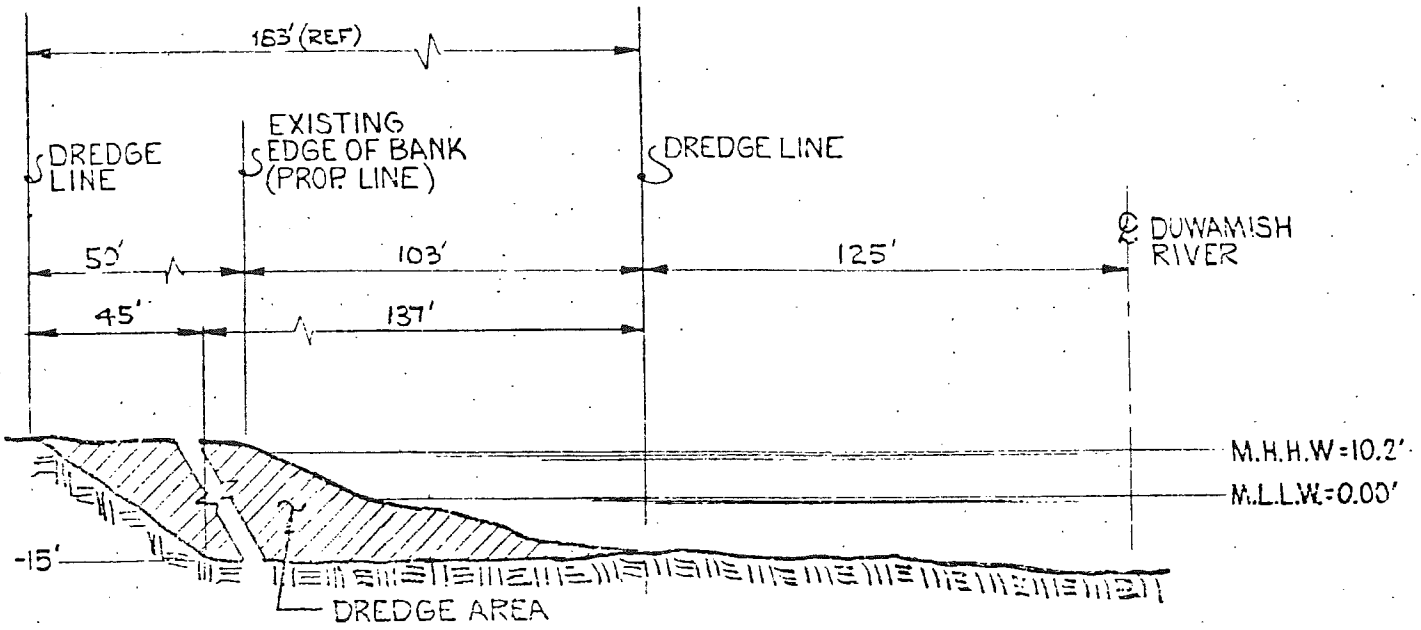
AT: SEATTLE

COUNTY OF KING STATE WA.

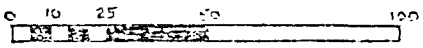
APPLICATION BY:
MARINE POWER & EQUIP. CO. INC.

DATE: 5/6/80 SHEET 3 of 4

REV 1 8/28/80, 200 TO 50 FT



SECTION B-B



SCALE: 1"=50'-0"

071-0YB-2-006580-R

PROPOSED DREDGING
& DEEP WATER DISPOSAL

IN DUWAMISH RIVER
AT SEATTLE
COUNTY OF KING STATE WA

APPLICATION BY
MARINE POWER & EQUIP CO. INC.
SHEET 4 OF 4 DATE 6/6/80
REV 1 8/25/80, TO DEQ

DEPARTMENT OF THE ARMY
SEATTLE DISTRICT, CORPS OF ENGINEERS
P.O. BOX C-3755
SEATTLE, WASHINGTON 98124

NPSOP-RF

27 JAN 1981

Marine Power & Equipment Co., Inc.
[illegible]

Reference: [illegible]

Inclosed is a Department of the Army permit which authorizes performance of the work described in your referenced application.

You are cautioned that any change in the location or plans of the work will require submittal of a revised plan to this office for approval prior to accomplishment.

Your attention is drawn to conditions "o" and "n" of the permit which specify the expiration dates for both commencement and completion of the work and that you notify this office of the dates the work is started and completed.

Sincerely yours,

Gerald A Keller

GERALD A. KELLER
Chief, Regulatory Functions Branch

1 Incl
As stated
CF:
Compliance File

Application No. ~~071-OYB-2-006~~

Name of Applicant ~~Marine Power & Equipment Company~~

Effective Date 27 JAN 1981

Expiration Date (If applicable) ~~See General Condition o~~

DEPARTMENT OF THE ARMY
PERMIT

Referring to written request dated ~~1 May 1980~~ for a permit to:

(X) Perform work in or affecting navigable waters of the United States, upon the recommendation of the Chief of Engineers, pursuant to Section 10 of the Rivers and Harbors Act of March 3, 1899 (33 U.S.C. 403);

(X) Discharge dredged or fill material into waters of the United States upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 404 of the Federal Water Pollution Control Act (86 Stat. 816, P.L. 92-500);

( ) Transport dredged material for the purpose of dumping it into ocean waters upon the issuance of a permit from the Secretary of the Army acting through the Chief of Engineers pursuant to Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972 (86 Stat. 1052; P.L. 92-532);

Marine Power & Equipment Company
1441 N. Northlake Way
Seattle, Washington

is hereby authorized by the Secretary of the Army:
to
dredge approximately 85,000 cubic yards of sandy silt by clamshell; dredge material to be deposited at deep water site in Elliott Bay (Provide adequate water depth for safe vessel movement)

in Duwamish River

at Seattle, Washington

in accordance with the plans and drawings attached hereto which are incorporated in and made a part of this permit (on drawings: give file number or other definite identification marks.)

071-OYB-2-006580, 4 sheets

subject to the following conditions:

I. General Conditions:

a. That all activities identified and authorized herein shall be consistent with the terms and conditions of this permit; and that any activities not specifically identified and authorized herein shall constitute a violation of the terms and conditions of this permit which may result in the modification, suspension or revocation of this permit, in whole or in part, as set forth more specifically in General Conditions j or k hereto, and in the institution of such legal proceedings as the United States Government may consider appropriate, whether or not this permit has been previously modified, suspended or revoked in whole or in part.

ENG 1 2

b. That all activities authorized herein shall, if they involve, during their construction or operation, any discharge of pollutants into waters of the United States or ocean waters, be at all times consistent with applicable water quality standards, effluent limitations and standards of performance, prohibitions, pretreatment standards and management practices established pursuant to the Federal Water Pollution Control Act of 1972 (P.L. 92-500; 86 Stat. 816), the Marine Protection, Research and Sanctuaries Act of 1972 (P.L. 92-532, 86 Stat. 1052), or pursuant to applicable State and local law.

c. That when the activity authorized herein involves a discharge during its construction or operation, of any pollutant (including dredged or fill material), into waters of the United States, the authorized activity shall, if applicable water quality standards are revised or modified during the term of this permit, be modified, if necessary, to conform with such revised or modified water quality standards within 6 months of the effective date of any revision or modification of water quality standards, or as directed by an implementat on plan contained in such revised or modified standards, or within such longer period of time as the District Engineer, in consultation with the Regional Administrator of the Environmental Protection Agency, may determine to be reasonable under the circumstances.

d. That the discharge will not destroy a threatened or endangered species as identified under the Endangered Species Act, or endanger the critical habitat of such species.

e. That the permittee agrees to make every reasonable effort to prosecute the construction or operation of the work authorized herein in a manner so as to minimize any adverse impact on fish, wildlife, and natural environmental values.

f. That the permittee agrees that he will prosecute the construction or work authorized herein in a manner so as to minimize any degradation of water quality.

g. That the permittee shall permit the District Engineer or his authorized representative(s) or designee(s) to make periodic inspections at any time deemed necessary in order to assure that the activity being performed under authority of this permit is in accordance with the terms and conditions prescribed herein.

h. That the permittee shall maintain the structure or work authorized herein in good condition and in accordance with the plans and drawings attached hereto.

i. That this permit does not convey any property rights, either in real estate or material, or any exclusive privileges; and that it does not authorize any injury to property or invasion of rights or any infringement of Federal, State, or local laws or regulations nor does it obviate the requirement to obtain State or local assent required by law for the activity authorized herein.

j. That this permit may be summarily suspended, in whole or in part, upon a finding by the District Engineer that immediate suspension of the activity authorized herein would be in the general public interest. Such suspension shall be effective upon receipt by the permittee of a written notice thereof which shall indicate (1) the extent of the suspension, (2) the reasons for this action, and (3) any corrective or preventative measures to be taken by the permittee which are deemed necessary by the District Engineer to abate imminent hazards to the general public interest. The permittee shall take immediate action to comply with the provisions of this notice. Within ten days following receipt of this notice of suspension, the permittee may request a hearing in order to present information relevant to a decision as to whether his permit should be reinstated, modified or revoked. If a hearing is requested, it shall be conducted pursuant to procedures prescribed by the Chief of Engineers. After completion of the hearing, or within a reasonable time after issuance of the suspension notice to the permittee if no hearing is requested, the permit will either be reinstated, modified or revoked.

k. That this permit may be either modified, suspended or revoked in whole or in part if the Secretary of the Army or his authorized representative determines that there has been a violation of any of the terms or conditions of this permit or that such action would otherwise be in the public interest. Any such modification, suspension, or revocation shall become effective 30 days after receipt by the permittee of written notice of such action which shall specify the facts or conduct warranting same unless (1) within the 30-day period the permittee is able to satisfactorily demonstrate that (a) the alleged violation of the terms and the conditions of this permit did not, in fact, occur or (b) the alleged violation was accidental, and the permittee has been operating in compliance with the terms and conditions of the permit and is able to provide satisfactory assurances that future operations shall be in full compliance with the terms and conditions of this permit; or (2) within the aforesaid 30-day period, the permittee requests that a public hearing be held to present oral and written evidence concerning the proposed modification, suspension or revocation. The conduct of this hearing and the procedures for making a final decision either to modify, suspend or revoke this permit in whole or in part shall be pursuant to procedures prescribed by the Chief of Engineers.

l. That in issuing this permit, the Government has relied on the information and data which the permittee has provided in connection with his permit application. If, subsequent to the issuance of this permit, such information and data prove to be false, incomplete or inaccurate, this permit may be modified, suspended or revoked, in whole or in part, and/or the Government may, in addition, institute appropriate legal proceedings.

m. That any modification, suspension, or revocation of this permit shall not be the basis for any claim for damages against the United States.

n. That the permittee shall notify the District Engineer at what time the activity authorized herein will be commenced, as far in advance of the time of commencement as the District Engineer may specify, and of any suspension of work, if for a period of more than one week, resumption of work and its completion.

ENVIRONMENTAL ASSESSMENT
For Work Authorized in Accordance with Section
10 of the River and Harbor Act of March 3, 1899
and Section 404 of the Clean Water Act
Described in Permit Application No. 071-OYB-2-006580
of Marine Power and Equipment Company

1. The work was coordinated with appropriate state and Federal agencies in accordance with procedures specified in 33 CFR, Parts 320-329.

2. The work is to dredge approximately 85,000 cubic yards of sandy silt by clamshell in the Duwamish River at Seattle, Washington. (Deposit dredged material at deep water site in Elliott Bay.)

3. This application has been reviewed in light of comments received from the public and agency coordination. Evaluation by this office considered relevant factors including esthetics, fish and wildlife values, flood damage prevention, land and shoreline management classifications, conservation, navigation, recreation, water supply, water quality, archeological and historic values, economics, ecological and general environmental considerations, endangered species or their critical habitat, energy needs, safety, food production, and general public welfare. This review has not identified any potentially significant adverse effects for action under the terms of the permit application.

4. The work has been considered with respect to Indian Treaty fishing rights, per the decision reached in United States v. Washington, (384 F. Supp. 312, affirmed 520 F. 2d 676, cert. denied 423 U.S. 1086), as modified in Supreme Court's decision of 2 July 1979. I have determined that the work will not significantly interfere with the Indian fishery, including Indian access to usual and accustomed fishing grounds and opportunity to fish in these areas. I have further determined that the work will not significantly interfere with salmonids, their habitat or promote adverse impacts on fishing success in these areas.

5. I have determined that performance of this work, in accordance with the conditions of the permit, will not significantly affect the quality of the human environment. Further, I have determined that the issuance of this particular permit is a Federal action not having a significant impact on the environment and thus have concluded that the preparation of a formal EIS is not required.

21 Jan 81
Date

LEON K. MORASKI
Colonel, Corps of Engineers
District Engineer

FINDINGS OF FACT

Reference: Marine Power and Equipment Company - 071-OYB-2-006580

Concerning issuance of Department of the Army Permit under Section 10 of the River and Harbor Act of March 3, 1899 (30 Stat. 1151; 33 U.S.C. 403) and Section 404 of the Clean Water Act to dredge approximately 85,000 cubic yards of sandy silt by clamshell in the Duwamish River at Seattle, Washington. (Deposit dredged material at deep water site in Elliott Bay.)

1. I have reviewed and evaluated, in light of the overall public interest, the documents and factors concerning this permit application, as well as the stated views of other interested Federal and non-Federal agencies and the concerned public, relative to the work in navigable waters of the United States.

2. All factors relevant to this work were considered in accordance with our regulations. These factors include, but are not limited to, conservation, economics, esthetics, general environmental concerns, historic values, fish and wildlife values, flood damage prevention, land use, navigation, recreation, water supply, water quality, energy needs, safety, food production and, in general, the needs and welfare of the people.

3. The following points are considered pertinent in evaluation of comments received in coordinating the public notice dated 23 June 1980 and drawing revision notice dated 23 September 1980. The revision consisted of modifying the boundary configuration of the proposed dredged area to satisfy a concern expressed by the City of Seattle. On 29 October 1980 the applicant further revised the proposed dredged area boundary configuration to insure dredging operations noninterference with an existing submarine telephone cable.

a. Federal Agencies. The National Oceanic and Atmospheric Administration, the Environmental Protection Agency (EPA) and the Department of the Interior have no objection to the work. EPA, in 10 November 1980 letter, conditioned its nonopposing position advising that the material to be dredged has high concentrations of sulfides. The conditions are:

> (1) Loads of dredged material to be dumped at Four Mile Rock Disposal Site will be limited to a volume of 1,000 cubic yards.
>
> (2) In the event of adverse impacts on fisheries resources, due to the nature of the material being dredged, dredging operations will cease and modifications in the dredging procedures to alleviate the problem will be coordinated with EPA.

The applicant, in 3 November 1980 letter to EPA, advised that the conditions outlined in the 10 November 1980 letter will be complied with. The EPA 3 November 1980 letter will be mailed to the permittee as a condition letter.

b. State and Local Agencies. The State of Washington and the City of Seattle, the local governing body, have no objections to the work. The State of Washington, in 22 December 1980 letter, conditioned its nonopposing position with the following requirements:

(1) A water quality modification be obtained from the Department of Ecology prior to commencement of work.

(2) Time Limitation: Construction may be started immediately, and shall be completed by December 31, 1981. A time extension will be considered upon reapplication. However, no dredging shall be accomplished from April 1 to June 15 of any year.

(3) A floating clamshell may be used for dredging. Each pass of the clamshell bucket shall be complete, and there is to be no stockpiling in the water.

(4) Dredging operations shall be conducted at all times in such a manner as to cause little or no disturbance or siltation to the adjacent waters.

(5) Dredged materials shall be deposited at an approved, designated Department of Natural Resources deep water disposal site.

(6) The dredged banks shall be sloped no steeper than 1.5 feet horizontal to each 1.0 foot vertical.

(7) If, at any time, there should be fish in distress, a fish kill, or water quality problems as a result of this project, the dredging operation shall be stopped immediately. The summer and fall may be critical times of low dissolved oxygen.

(8) The following is the limitation of dissolved oxygen:

Allowable dredging - 5.1mg/1 D.O. or over
Cease dredging - 5.0mg/1 D.O. or under

(9) The applicant will be informed if dissolved oxygen does below 5mg/1.

(10) No petroleum products or other deleterious materials shall be allowed to enter state waters as a result of this project.

(11) Any debris resulting from this project shall be removed from the water and disposed of or placed in such a manner to prevent its being washed back into the water by high water or wave action.

(12) Water quality is not to be degraded to the detriment of fish life as a result of this project. Compliance with the quality limits set forth in the Washington State Water Quality Regulations shall be maintained throughout the life of the project.

(13) These provisions shall be closely followed by the contract(s) and the equipment operator(s) and shall be on the job site at all times.

The State of Washington 22 December 1980 letter will be mailed to the permittee with the permit as a condition letter.

Comments of the state and local governmental agencies are predicated upon the applicant's compliance with the State Shoreline Management Act and applicable local laws, regulations and codes governing this work.

c. Treaty Indians. The Muckleshoot Indian Tribe, in 8 July 1980 letter, recommended that dredging be conducted between 15 June and 15 March of the calendar year and advised that tribal members will be fishing for salmonids at the worksite between July and January of the calendar year. The applicant, in 5 December 1980 letter to the Muckleshoot Indian Tribe, advised that the dredging is planned to be performed between 15 June and 15 March of the calendar year with the estimated performance period being during the month of January 1981. The applicant further advised the Muckleshoot Indian Tribe that the necessary precautions will be taken to insure noninterference with the Tribe's commercial fishing activities. The work has been considered with respect to the decision reached in United States v. Washington, (384 F. Supp. 312, affirmed 520 F. 2d 676, cert. denied 423 U.S. 1086), as modified in Supreme Court's decision of 2 July 1979, and it was found that the project will not adversely affect any treaty rights.

d. Individual or Organized Groups. No individual or organized groups have opposed the work. This work is considered to be in the general public interest.

e. Other Considerations: The work will have no significant adverse effect on items recorded in paragraph 2 above. Particular attention was given to the location and general design to prevent possible obstructions to navigation with respect to both the public use and the neighboring proprietors' access to the Duwamish River.

The work will provide an adequate water depth for safe vessel movement.

f. The work was evaluated in accordance with the objectives of the Environmental Protection Agency's Section 404(b) guidelines, contained in the Clean Water Act (40 CFR 230). The technical evaluation considered the following parameters: physical and chemical-biological interactive effects, water quality impacts, selection of disposal sites, and conditioning of discharges

of dredged or fill material. As a result of this evaluation, I have concluded that the discharge will not have significant adverse impacts on the aquatic environment.

4. I find that issuance of this Department of the Army Permit is predicated upon a thorough analysis of the various factors identified herein. The work is deemed to comply with state and local laws, regulations and codes. There are no identified major adverse environmental effects. The work is consonant with National policy, statutes, and administrative directives. The total public interest would best be served by the issuance of a Department of the Army permit.

21 JAN 81
Date

LEON K. MORASKI
Colonel, Corps of Engineers
District Engineer

Marine Power & Equipment
Diesel . . Marine . . Electric

1441 North Northlake Way
Seattle, Washington 98103

MElrose 2-1441

December 11, 1980

U.S. Army
Corps of Engineers
Seattle District
P.O. Box C-3755
Seattle, Washington 98124

Attn: Regulatory Functions Branch
Joe Thomer

Re: Permit Application 071-OYB-2-006580

Dear Sir:

The original revision of the subject permit application was in response to concern expressed by Elsie Hulsizer of the City of Seattle, Department of Construction and Land Use. The original plan left a small tip of land sticking out into Slip 4 and she was concerned about erosion of that area.

I agreed to expand the dredging area to cut off that particular tip of land.

After the revision was made I realized that the newly added dredge area was in close proximity to an under water telephone cable which crosses the Duwamish River. To preclude any interference with the subject cable I elected to further revise the dredge area and provided you with the required drawings.

If you have any further questions, please call.

Very truly yours,

MARINE POWER & EQUIPMENT CO., INC.

Bruce H. Klein

RHK:sw

Seattle
Engineering Department
Arthur E. Maronek
Acting Director of Engineering
Charles Royer, Mayor

RE: 071-OYB-2-006580-R
MARINE POWER & EQUIPMENT CO.
23 SEPTEMBER 1980

NOVEMBER 20, 1980

Department of the Army
Seattle District
Corps of Engineers
P. O. Box C-3755
Seattle, Washington 98124

Gentlemen:

The City of Seattle has reviewed the subject Public Notice. Based upon comments which have been received from various City departments, we offer the following statement(s):

1. We have no objection to the proposal as described in the subject Public Notice.

2. The proposal is exempt from the permit requirements of the Shoreline Management Act under the Seattle Shoreline Master Program.

3. The proposal is consistent with the Seattle Shoreline Master Program and Substantial Development Permit No. SMA 80-45 was approved on NOVEMBER 4, 1980.

4. Applicant has applied for a Shorelines Substantial Development Permit. We reserve comments on the proposal until our review of the Shorelines Permit has been completed.

5. Applicant is hereby advised that a Shorelines Substantial Development Permit is required under the Shoreline Management Act of 1971. Application forms are available from the Seattle Department of Construction and Land Use, 503 Municipal Building, Seattle, Washington, 98104. We request that the Department of the Army permit for this proposal be withheld until a Substantial Development Permit is obtained.

6. Other:

Very truly yours,

ARTHUR E. MARONEK
Acting Director of Engineering

By
R. J. ANDERSON, P. E., Manager
Court & Right of Way Division

MC:ft

cc: Dept. of Construction
and Land Use
State Dept. of Ecology

316A

U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION X
1200 SIXTH AVENUE
SEATTLE, WASHINGTON 98101

REPLY TO ATTN OF: MS 521

NOV 10 1980

District Engineer
Seattle District, C/E
ATTN: Chief, Reg. Func. Branch
P. O. Box C-3755
Seattle, Washington 98124

RE: 071-OYB-2-006580-R, Marine Power and Equipment Company, Inc., 6/23/80

Dear Sir:

We have completed our review of the above referenced permit application.

Chemical analyses indicate that the material to be dredged has relatively high concentrations of sulfides. However, our agency will have no objection to the issuance of this permit provided the proposed operations are subject to the following conditions:

1) Loads of dredged material to be dumped at 4 Mile Rock disposal site will be limited to a volume of 1,000 cubic yards,

2) In the event of adverse impacts on fisheries resources, due to the nature of the material being dredged, dredging operations will cease and modifications in the dredging procedures to alleviate the problem will be coordinated with our office.

These conditions are needed to maintain water quality and to protect the aquatic resources.

These conditions have been discussed with and agreed to by the applicant. If there are any questions concerning our review of this application please contact James Wood, of my staff, at (206) 442-1352 or FTS 399-1352.

Sincerely,

Ronald A. Lee

Ronald A. Lee, Chief 15 08:21
Dredge and Fill Permits Section

cc: USFWS - Olympia
NMFS
WDNR - Attn. Rene Herrera
WDG - Attn. Bob Zeigler
WDE
Applicant

311 C

PLICATION FOR A DEPARTMENT OF THE ARMY PERMIT
For use of this form, see EP 1145–2–1

The Department of the Army permit program is authorized by Section 10 of the River and Harbor Act of 1899, Section 404 of P. L. 92–500 and Section 103 of P. L. 92–532. These laws require permits authorizing structures and work in or affecting navigable waters of the United States, the discharge of dredged or fill material into waters of the United States, and the transportation of dredged material for the purpose of dumping it into ocean waters. Information provided in ENG Form 4345 will be used in evaluating the application for a permit. Information in the application is made a matter of public record through issuance of a public notice. Disclosure of the information requested is voluntary; however, the data requested are necessary in order to communicate with the applicant and to evaluate the permit application. If necessary information is not provided, the permit application cannot be processed nor can a permit be issued.

One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and checklist) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.

1. Application number (To be assigned by Corps)	2. Date	3. For Corps use only.
071-043-2-006580	1 MAY 1980 (Day / Mo. / Yr.)	

4. Name and address of applicant.
Marine Power & Equipment Co., Inc.
1441 N. Northlake Way
Seattle, Washington 98103

Telephone no. during business hours
A/C (206) 632-1441
A/C (206) 632-1447

5. Name, address and title of authorized agent.
Bruce H. Klein
Personnel Director
1441 N. Northlake Way
Seattle, Washington 98103

Telephone no. during business hours
A/C (206) 632-1441
A/C (206) 632-1447

6. Describe in detail the proposed activity, its purpose and intended use (private, public, commercial or other) including description of the type of structures, if any to be erected on fills, or pile or float–supported platforms, the type, composition and quantity of materials to be discharged or dumped and means of conveyance, and the source of discharge or fill material. If additional space is needed, use Block 14.

Dredge 85,000 cu. yards of sandy silt by clamshell and deposit at "Four Mile Rock" deep water disposal site by bottom dump barge. The purpose is to provide a safe depth for commercial marine use in Slip 4.

7. Names, addresses and telephone numbers of adjoining property owners, lessees, etc., whose property also adjoins the waterway.

1. Boeing Co. 7755 E. Marginal Way South Seattle, Washington 98108 (773-7790)
2. Layrite Concrete Products Co. 7265 E. Marginal Way S. Seattle, Wa 98108 (762-8681)
3. Puget Sound Truck Lines 3720 Airport Way South Seattle, Wa 98134 (623-1600)

8. Location where proposed activity exists or will occur.

Address:
8th Ave. South and South Fontanelle St.
Street, road or other descriptive location

Seattle
In or near city or town

King Wash. 98108
County State Zip Code

Tax Assessors Description: (If known)
Map No. Subdiv. No. Lot No.
Sec. Twp. Rge.

9. Name of waterway at location of the activity.

Duwamish River

Date activity is proposed to commence. As soon as permit is issued

Date activity is expected to be completed Within 5 weeks after start of project

Is any portion of the activity for which authorization is sought now complete? ☐ YES ☒ NO
If answer is "Yes" give reasons in the remark section. Month and year the activity was completed _____. Indicate the existing work on the drawings.

List all approvals or certifications required by other federal, interstate, state or local agencies for any structures, construction, discharges, deposits or other activities described in this application.

Issuing Agency	Type Approval	Identification No.	Date of Application	Date of Approval
City of Seattle	Shoreline Permit			

Has any agency denied approval for the activity described herein or for any activity directly related to the activity described herein?

☐ Yes ☒ No (If "Yes" explain in remarks)

Remarks or additional information.

Application is hereby made for a permit or permits to authorize the activities described herein. I certify that I am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete, and accurate. I further certify that I possess the authority to undertake the proposed activities.

Bruce H. Klein

Signature of Applicant or Authorized Agent

Bruce H. Klein

The application must be signed by the applicant; however, it may be signed by a duly authorized agent (named in Item 5) if this form is accompanied by a statement by the applicant designating the agent and agreeing to furnish upon request, supplemental information in support of the application.

18 U. S. C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of The United States knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false fictitious or fraudulent statement or entry, shall be fined not more than $10,000 or imprisioned not more than five years, or both. Do not send a permit processing fee with this application. The appropriate fee will be assessed when a permit is issued.

(77)

INSPECTION RECORD

FOR

PERMITTED WORK IN NAVIGABLE WATERS
NORTH PACIFIC DIVISION, CORPS OF ENGINEERS

District Seattle

1230 PM

Permit No. 071-OYB-2-006590

Date of Inspection 10 April 90

Permittee Marine Power & Equipment Co. Inc.

Inspector LARSON, FENSKE

Waterway Duwamish River

Type of Work Dredge

STATUS

Work Completed X Yes ____ No ____ Not Sure

Estimated Percent Complete 100 % ____ Unknown

Work In Progress ____ Yes X No

COMPLIANCE

Completed Entire Scope of Permitted Work X Yes ____ Apparently ____ No

Standard Conditions: X Yes ____ Apparently ____ No ____ Doubtful

Special Conditions: X Yes ____ Apparently ____ No ____ Doubtful

Permit Dwg: X Yes ____ Apparently ____ No

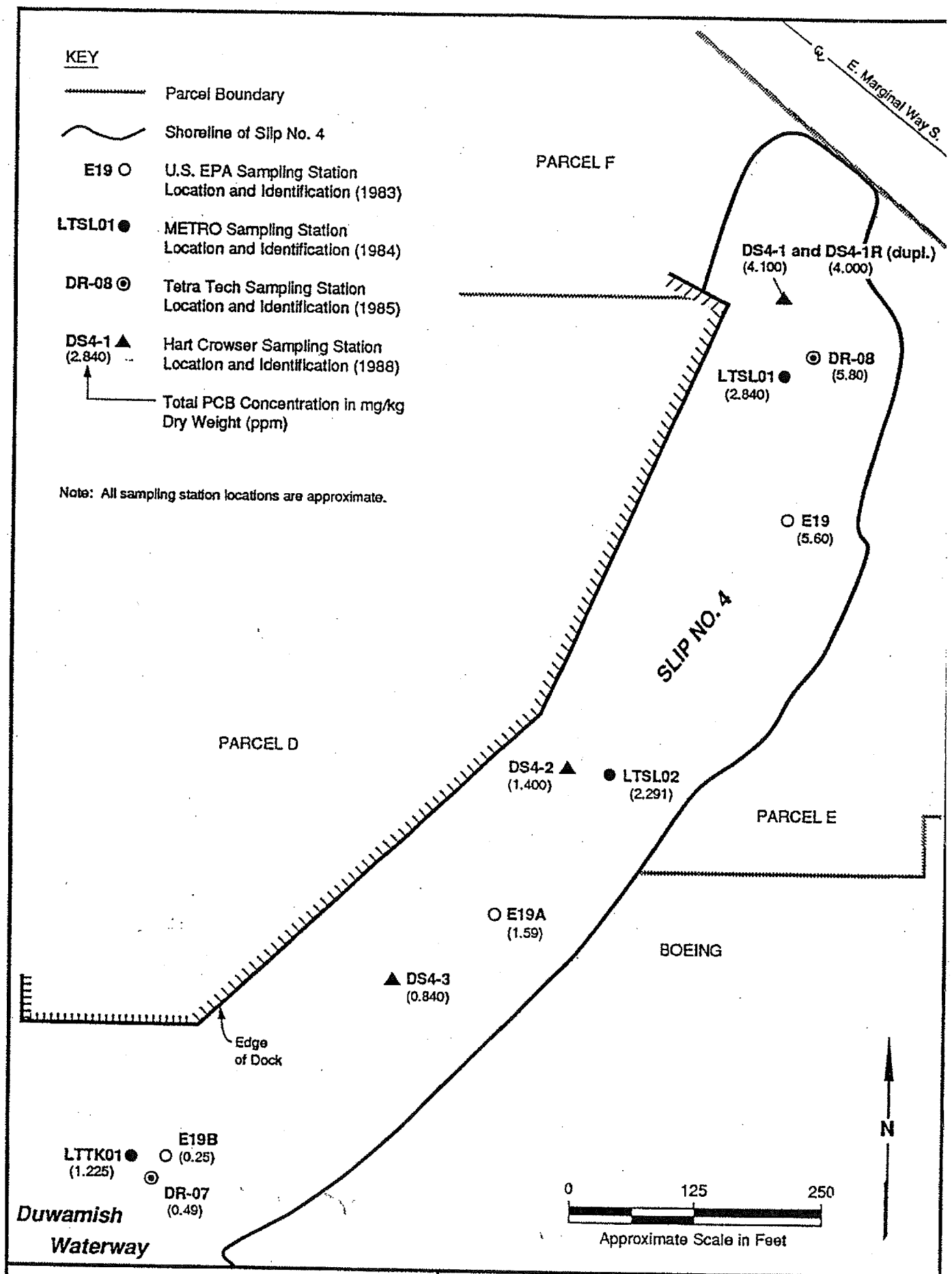
Comments: WATER DEPTH WSL 26 ± LW GAGE READING +5.8
= -15.2 ← ELEV OF BOTTOM

ERD Form 288(Rev)
May 77

610
607*

TAB "A" Page 1 of 1

SEDIMENT SAMPLING MAPS

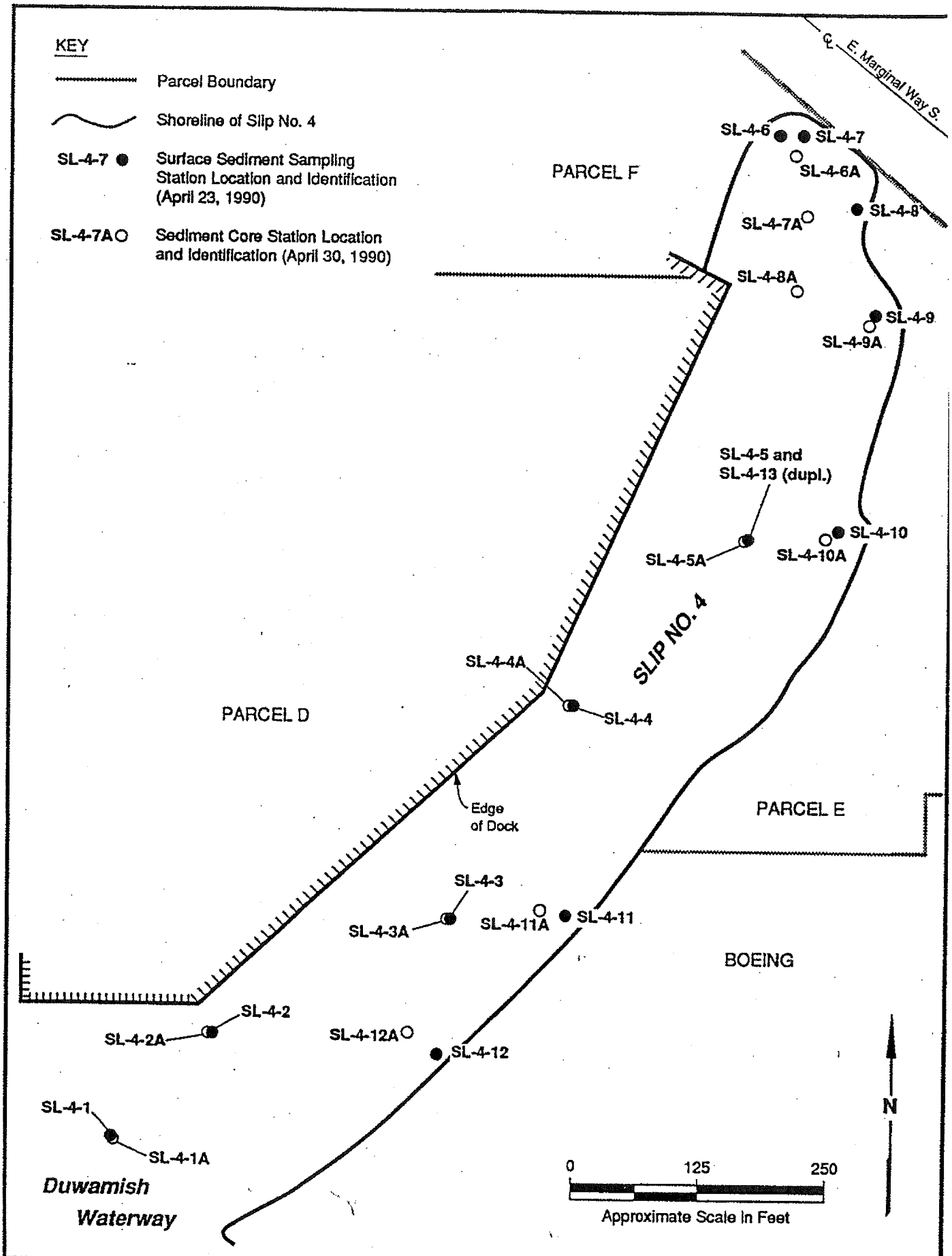


LANDAU ASSOCIATES, INC.

Concentrations of Total PCBs in Surface Sediments at Historical Stations in Slip No. 4

25-52.10 Boeing/First Interstate/Environmental Site Assessment/Final Report 6/8/90

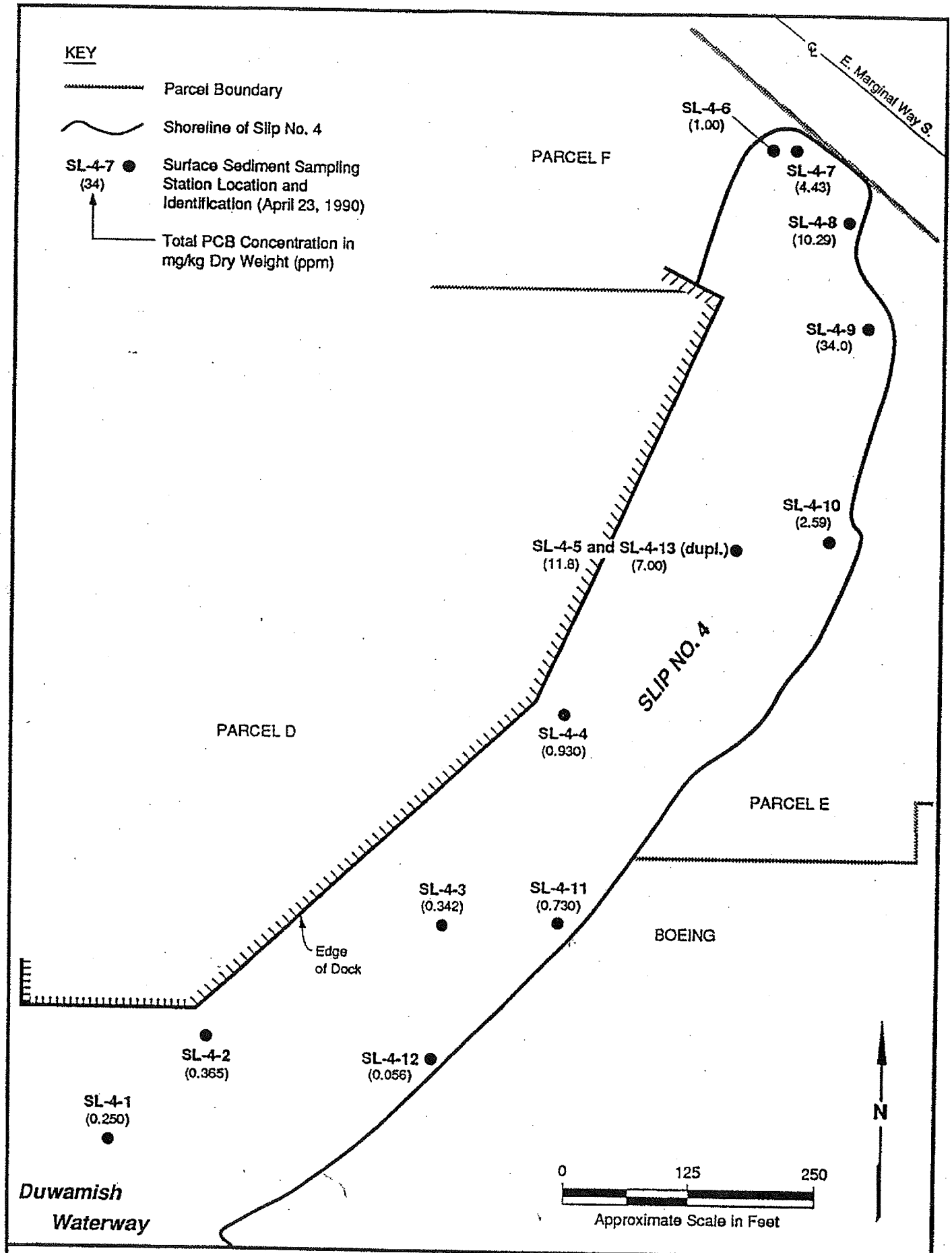
Figure 9-3



LANDAU ASSOCIATES, INC.

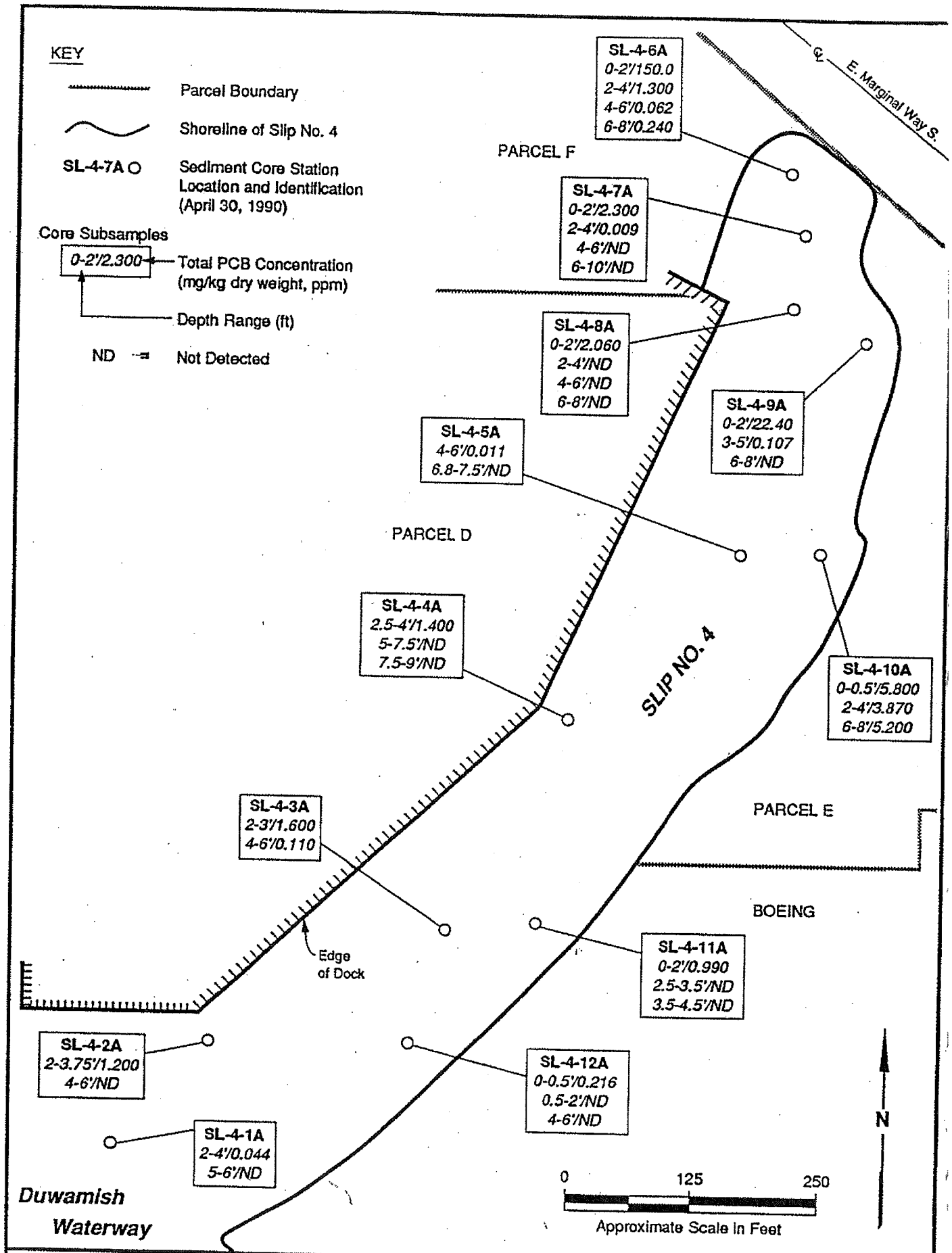
Map Showing Slip No. 4 Shoreline and Locations of Surface Sediment and Sediment Core Stations

Figure 9-1



LANDAU ASSOCIATES, INC.

Surface Sediment Stations and Concentrations of Total PCBs in Slip No. 4 Surface Sediments

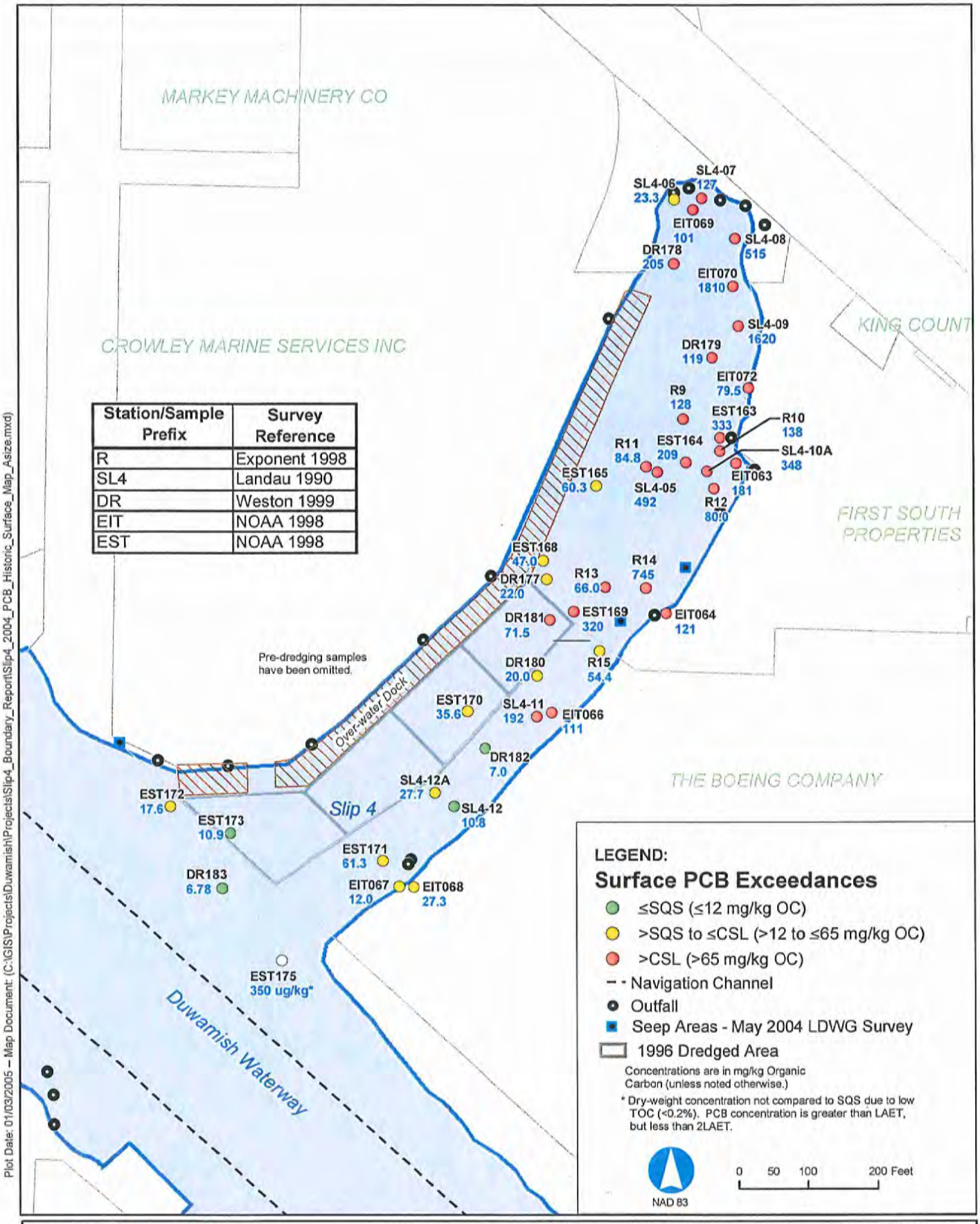


LANDAU ASSOCIATES, INC.

Sediment Core Stations and Concentrations of Total PCBs in Core Subsamples in Slip No. 4

25-62.10 Boeing/First Interstate/Environmental Site Assessment/Final Report 6/8/90

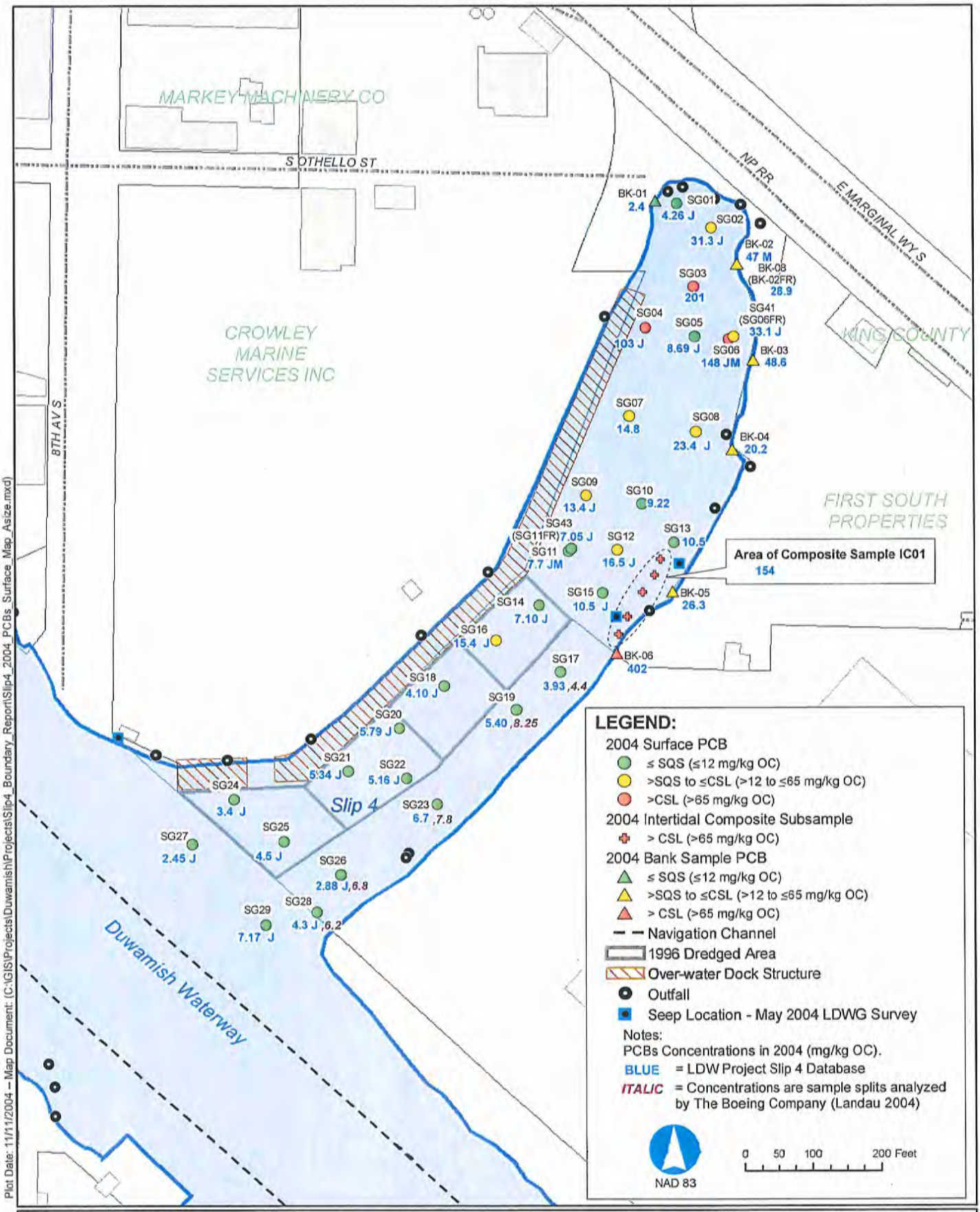
Figure 9-4



integral consulting inc.

Map Feature Sources:
King County GIS, Seattle Public Utilities, USACE, Ecology, Windward Environmental, David Evans, Inc., and others.
Sediment Chemistry:
Lower Duwamish Project Database and 2004 Slip 4 Survey PCB analysis results.

Figure 2.
PCB Concentrations in Surface Sediments Collected in 1990-1998.



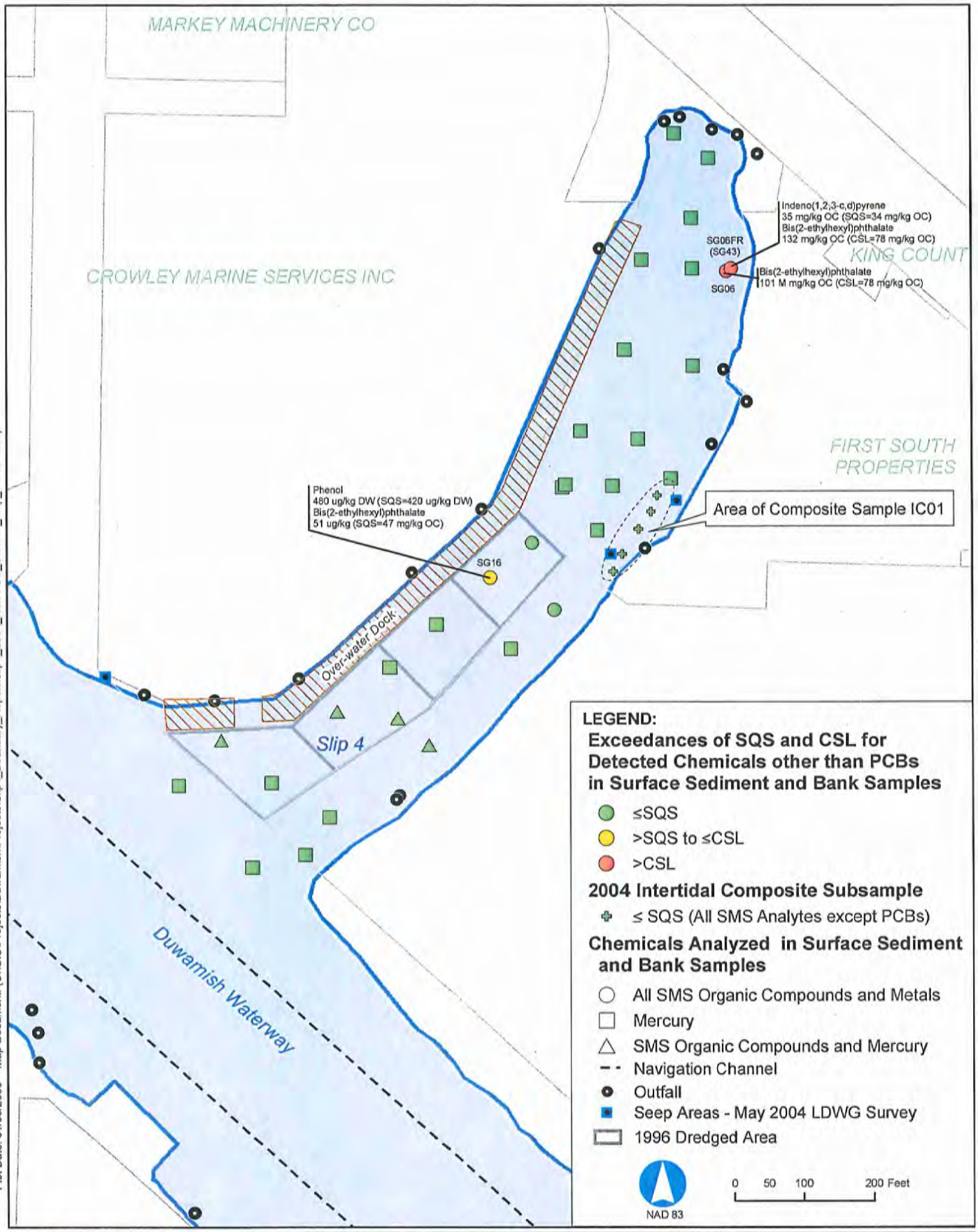
Plot Date: 11/11/2004 -- Map Document: (C:\GIS\Projects\Duwamish\Projects\Slip4_Boundary_Report\Slip4_2004_PCBs_Surface_Map_Asize.mxd)

integral consulting inc.

Map Feature Sources:
King County GIS, Seattle Public Utilities, USACE, Ecology, Windward Environmental, David Evans, Inc., and others.
Station locations: Lower Duwamish Project Database and 2004 Slip 4 FSP Navigation Table.

Qualifiers:
J=Estimated
M=Mean of field duplicate (i.e., split)
FR=Field replicate

Figure 3.
PCB Concentrations in Surface Sediment and Bank Samples Collected in 2004



Plot Date: 01/03/2005 -- Map Document: (C:\GIS\Projects\Duwamish\Projects\Slip4_Boundary_Report\Slip4_2004_Non-PCB_Surface_Map_Asize2.mxd)

integral consulting inc.

Map Feature Sources:
King County GIS, Seattle Public Utilities, USACE, Ecology, Windward Environmental, David Evans, Inc., and others.
Sediment Chemistry:
Lower Duwamish Project Database and 2004 Slip 4 Survey PCB analysis results.

M=Mean of Field Duplicate (i.e., split)
FR=Field Replicate

Figure 4.
Exceedances of SQS and CSL for Detected Chemicals other than PCBs in Surface Sediment and Bank Samples Collected in 2004

Historical Core Data (Landau 1990)

MARKEY MACHINERY CO

CROWLEY MARINE SERVICES INC

KING COUNTY

FIRST SOUTH PROPERTIES

THE BOEING COMPANY

Historical Core Data (Landau 1990)

Area of Composite Sample IC01.

Over-water Dock

Slip 4

Duwamish Waterway

Note:
Italicized concentrations at SC09 and SC11 are sample splits analyzed by The Boeing Company (Landau 2004).

Station/Sample Prefix	Survey Reference
SL4	Landau 1990
SC	Integral 2004a

Interval Scale Core Depth

0 cm -	- 0'
61 cm -	- 2'
122 cm -	- 4'
183 cm -	- 6'
244 cm -	- 8'
305 cm -	- 10'

LEGEND:

Core Samples
Label units = mg/kg OC

- ≤ SQS (≤12 mg/kg OC)
- >SQS to ≤CSL (>12 to ≤65 mg/kg OC)
- > CSL (>65 mg/kg OC)
- Sample Not Taken (Landau 1990) or Not Analyzed (2004 Data)
- * Dry Weight value compared to LAET due to TOC <0.2%.
- 2004 Archived Subsurface Sample
- 2004 Subsurface Sample with PCBs Results
- 2004 Surface Sample Location
- 2004 Intertidal Composite Subsample
- Historical Core Location
- Historical Surface Location
- Navigation Channel
- Outfalls
- Seep Location - May 2004 LDWG Survey
- 1996 Dredged Area

NAD 83

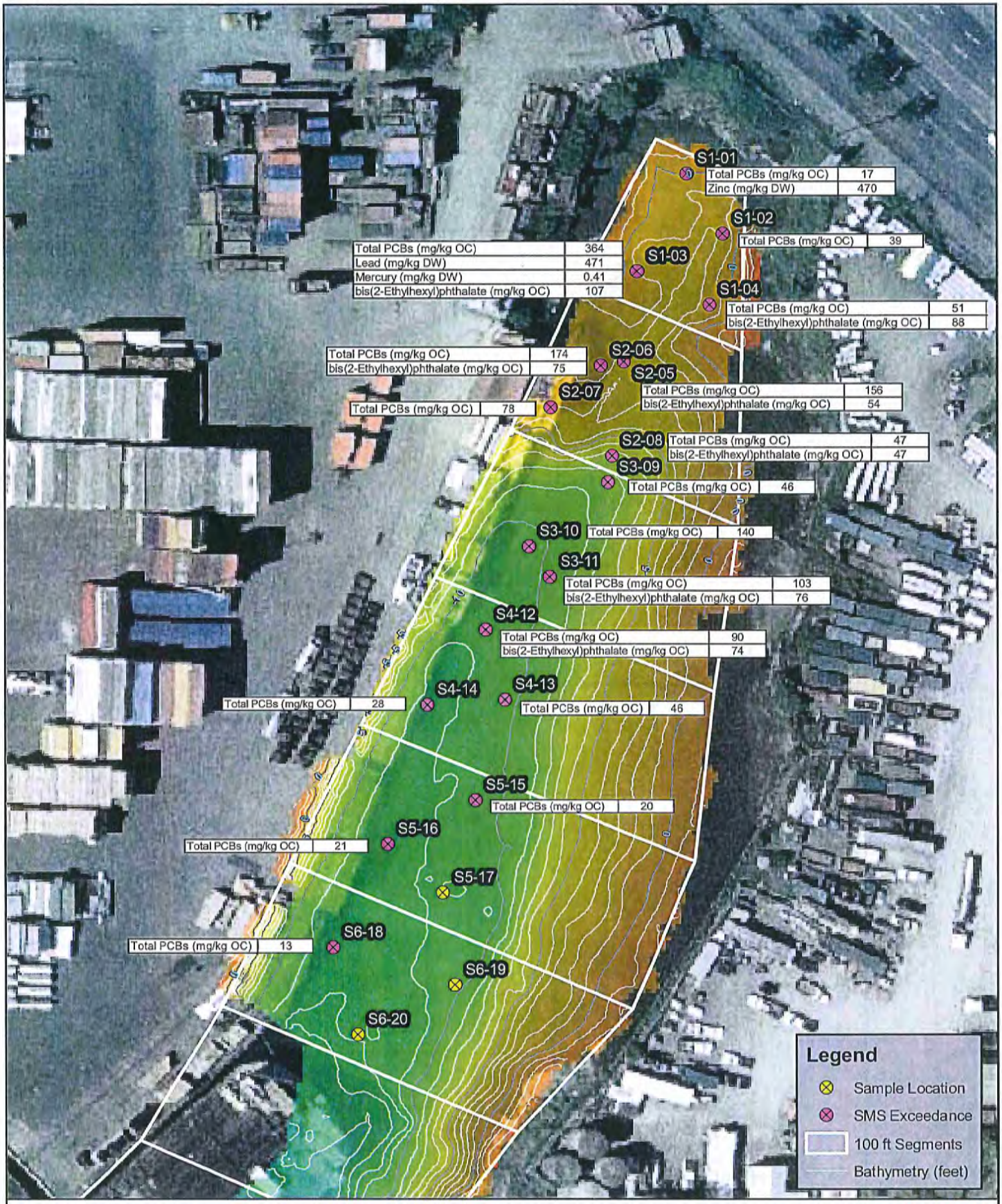
0 37.5 75 150 Feet

Map Feature Sources:
King County GIS, Seattle Public Utilities, USACE, Ecology, Windward Environmental, David Evans, Inc.. and others.
Sediment Chemistry:
Lower Duwamish Project Database and 2004 Slip 4 Survey PCB analysis results, The Boeing Company.

U=Undetected
J=Estimated
M=Mean of field duplicates (i.e., split)

Figure 5.
Historical and 2004 PCB Concentrations in Subsurface Sediments in Slip 4.

Plot Date: 12/29/2004 -- Map Document: (C:\GIS\Projects\Duwamish\Projects\Slip4_Boundary_Report\Slip4_2004_PCB_Coring_Graphics_v3_rlh.mxd)



SAIC From Science to Solutions

Figure 3. Slip 4 Surface Sediment SMS Exceedances

0 15 30 60 90 120 150 Feet

N

DEPARTMENT OF ECOLOGY State of Washington

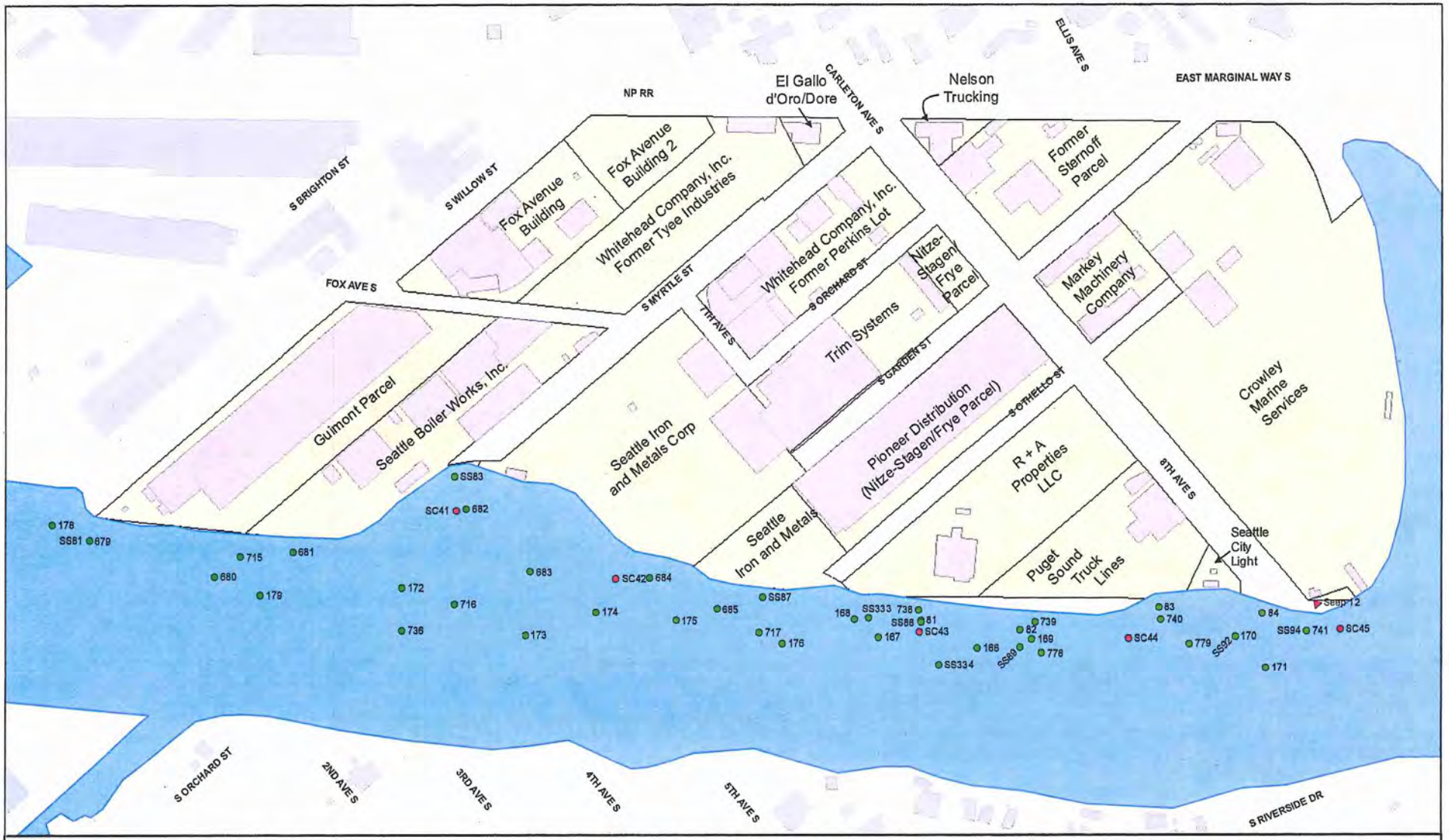
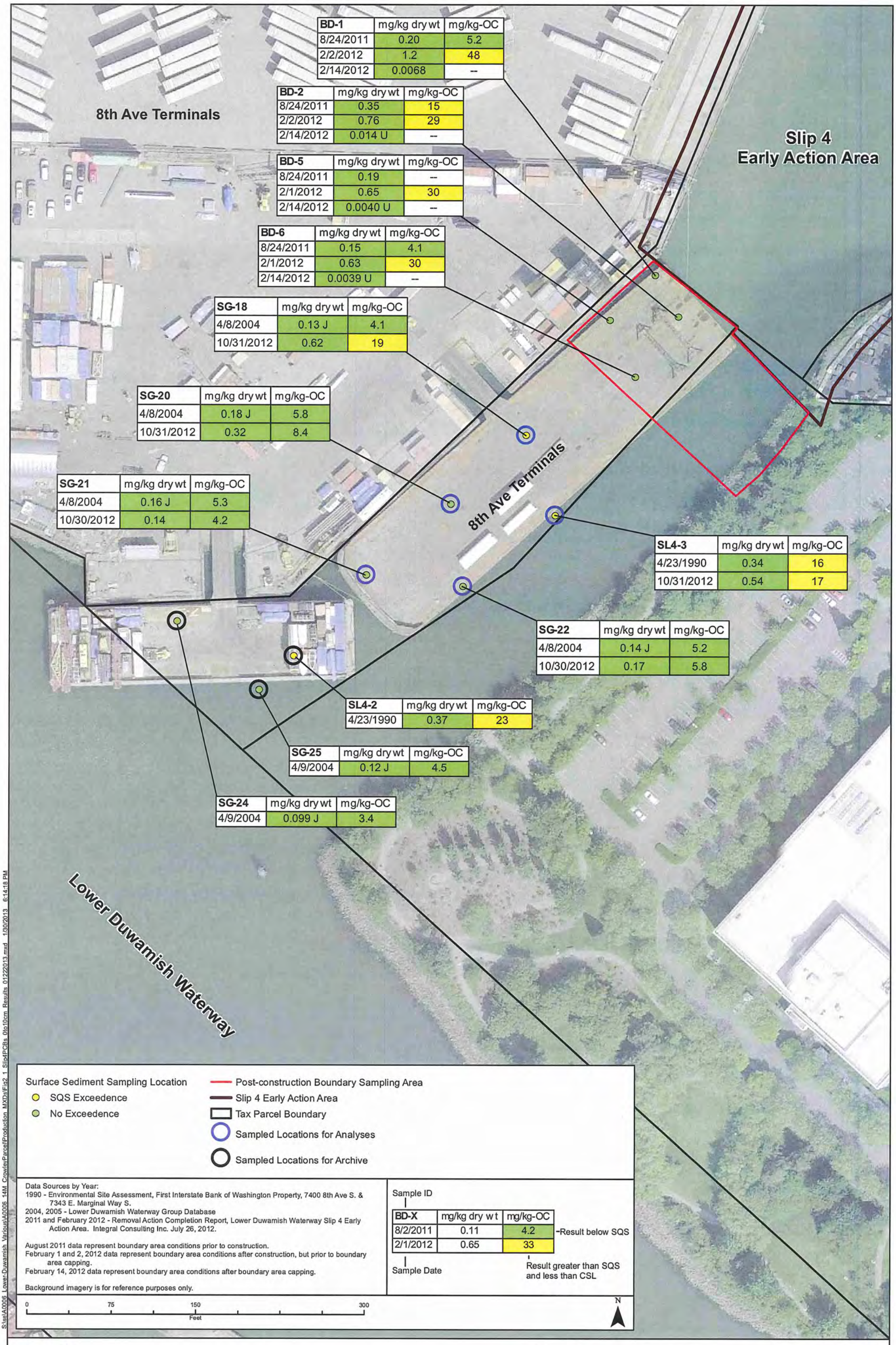


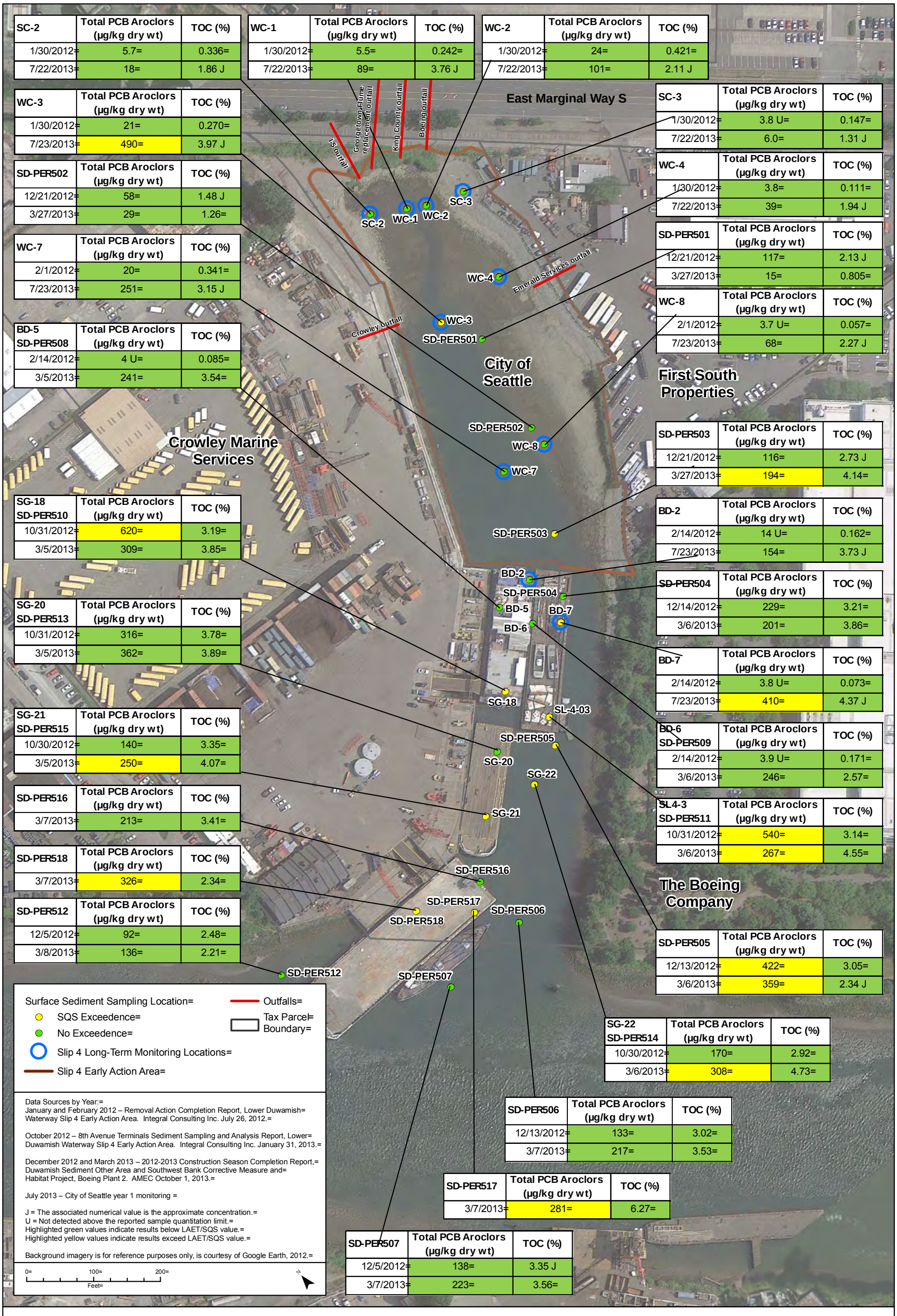
Figure 3. RM 2.3-2.8 East - Sediment and Seep Sampling Locations

SAIC
From Science to Solutions



integral consulting inc.

Figure 2.
2012 and Historical PCB Concentrations in Surface Sediments (0 - 10 cm) at 8th Avenue Terminals



SC-2	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
1/30/2012=	5.7=	0.336=
7/22/2013=	18=	1.86 J

WC-1	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
1/30/2012=	5.5=	0.242=
7/22/2013=	89=	3.76 J

WC-2	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
1/30/2012=	24=	0.421=
7/22/2013=	101=	2.11 J

WC-3	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
1/30/2012=	21=	0.270=
7/23/2013=	490=	3.97 J

SD-PER502	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
12/21/2012=	58=	1.48 J
3/27/2013=	29=	1.26=

WC-7	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
2/1/2012=	20=	0.341=
7/23/2013=	251=	3.15 J

BD-5 SD-PER508	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
2/14/2012=	4 U=	0.085=
3/5/2013=	241=	3.54=

SG-18 SD-PER510	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
10/31/2012=	620=	3.19=
3/5/2013=	309=	3.85=

SG-20 SD-PER513	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
10/31/2012=	316=	3.78=
3/5/2013=	362=	3.89=

SG-21 SD-PER515	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
10/30/2012=	140=	3.35=
3/5/2013=	250=	4.07=

SD-PER516	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
3/7/2013=	213=	3.41=

SD-PER518	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
3/7/2013=	326=	2.34=

SD-PER512	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
12/5/2012=	92=	2.48=
3/8/2013=	136=	2.21=

SC-3	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
1/30/2012=	3.8 U=	0.147=
7/22/2013=	6.0=	1.31 J

WC-4	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
1/30/2012=	3.8=	0.111=
7/22/2013=	39=	1.94 J

SD-PER501	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
12/21/2012=	117=	2.13 J
3/27/2013=	15=	0.805=

WC-8	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
2/1/2012=	3.7 U=	0.057=
7/23/2013=	68=	2.27 J

SD-PER503	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
12/21/2012=	116=	2.73 J
3/27/2013=	194=	4.14=

BD-2	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
2/14/2012=	14 U=	0.162=
7/23/2013=	154=	3.73 J

SD-PER504	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
12/14/2012=	229=	3.21=
3/6/2013=	201=	3.86=

BD-7	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
2/14/2012=	3.8 U=	0.073=
7/23/2013=	410=	4.37 J

BD-6 SD-PER509	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
2/14/2012=	3.9 U=	0.171=
3/6/2013=	246=	2.57=

SL4-3 SD-PER511	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
10/31/2012=	540=	3.14=
3/6/2013=	267=	4.55=

SD-PER505	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
12/13/2012=	422=	3.05=
3/6/2013=	359=	2.34 J

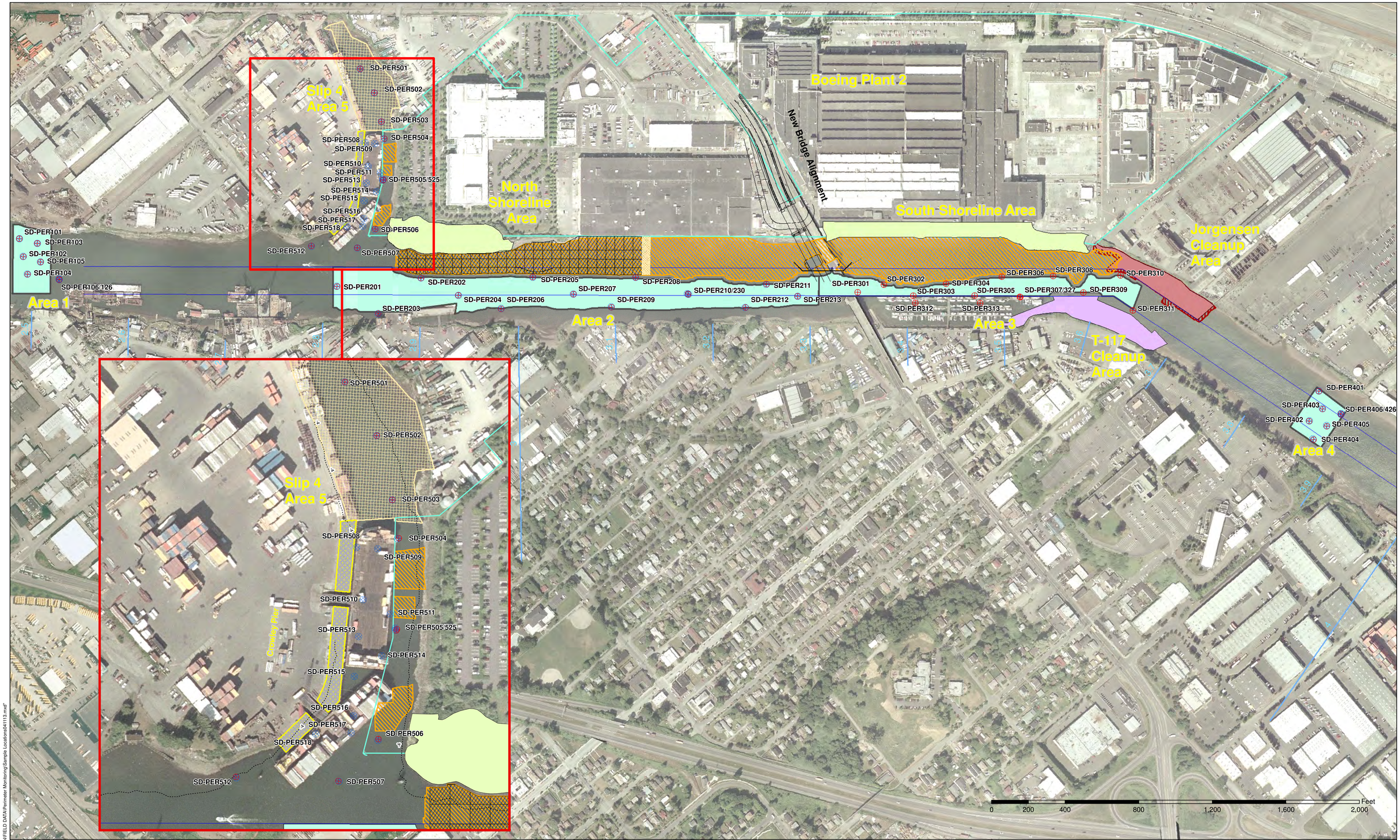
SG-22 SD-PER514	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
10/30/2012=	170=	2.92=
3/6/2013=	308=	4.73=

SD-PER506	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
12/13/2012=	133=	3.02=
3/7/2013=	217=	3.53=

SD-PER517	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
3/7/2013=	281=	6.27=

SD-PER507	Total PCB Aroclors (µg/kg dry wt)	TOC (%)
12/5/2012=	138=	3.35 J
3/7/2013=	223=	3.56=

Figure 5-3.
Total PCB and TOC Concentrations for All Slip 4 Sediment=
Samples Collected in 2012 and 2013=
Slip 4 Early Action Area=
Long-Term Monitoring Data Report - Year 1 (2013)=



Legend

- Boeing Limits of Dredging
- Crowley Pier
- Jorgensen Cleanup Area
- Jorgensen Limits of Dredging
- T-117 Cleanup Area
- Slip 4 Cap Area
- Dredged Units
- Initial Backfill
- Perimeter Monitoring Areas
- Boeing Plant 2 Parcel
- Navigation Channel Boundary

Pre-construction Samples (December 2012)
SD-PER106/126 (Field Duplicate)

End of Season 1 (March 2013)
SD-PER508

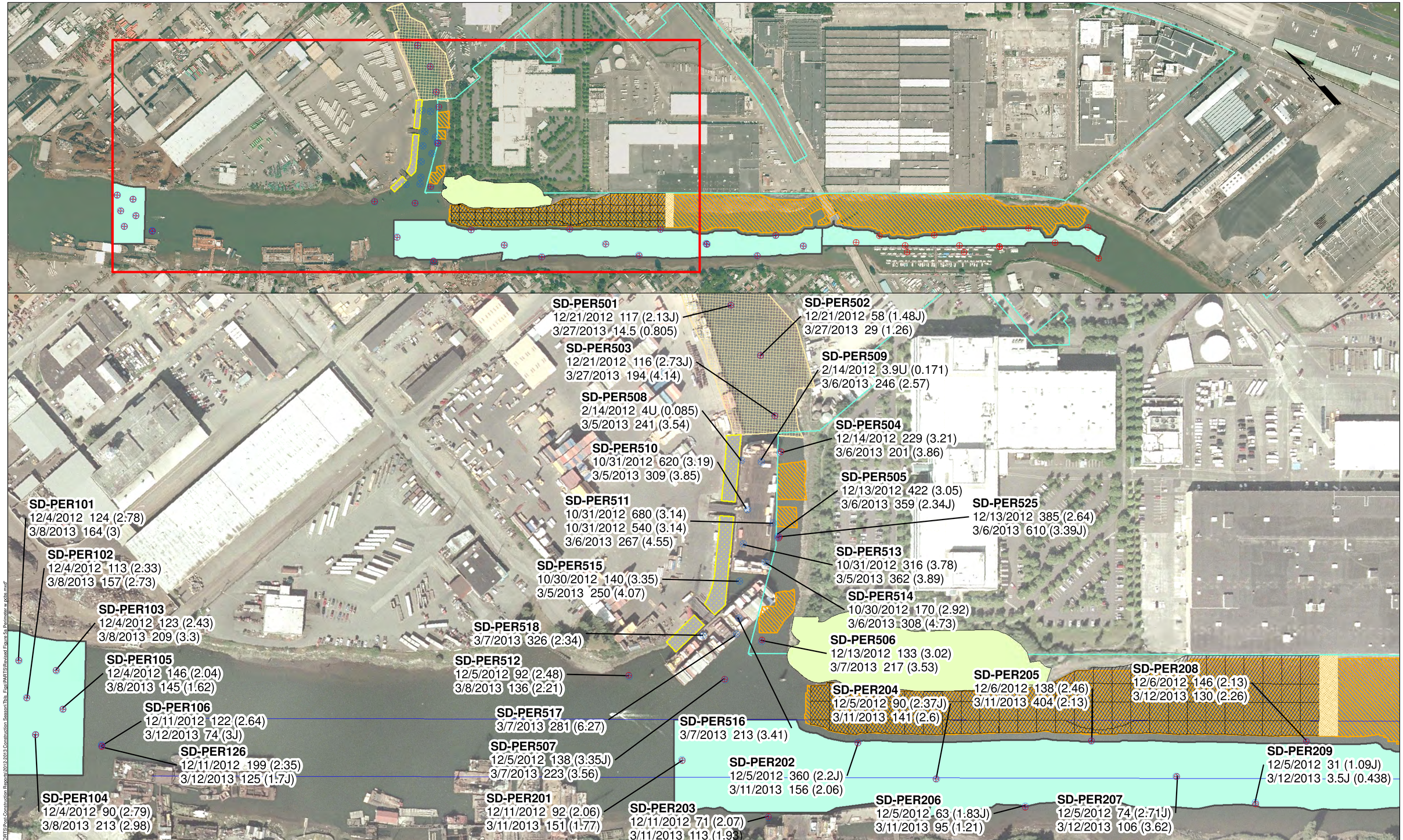
Note:
Markers are positioned at average location based on three grab samples for all locations except SD-PER501, SD-PER502, and SD-PER503. Samples collected on Slip 4 cap (SD-PER501, SD-PER502, and SD-PER503) were sampled using hand cores and divers. Symbol placed at approximate sample location.

PERIMETER MONITORING SAMPLE LOCATIONS
2012-2013 CONSTRUCTION SEASON
2012-2013 Construction Season Completion Report
Duwamish Sediment Other Area and Southwest
Bank Corrective Measure and Habitat Project,
Boeing Plant 2, Seattle/Tukwila, Washington

By: RHG	Date:5/7/2013	Project No. 0131320080

Figure 4

File path: P:\BOEING\DESIGN\FIELD DATA\Perimeter Monitoring\Sample Locations\fs041113.mxd



Legend

- Boeing Limits of Dredging
- Jorgensen Limits of Dredging
- Dredged Units
- Boeing Plant 2 Parcel
- Crowley Pier
- T-117 Cleanup Area
- Initial Backfill
- Navigation Channel Boundary
- Jorgensen Cleanup Area
- Slip 4 Cap Area
- Perimeter Monitoring Areas

- Pre-construction Samples (December 2012)
- End of Season 1 (March 2013)

Location ID SD-PER508
Sample Dates 12/8/2012 179 (2.83) — TOC %
3/17/2013 156 (2.18) — Total PCBs ppb dw

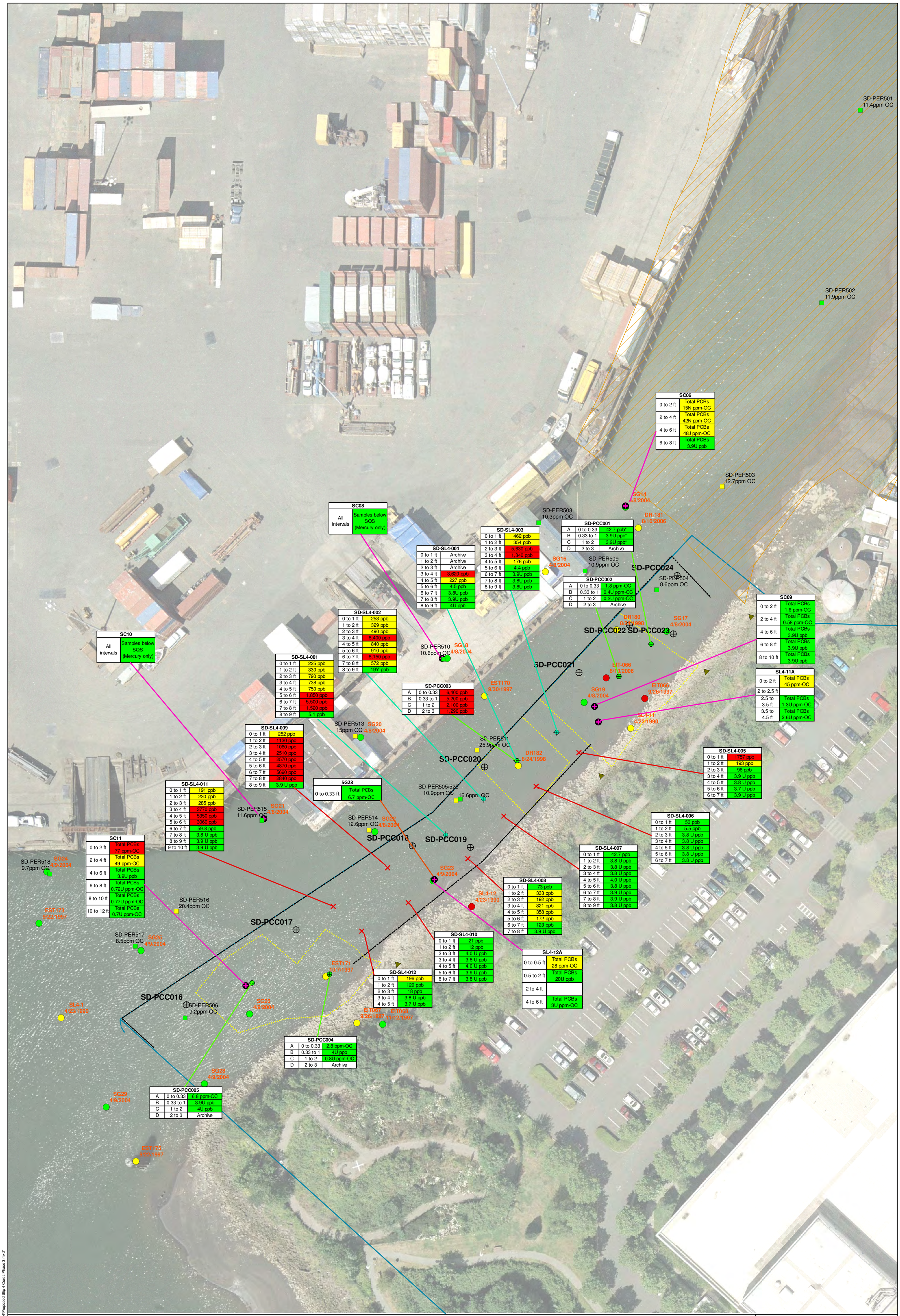
NA = Not Available

Note:
Markers are positioned at average location based on three grab samples for all locations except SD-PER501, SD-PER502, and SD-PER503. Samples collected on Slip 4 cap (SD-PER501, SD-PER502, and SD-PER503) were sampled using hand cores and divers. Symbol placed at approximate sample location.

RESULTS OF PERIMETER MONITORING FROM 2012-2013 CONSTRUCTION SEASON
2012-2013 Construction Season Completion Report
Duwamish Sediment Other Area and Southwest Bank Corrective Measure and Habitat Project,
Boeing Plant 2, Seattle/Tukwila, Washington

By: RHG	Date 9/18/2013	Project No. 0131320080
		Figure 5a

File path="P:\BOEING\DESIGN\REPORTS\Post-Construction Reports\2012-2013 Construction Season\Tbls_Figs\PARTS\Revised Figure 5a Perimeter w pcbs.mxd"


SD-PER501
11.4ppm OC
SD-PER502
11.9ppm OC
SD-PER503
12.7ppm OC
SD-PER504
8.6ppm OC
SD-PER505/525
10.9ppm OC
16.6ppm OC
SD-PER506
9.2ppm OC
SD-PER508
10.3ppm OC
SD-PER509
10.9ppm OC
SD-PER510
10.6ppm OC
SD-PER511
25.9ppm OC
SD-PER513
15ppm OC
SD-PER514
12.6ppm OC
SD-PER515
11.6ppm OC
SD-PER516
20.4ppm OC
SD-PER517
8.5ppm OC
SD-PER518
9.7ppm OC
SD-PCC001
SD-PCC002
SD-PCC003
SD-PCC004
SD-PCC005
SD-PCC016
SD-PCC017
SD-PCC018
SD-PCC019
SD-PCC020
SD-PCC021
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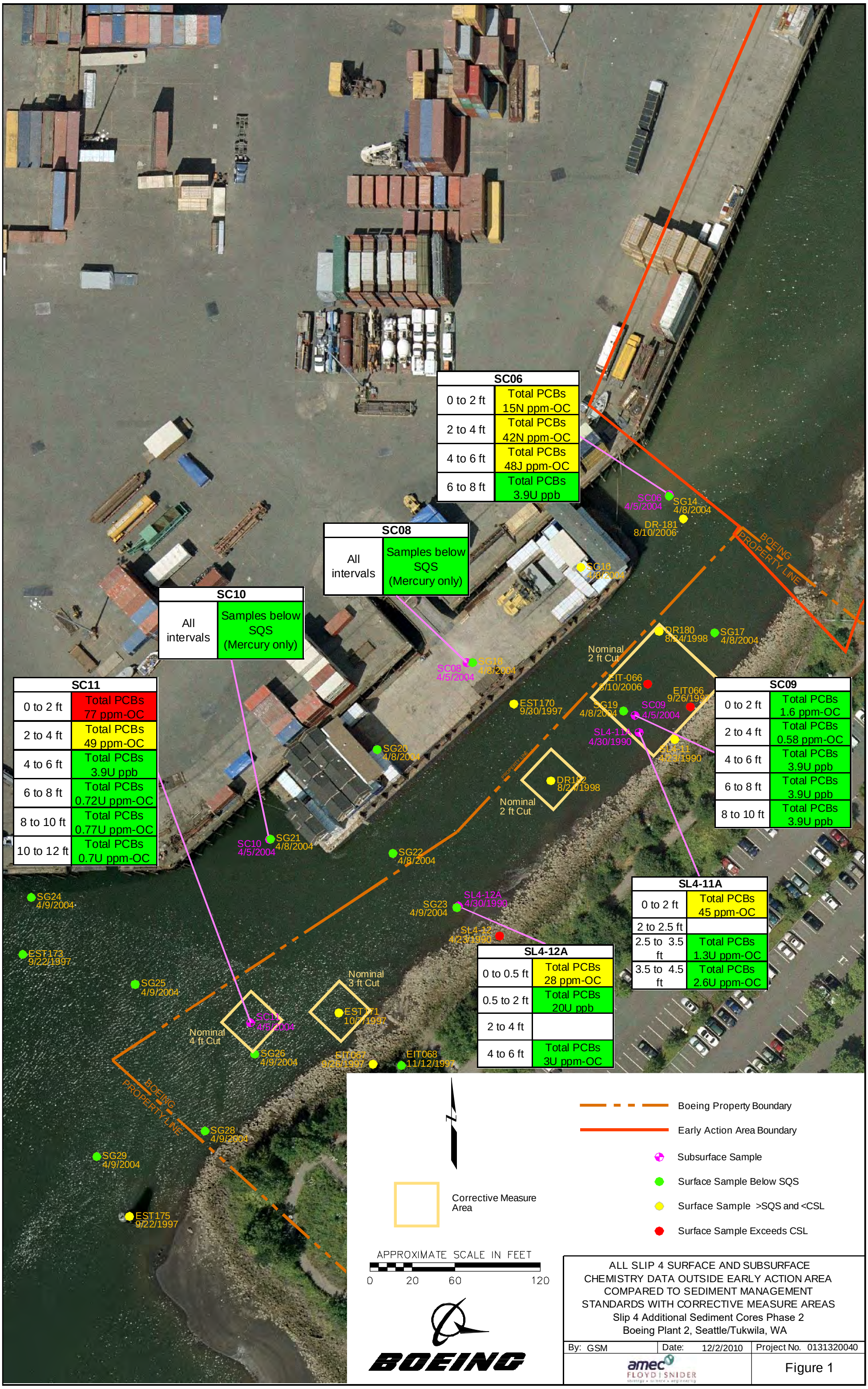
SD-PCC023
SD-PCC024
SC06
SC08
SC09
SC10
SC11
SL4-11A
SL4-12A
SD-SL4-001
SD-SL4-002
SD-SL4-003
SD-SL4-004
SD-SL4-005
SD-SL4-006
SD-SL4-007
SD-SL4-008
SD-SL4-009
SD-SL4-010
SD-SL4-011
SD-SL4-012
SG23
SC06
0 to 2 ft: Total PCBs 15N ppm-OC
2 to 4 ft: Total PCBs 42N ppm-OC
4 to 6 ft: Total PCBs 48J ppm-OC
6 to 8 ft: Total PCBs 3.9U ppb
SC08
All intervals: Samples below SQS (Mercury only)
SC09
0 to 2 ft: Total PCBs 1.6 ppm-OC
2 to 4 ft: Total PCBs 0.58 ppm-OC
4 to 6 ft: Total PCBs 3.9U ppb
6 to 8 ft: Total PCBs 3.9U ppb
8 to 10 ft: Total PCBs 3.9U ppb
SC10
All intervals: Samples below SQS (Mercury only)
SC11
0 to 2 ft: Total PCBs 77 ppm-OC
2 to 4 ft: Total PCBs 49 ppm-OC
4 to 6 ft: Total PCBs 3.9U ppb
6 to 8 ft: Total PCBs 0.72U ppm-OC
8 to 10 ft: Total PCBs 0.77U ppm-OC
10 to 12 ft: Total PCBs 0.7U ppm-OC
SL4-11A
0 to 2 ft: Total PCBs 45 ppm-OC
2 to 2.5 ft:
2.5 to 3.5 ft: Total PCBs 1.3U ppm-OC
3.5 to 4.5 ft: Total PCBs 2.6U ppm-OC
SL4-12A
0 to 0.5 ft: Total PCBs 28 ppm-OC
0.5 to 2 ft: Total PCBs 20U ppb
2 to 4 ft:
4 to 6 ft: Total PCBs 3U ppm-OC
SD-PCC001
A: 0 to 0.33: 42.7 ppb*
B: 0.33 to 1: 3.9U ppb*
C: 1 to 2: 3.9U ppb*
D: 2 to 3: Archive
SD-PCC002
A: 0 to 0.33: 1.8 ppm-OC
B: 0.33 to 1: 0.4U ppm-OC
C: 1 to 2: 0.2U ppm-OC
D: 2 to 3: Archive
SD-PCC003
A: 0 to 0.33: 6,400 ppb
B: 0.33 to 1: 5,200 ppb
C: 1 to 2: 2,100 ppb
D: 2 to 3: 1,290 ppb
SD-PCC004
A: 0 to 0.33: 2.8 ppm-OC
B: 0.33 to 1: 4U ppb
C: 1 to 2: 0.8U ppm-OC
D: 2 to 3: Archive
SD-PCC005
A: 0 to 0.33: 6.8 ppm-OC
B: 0.33 to 1: 3.9U ppb
C: 1 to 2: 4U ppb
D: 2 to 3: Archive
SD-SL4-001
0 to 1 ft: 225 ppb
1 to 2 ft: 330 ppb
2 to 3 ft: 790 ppb
3 to 4 ft: 738 ppb
4 to 5 ft: 750 ppb
5 to 6 ft: 1,850 ppb
6 to 7 ft: 5,500 ppb
7 to 8 ft: 1,520 ppb
8 to 9 ft: 5.1 ppb
SD-SL4-002
0 to 1 ft: 253 ppb
1 to 2 ft: 329 ppb
2 to 3 ft: 490 ppb
3 to 4 ft: 8,400 ppb
4 to 5 ft: 840 ppb
5 to 6 ft: 910 ppb
6 to 7 ft: 8,150 ppb
7 to 8 ft: 572 ppb
8 to 9 ft: 19Y ppb
SD-SL4-003
0 to 1 ft: 462 ppb
1 to 2 ft: 354 ppb
2 to 3 ft: 5,630 ppb
3 to 4 ft: 1,340 ppb
4 to 5 ft: 176 ppb
5 to 6 ft: 4.4 ppb
6 to 7 ft: 3.9U ppb
7 to 8 ft: 3.8U ppb
8 to 9 ft: 3.8U ppb
SD-SL4-004
0 to 1 ft: Archive
1 to 2 ft: Archive
2 to 3 ft: Archive
3 to 4 ft: 3,620 ppb
4 to 5 ft: 227 ppb
5 to 6 ft: 4.5 ppb
6 to 7 ft: 3.8U ppb
7 to 8 ft: 3.9U ppb
8 to 9 ft: 4U ppb
SD-SL4-005
0 to 1 ft: 1757 ppb
1 to 2 ft: 193 ppb
2 to 3 ft: 96 ppb
3 to 4 ft: 3.9 U ppb
4 to 5 ft: 3.8 U ppb
5 to 6 ft: 3.7 U ppb
6 to 7 ft: 3.9 U ppb
SD-SL4-006
0 to 1 ft: 53 ppb
1 to 2 ft: 5.5 ppb
2 to 3 ft: 3.8 U ppb
3 to 4 ft: 3.8 U ppb
4 to 5 ft: 3.8 U ppb
5 to 6 ft: 3.8 U ppb
6 to 7 ft: 3.8 U ppb
SD-SL4-007
0 to 1 ft: 42.7 ppb
1 to 2 ft: 3.8 U ppb
2 to 3 ft: 3.8 U ppb
3 to 4 ft: 3.8 U ppb
4 to 5 ft: 4.0 U ppb
5 to 6 ft: 3.8 U ppb
6 to 7 ft: 3.9 U ppb
7 to 8 ft: 3.9 U ppb
8 to 9 ft: 3.8 U ppb
SD-SL4-008
0 to 1 ft: 73 ppb
1 to 2 ft: 333 ppb
2 to 3 ft: 192 ppb
3 to 4 ft: 821 ppb
4 to 5 ft: 358 ppb
5 to 6 ft: 172 ppb
6 to 7 ft: 123 ppb
7 to 8 ft: 3.9 U ppb
SD-SL4-009
0 to 1 ft: 252 ppb
1 to 2 ft: 1130 ppb
2 to 3 ft: 1060 ppb
3 to 4 ft: 2510 ppb
4 to 5 ft: 2570 ppb
5 to 6 ft: 4870 ppb
6 to 7 ft: 5690 ppb
7 to 8 ft: 2840 ppb
8 to 9 ft: 3.9 U ppb
SD-SL4-010
0 to 1 ft: 21 ppb
1 to 2 ft: 12 ppb
2 to 3 ft: 4.0 U ppb
3 to 4 ft: 3.8 U ppb
4 to 5 ft: 4.0 U ppb
5 to 6 ft: 3.9 U ppb
6 to 7 ft: 3.8 U ppb
SD-SL4-011
0 to 1 ft: 191 ppb
1 to 2 ft: 230 ppb
2 to 3 ft: 285 ppb
3 to 4 ft: 3770 ppb
4 to 5 ft: 5350 ppb
5 to 6 ft: 3060 ppb
6 to 7 ft: 59.8 ppb
7 to 8 ft: 3.8 U ppb
8 to 9 ft: 3.9 U ppb
9 to 10 ft: 3.9 U ppb
SD-SL4-012
0 to 1 ft: 196 ppb
1 to 2 ft: 129 ppb
2 to 3 ft: 18 ppb
3 to 4 ft: 3.8 U ppb
4 to 5 ft: 3.7 U ppb
SG23
0 to 0.33 ft: Total PCBs 6.7 ppm-OC
SG14 4/8/2004
SG16 4/8/2004
SG17 4/8/2004
SG18 4/8/2004
SG19 4/8/2004
SG20 4/8/2004
SG21 4/8/2004
SG22 4/8/2004
SG23 4/9/2004
SG24 4/9/2004
SG25 4/9/2004
SG26 4/9/2004
SG28 4/9/2004
SG29 4/9/2004
DR-181 8/10/2006
DR180 8/24/1998
DR182 8/24/1998
EIT-066 8/10/2006
EIT066 9/26/1997
EIT067 9/26/1997
EIT068 11/12/1997
EST170 9/30/1997
EST171 10/7/1997
EST173 9/22/1997
EST175 9/22/1997
SL4-1 4/23/1990
SL4-11 4/23/1990
SL4-12 4/23/1990
Proposed Additional Confirmation Cores
Phase 2 Slip 4 Core Locations (Jan 2015)
Phase 1 Slip 4 Core Locations (Dec 2014)
Historic Core Locations
Historic Surface Grab Locations
Perimeter Monitoring Locations (Sept 2014)
Historic Outfalls
Slip 4 Cap
Sheetpile
Total PCB (ppb DW or ppm OC)
<130 ppb DW or <12 ppm OC
≥130 ppb DW or ≥12 ppm OC and <1,000 ppb DW or <65 ppm OC
≥1,000 ppb DW or ≥65 ppm OC
"P:\BOEING\DESIGN\DATA\Slip 4\Proposed Slip 4 Cores Phase 3.mxd"
SLIP 4 CORE LOCATIONS
Additional Slip 4 Confirmation Cores
Phase 3
Boeing Plant 2
Seattle/Tukwila, WA
By: RHG
Date: 1/30/2015
Project No. 0131320090
Figure 1
BOEING



ALL SLIP 4 SURFACE AND SUBSURFACE CHEMISTRY DATA OUTSIDE EARLY ACTION AREA COMPARED TO SEDIMENT MANAGEMENT STANDARDS WITH CORRECTIVE MEASURE AREAS
Slip 4 Additional Sediment Cores Phase 2
Boeing Plant 2, Seattle/Tukwila, WA

By: GSM	Date: 12/2/2010	Project No. 0131320040
amec FLOYD|SNIDER		Figure 1

Plot Date: 12/02/10 - 3:43pm, Plotted by: gary.maxwell
Drawing Path: P:\BOEING\SLIP 4\Sediment Characterization\CAD\, Drawing Name: SLIP4-Alternatives Evaluation Fig 5-6-7.dwg

SD-PCC001			
A	0 to 0.33	42.7 ppb*	—
B	0.33 to 1	3.9U ppb*	—
C	1 to 2	3.9U ppb*	—
D	2 to 3	Archive	Archive

SD-PCC001

SD-PCC002

SD-PCC002			
A	0 to 0.33	19.6 ppb	1.8 ppm-OC
B	0.33 to 1	3.9U ppb	0.4U ppm-OC
C	1 to 2	3.9U ppb	0.2U ppm-OC
D	2 to 3	Archive	Archive

SD-PCC003

SD-PCC003			
A	0 to 0.33	6,400 ppb	444 ppm-OC
B	0.33 to 1	5,200 ppb	347 ppm-OC
C	1 to 2	2,100 ppb	117 ppm-OC
D	2 to 3	1,290 ppb	—

SD-PCC005

SD-PCC004

SD-PCC004			
A	0 to 0.33	42.3 ppb	2.8 ppm-OC
B	0.33 to 1	4U ppb*	—
C	1 to 2	3.9U ppb	0.8U ppm-OC
D	2 to 3	Archive	Archive

SD-PCC005			
A	0 to 0.33	40 ppb	6.8 ppm-OC
B	0.33 to 1	3.9U ppb*	—
C	1 to 2	4U ppb*	—
D	2 to 3	Archive	Archive

Legend

⊗ Post-construction Core Location

SD-PCC004			
A	0 to 0.33	42.3 ppb	2.8 ppm-OC
B	0.33 to 1	4U ppb*	—
C	1 to 2	3.9U ppb	0.8U ppm-OC
D	2 to 3	Archive	Archive
Segment	Interval	Total PCBs (ppb dw)	Total PCBs (ppm OC)

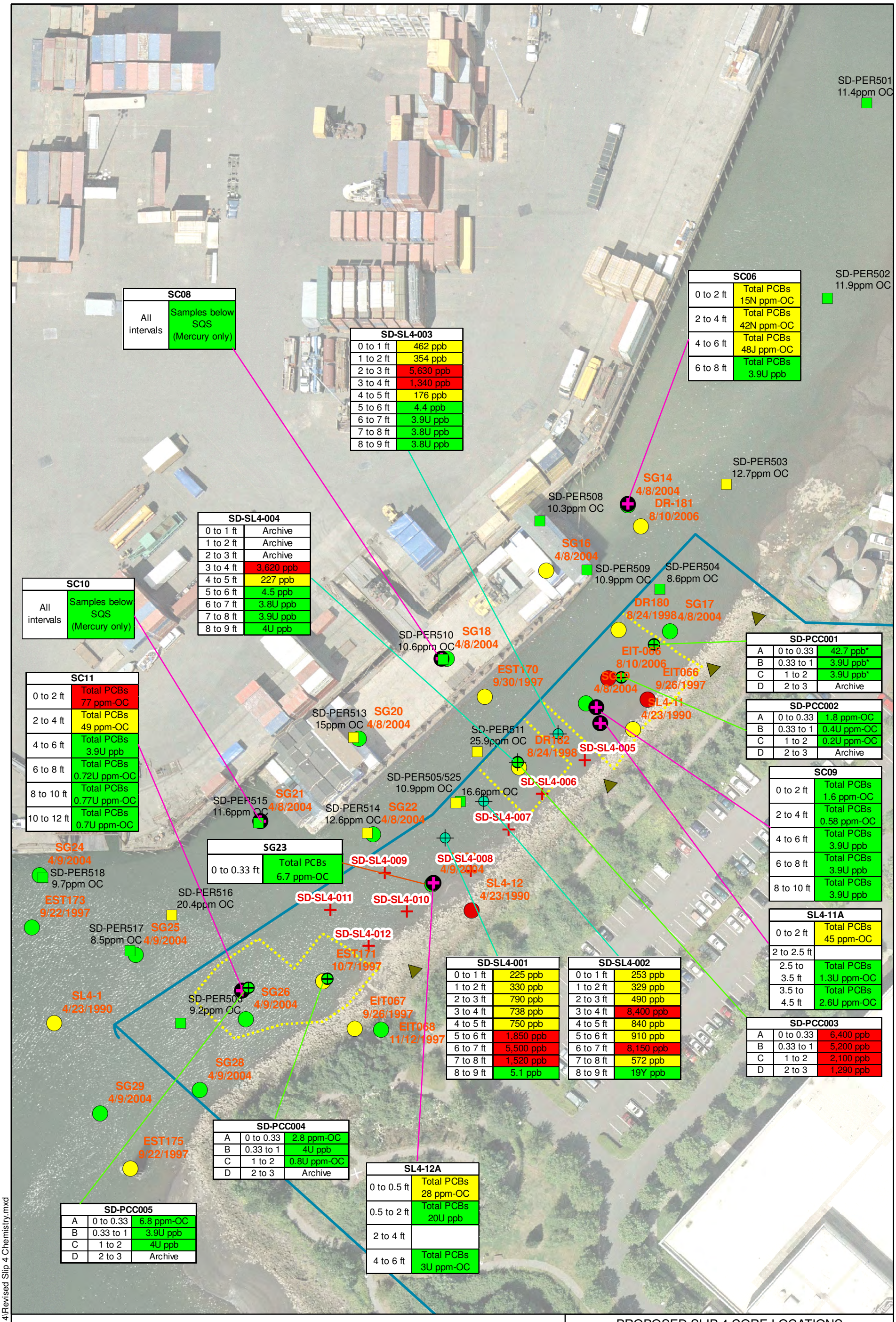
Notes:
* = Total organic carbon less than 0.5 %, OC normalized value not calculated.
U = undetected at the reporting limit
Gray cells indicate sample requested but not received

BOEING

RESULTS OF POST-CONSTRUCTION CORES
COLLECTED IN SLIP 4
Slip 4 Additional Sediment Cores
Phase 2
Boeing Plant 2,
Seattle/Tukwila, WA

By: RHG	Date: 1/13/2015	Project No. 0131320090

Figure **2**



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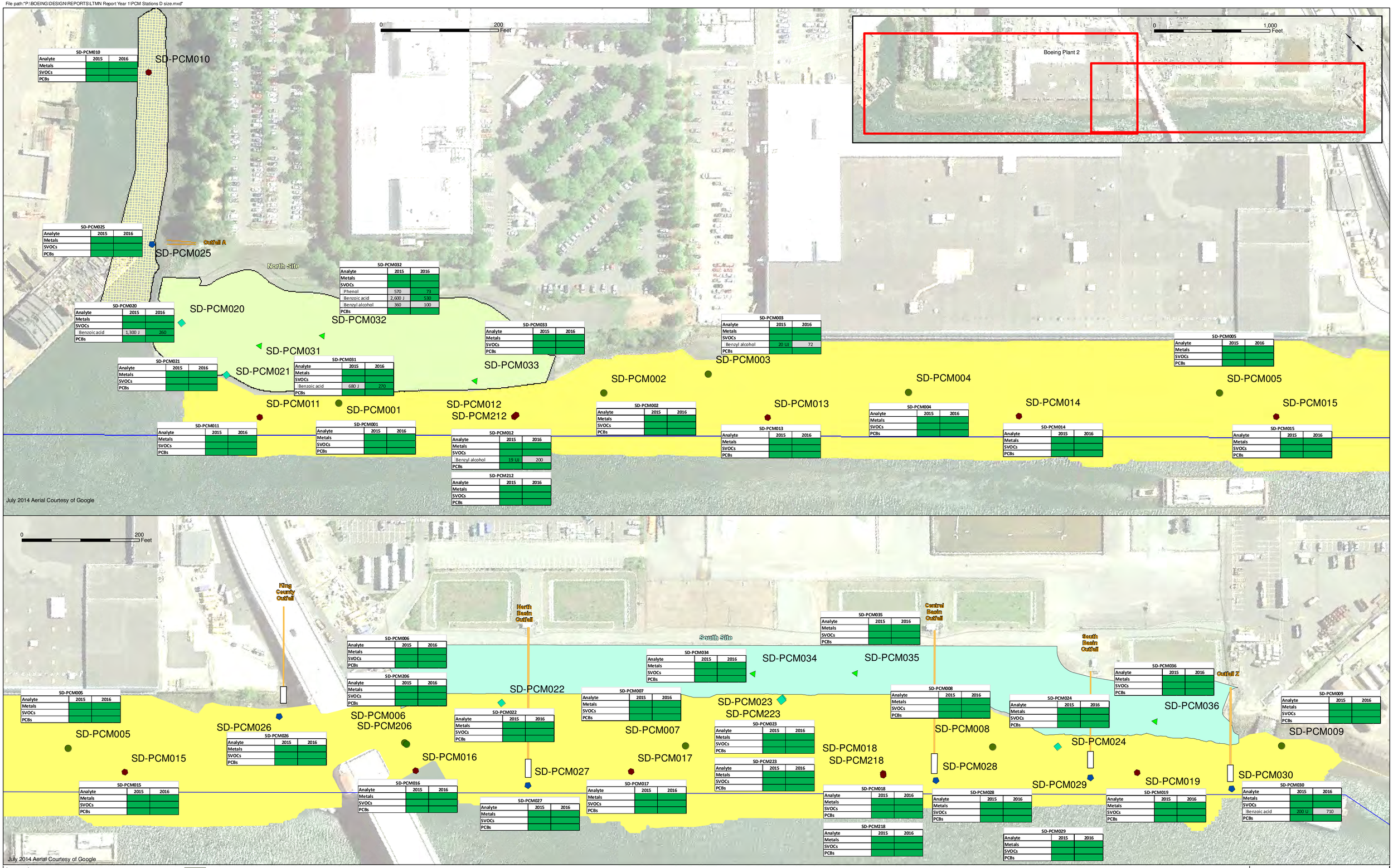
PROPOSED SLIP 4 CORE LOCATIONS
Slip 4 Additional Sediment Cores
Phase 2
Boeing Plant 2
Seattle/Tukwila, WA

By: RHG	Date: 1/13/2015	Project No. 0131320090

Figure 3

File path:"P:\BOEING\DESIGN\REPORTS\LTMN Report Year 1\PCM Stations D size.mxd"



SD-PCM010

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM025

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM020

Analyte	2015	2016
Metals		
SVOCs		
Benzoic acid	1,300 J	260
PCBs		

SD-PCM032

Analyte	2015	2016
Metals		
SVOCs		
Phenol	570	73
Benzoic acid	2,600 J	530
Benzyl alcohol	360	100
PCBs		

SD-PCM033

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM003

Analyte	2015	2016
Metals		
SVOCs		
Benzyl alcohol	20 UJ	72
PCBs		

SD-PCM005

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM021

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM031

Analyte	2015	2016
Metals		
SVOCs		
Benzoic acid	680 J	270
PCBs		

SD-PCM002

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM004

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM011

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM001

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM012

Analyte	2015	2016
Metals		
SVOCs		
Benzyl alcohol	19 UJ	200
PCBs		

SD-PCM212

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM013

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM014

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM015

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM006

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM206

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM034

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM035

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM036

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM009

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM005

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM026

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM022

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM007

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM023

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM223

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM008

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM024

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM015

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM016

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM027

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM017

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM018

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM218

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM028

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM029

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM019

Analyte	2015	2016
Metals		
SVOCs		
PCBs		

SD-PCM030

Analyte	2015	2016
Metals		
SVOCs		
Benzoic acid	200 U	710
PCBs		

Legend

- Shoreline Area Samples (at approximately +7 ft MLLW)
- Shoreline Area Samples (at approximately +4 ft MLLW)
- Sampling Locations (above -5 ft MLLW and below + 4 ft MLLW)
- Sampling Location (below -5 ft MLLW)
- Outfall Sample Locations

- North Site
- South Site
- Slip 4 Approximate Dredge Area
- DSOA Limits of Dredging

SMS COC Groups

SD-PCM030

Analyte	2015	2016
Metals		
SVOCs		
Benzoic acid	200 U	710
PCBs		

Sampling Location

_SMS Analyte That Exceeds SMS Criteria

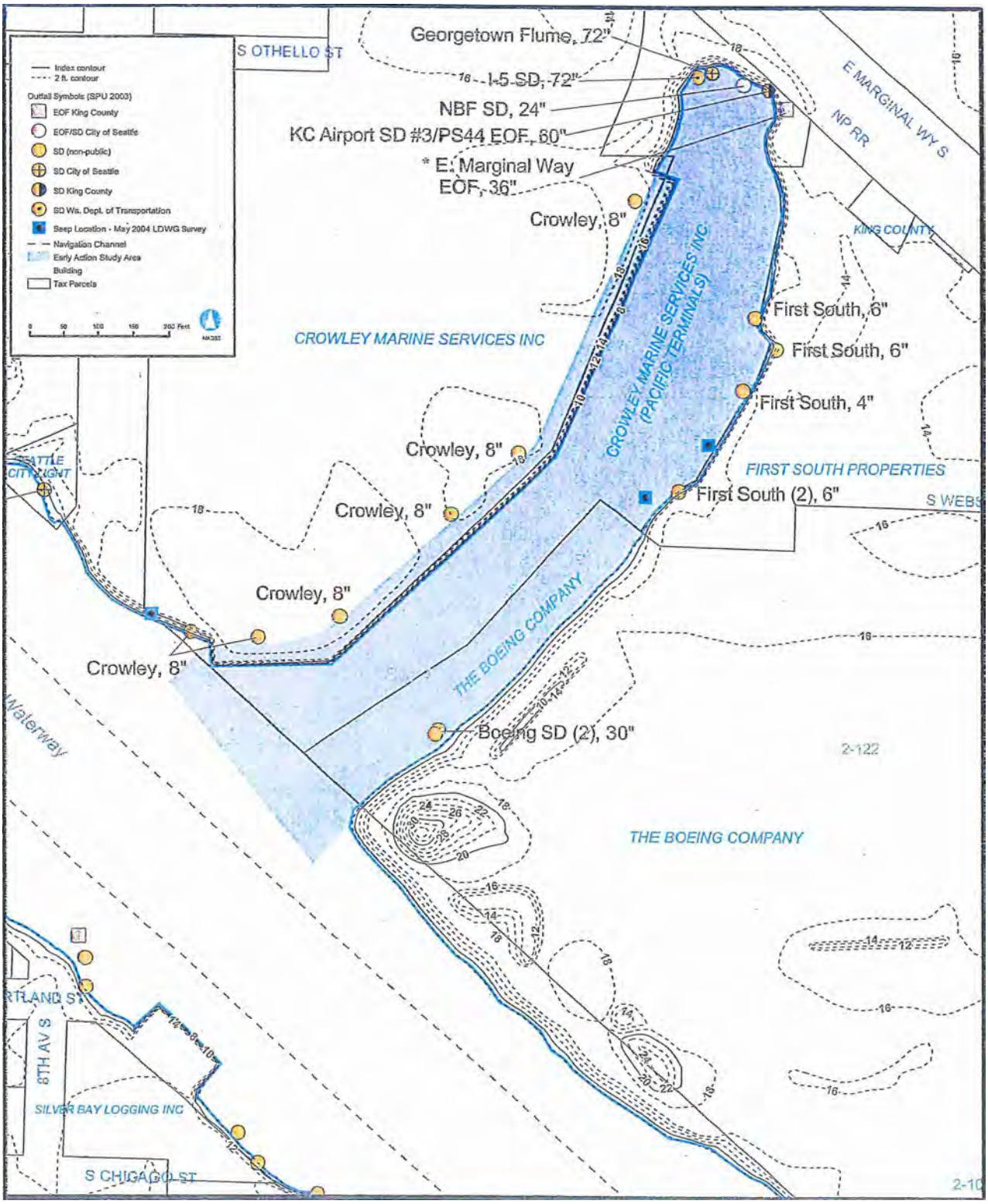
Notes:
Sediment concentrations for Sediment Management Standards (SMS) chemicals of concern (COC) are compared to the SMS dry weight equivalent sediment criteria (Sediment Quality Standard [SQS] and Cleanup Screening Level [CSL] criteria). If all of the SMS COCs within a group are below the SQS then the cell is colored green. If one or more analytes exceed the SQS (or CSL) then the analyte is listed with the results from each year and the cells are color coded gray to indicate the value exceeds one or more of the SMS criterion.

POST-CONSTRUCTION SURFACE MONITORING
SAMPLING RESULTS 2015 AND 2016
Duwamish Sediment Other Area and Southwest
Bank Corrective Measure and Habitat Project,
Boeing Plant 2, Seattle/Tukwila, Washington

BOEING

By: RHG	Date: 6/1/2016	Project No. 0131320100
		Figure 1

FIGURES



Adapted from: Integral 2006

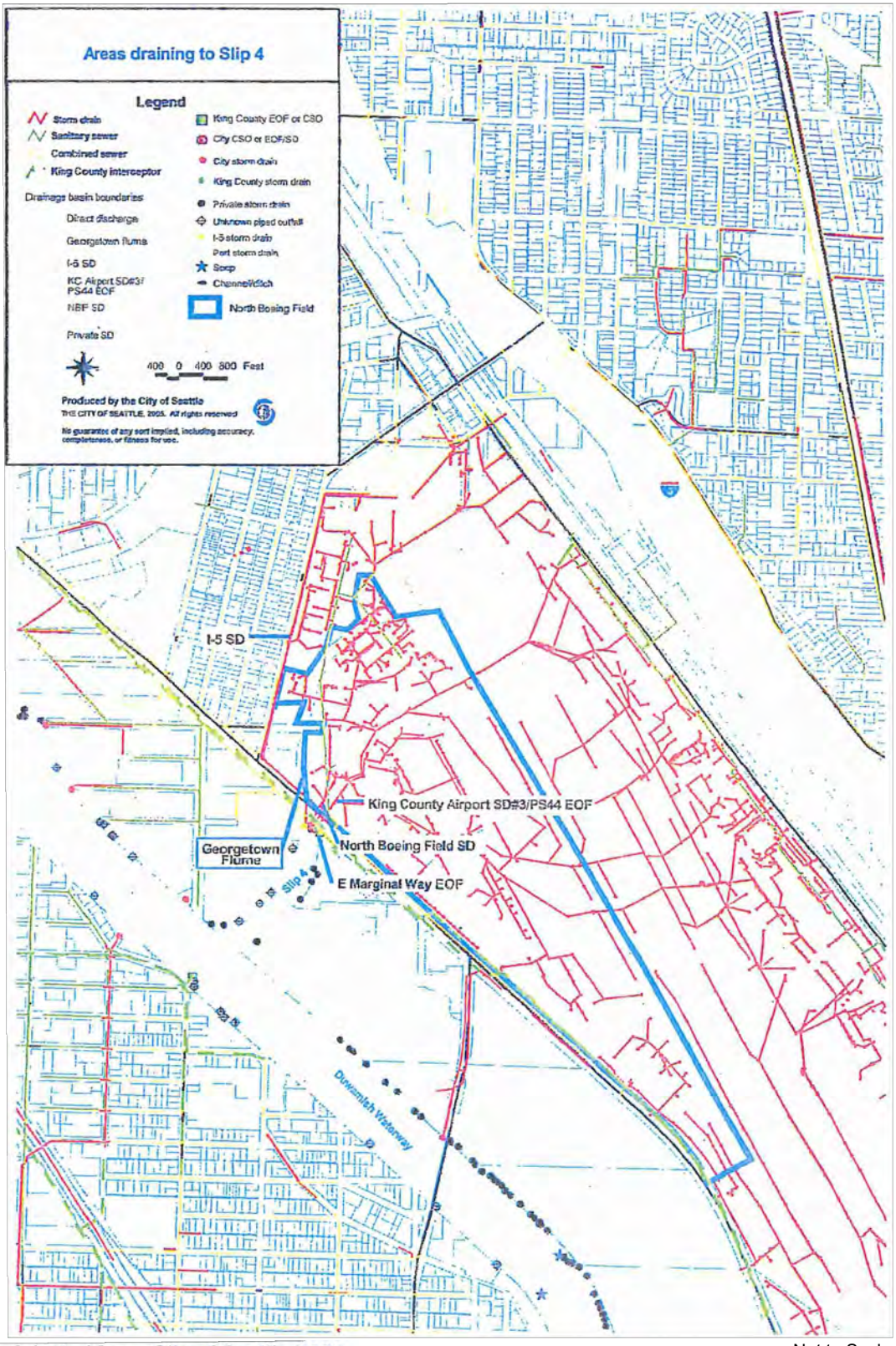
* East Marginal Way EOF not observed during SPU (2003) survey; location based on King County coordinates.

Not to Scale

SOURCE: Drawing prepared from SLR 2014

Aug 09, 2016 9:55am hhayward T:\CAD\Projects\1044-Denovo Constructors Misc Services_Remedial Investigation Report\1044-RP-004 (Slip 4 Drainage Areas).dwg B-1

Figure B-1
Slip 4 Outfalls
Draft Remedial Investigation Report
8th Avenue Terminals, Inc. Site



Adapted from: City of Seattle 2006

Not to Scale

SOURCE: Drawing prepared from SLR 2014

Aug 09, 2016 9:55am hhayward T:\CAD\Projects\1044-Denovo Constructors Misc Services_Remedial Investigation Report\1044-RP-004 (Slip 4 Drainage Areas).dwg B-2

Figure B-2
Areas Draining to Slip 4
Draft Remedial Investigation Report
8th Avenue Terminals, Inc. Site

TABLE

Table C-1
Historical Sediment Sampling Summary

Report Title	Reference	Sample Date(s)	Surface Sediment Samples		Subsurface Sediment Samples		Intertidal Sediment Samples	
			Sample Count	Chemical Testing	Sample Count	Chemical Testing	Sample Count	Chemical Testing
Environmental Site Assessment, First Interstate Bank of Washington Property	EPA, Metro, PTI, Tetra Tech, and Hart Crowser data cited in Landau 1990	1983-1988	11	PCBs	--	--	--	--
1981 Dredging								
Environmental Site Assessment, First Interstate Bank of Washington Property	Landau 1990	1990	12	PCBs, SVOCs, metals	12[a] (up to 10 feet)	PCBs, SVOCs, metals	--	--
Data Report, Proposed Dredging of Slip No. 4, Duwamish River	PTI 1996	1994-1995	8	PCBs, SVOCs, metals	4[b] (DMMU)	PCBs, SVOCs, VOCs, and metals	--	--
1996 Dredging								
Lower Duwamish Waterway Slip 4 Early Action Area: Revised Draft Technical Memorandum on Proposed Boundary of the Removal Action	Integral 2005 (identifies data from Exponent 1998, Landau 1990, Weston 1999, and NOAA 1998)	1998-1999	29	NA	--	--	--	--
Lower Duwamish Waterway Slip 4 Early Action Area: Cruise and Data Report	2004	2004	29	PCBs, metals	11 collected, 9 analyzed (up to 12 feet deep)	PCBs, metals	1	--
Lower Duwamish Waterway Remedial Investigation. Data report: Subsurface sediment sampling for chemical analyses.	Windward and RETEC 2007	2007	1	--	1 (up to 4 feet deep)	--	--	--
North Boeing Field/Georgetown Steam Plant Site Remedial Investigation/Feasibility Study, Slip 4 Sediment Recontamination Modeling Report	SAIC 2010	2010	20	PCBs, metals, SVOCs, D/F	--	--	--	--
Lower Duwamish Waterway Slip 4 Early Action Area: Draft Removal Action Completion Report	Integral 2012	2011 (prior to EAA)	4	PCBs	--	--	--	--
October 2011 to February 2012 - City of Seattle Property EAA								
Lower Duwamish Waterway Slip 4 Early Action Area: Draft Removal Action Completion Report	Integral 2012	2011 (post EAA)	4	PCBs	--	--	--	--
February 2012 placement of 9 inch waterway cap material over the boundary area								
Lower Duwamish Waterway Slip 4 Early Action Area: Draft Removal Action Completion Report	Integral 2012	2012 (post cap)	4	PCBs	--	--	--	--
Slip 4 Early Action Area, 8th Avenue Terminals Sediment Sampling and Analysis Report	Integral 2013	2012	8 collected, 5 analyzed	PCBs	--	--	--	--
2012-2013 Construction Season Report, Duwamish Sediment Other Area and Southwest Bank, Corrective Measure and Habitat Project	AMEC 2013	2012-2013	*see AMEC 2014*	--	--	--	--	--
Slip 4 Early Action Area, Long-Term Monitoring Data Report, Year 1 (2013)	Integral 2014	2012-2013	10 (2 rounds of sampling complete)	PCBs, Metals, SVOCs	--	--	--	--
2012-2014 Construction Season Report, Duwamish Sediment Other Area and Southwest Bank, Corrective Measure and Habitat Project	AMEC 2014	2012-2014	18 (3 rounds of sampling complete)	PCBs	--	--	--	--
December 2014 and March 2015 - Boeing Slip 4 Dredging								
Slip 4 Additional Sediment Cores, Phase 2, Boeing Plant 2	AMEC 2015	December 2014	--	--	5 (up to 3 feet deep)	PCBs	--	--
Slip 4 Additional Sediment Cores, Phase 2, Boeing Plant 2	AMEC 2015	December 2014	--	--	4 (up to 9 feet deep)	PCBs	--	--
Slip 4 Additional Sediment Cores, Phase 2, Boeing Plant 2	AMEC 2015	January 2015	--	--	8 (up to 10 feet deep)	PCBs	--	--
Boeing Plant 2 DSOA Corrective Measure and Habitat Project Work Plan for Slip 4 - Post-Construction Surface Sediment Monitoring - Year 1	AMEC 2016	March 2016	2 (0 to 0.33 feet below mudline)	Metals, PAHs, SVOCs, PCBs	--	--	--	--

Notes:

[a] Most of the core locations, including the 4 cores within or adjacent to the Site were co-located with the surface samples. Cores were up to 10 feet deep.

[b] Two cores collected and composited from each of 4 DMMUs

AMEC = AMEC Environment & Infrastructure, Inc.
DMMU = Dredged Material Management Unit
DOF = Dalton, Olmsted & Fuglevand, Inc.
DSOA = Duwamish Sediment Other Area
EAA = Early Action Area
EPA = U.S Environmental Protection Agency
Metro = Municipality of Metropolitan Seattle
NOAA = National Oceanic and Atmospheric Administration
PAH = polycyclic aromatic hydrocarbon
PCB = polychlorinated biphneyl
PTI = PTI Environmental Services
SAIC = Science Application International Corporation
SVOC = semivolatile organic compound
VOC = volatile organic compound

APPENDIX D

FIELD LOGS AND SAMPLING DETAILS

FIELD LOGS

GROUNDWATER SAMPLING DATA SHEETS

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: CMW-1

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: CMW-1-20141215

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		(CLOUDY)		RAIN		TEMPERATURE:	(°F) 45 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW		[Water Column x Gal/ft] Volume (gal)
12/15/14	17:47	16.91	---	8.45	---	8.46	X 1	1.38
/ /	:	.	---	.	---	.	X 3	4.14

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/15/14	18:31		1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	12/15/14	18:31		1	500 mL	HNO3	YES	YES		✓
500 mL AG	12/15/14	18:31		4	500 mL	None	YES	NO		✓
40 mL vial	12/15/14	18:31		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	12/15/14	18:31		1	500 mL	None	YES	NO		✓
250mL polys	12/15/14	18:31		1	250 mL	None	YES	NO		✓
250mL polys	12/15/14	18:31		1	250 mL	None	YES	Yes		✓
1L AG	12/15/14	18:31		2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type	BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	500 mL HDPE	(Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba))
	500 mL AG	(PAHs) (TPH-D)
	40 mL vial	(VOCs)
	Lg OJ HDPE	(TDS) (Chloride)
	250 mL polys	(LL Hg)
	1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 18:05 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (mS/cm ~~µS/cm~~)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	18:11	1.8	8.62	6.91	43.2	7.848	11.45	8.13	-97.5	~~clear~~ cloudy,
2	18:14	2.7	8.78	6.78	25.0	7.871	11.50	8.05	-96.5	yellowish
3	18:17	3.6	8.67	6.67	20.1	7.891	11.51	7.70	-97.1	brown
4	18:20	4.5	8.67	6.67	13.7	7.908	11.50	7.91	-98.7	↓
5	18:23	5.4	8.67	6.56	8.89	7.931	11.52	8.71	-99.6	
6	18:25	6.3	8.67	6.46	8.17	7.950	11.55	8.16	-99.3	
7	18:28	7.2	8.67	6.61	~~87.9~~	7.967	11.58	7.86	-99.5	✓
8	:		.	.			.			
9	:		.	.			.			
10	:		.	.		NK	.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): Turbidity after sample collection (NTU): 0.53

Comments: soft bottom

SAMPLER: NORA KOCTILE
(PRINTED NAME)

(SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** CMW-2

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** CMW-2-121514

DUP ID: —

WIND FROM:	N	NE	E	(SE)	S	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		(CLOUDY)		RAIN		**TEMPERATURE:**	(°F) 4/4	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/15/14	17:46	18.0	---	11.02	---	.	X 1	.
1/4	"	"	---	"	---	"	X 3	.

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: 15' [√ if used]

Bottle Type	Date	Time	Method	Amount	Volume mL	Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/15/14	18:30	B	1	500 mL	HNO3	YES	NO		√
500 mL HDPE	"	"	"	1	500 mL	HNO3	YES	YES		√
500 mL AG	"	"	"	4	500 mL	None	YES	NO		√
40 mL vial	"	"	"	3	40 mL	HCl	YES	NO		√
Lg OJ HDPE	"	"	"	1	500 mL	None	YES	NO		√
250mL polys	"	"	"	1	250 mL	None	YES	NO		√
250mL polys	"	"	"	1	250 mL	None	YES	Yes		√
1L AG	"	"	"	2	1 L	None	YES	NO		√
Total Bottles (include duplicate count):				14						

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	(Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba))
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 17:54 Depth of tubing (ft btoc): 15'

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
58 1	~~18:03~~	1.2 L	11.42	7.12	7.27	3690	9.9	9.39	51.4	clear, colorless
2	18:02	2.4 L	11.48	7.30	8.29	3984	9.8	9.03	43.7	" "
3	18:06	3.6 L	11.48	7.46	7.25	3974	9.8	8.95	41.5	" "
4	18:10	4.8 L	11.49	7.57	4.25	4052	9.7	8.96	40.7	" "
5	18:14	6.0 L	11.48	7.61	3.89	4101	9.7	8.77	41.1	" "
6	18:18	7.2 L	11.48	7.63	4.14	4109	9.8	8.62	41.2	" "
7	:		.	.			.			
8	:		.	.			.			
9	:		.	.			.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters]

Turbidity before sample collection (NTU): 4.14 [Clarity, Color] **Turbidity after sample collection (NTU):** 1.89

Comments:

SAMPLER: Doug Laffoon (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: ~~SLR-T~~ CMW-3

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: CMW-3-20141218

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN		TEMPERATURE:	°F 48 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/18/14	19:40	17.0	---	12.6	---	4.4	X 1	0.72
/ /	:	5ft	---	.	---	.	X 3	2.15

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/18/14	20:20	B	1	500 mL	HNO3	YES	NO		—
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		—
500 mL AG	/ /	:		4	500 mL	None	YES	NO		—
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		—
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		—
250mL polys	/ /	:		1	250 mL	None	YES	NO		—
250mL polys	/ /	:		1	250 mL	None	YES	Yes		—
1L AG	/ /	:		2	1 L	None	YES	NO		—

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 19:40 0.3 L/min Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume (L)	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (mS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	19:45	1.5	12.9	7.20	52.2	4.134	12.98	9.01	-52.9	slightly whitish cloudy
2	19:50	3.0	12.1	7.25	22.6	4.206	13.16	8.57	-82.3	"
3	19:54	4.2	12.0	7.20	7.87	4.203	13.23	8.30	-88.7	Mostly clear
4	19:58	5.4	12.1	7.19	4.40	4.146	13.30	7.86	-98.2	"
5	20:02	6.6	12.1	7.18	2.41	4.064	13.31	7.70	-99.9	"
6	20:06	7.8	12.1	7.18	1.35	3.986	13.33	8.07	-101.7	"
7	20:10	9.0	12.1	7.17	1.07	3.941	13.32	6.96	-104.0	"
8	20:13	9.9	12.1	7.15	1.00	3.913	13.34	7.02	-100.1	"
9	20:16	10.8	12.1	7.14	0.80	3.889	13.35	6.95	-101.0	"
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 0.80 **Turbidity after sample collection (NTU):** 0.39

Comments: 2.34 gal/10.8 L Purged before sample
Well mount lid has no bolts

SAMPLER: Evan Merkey II
(PRINTED NAME)

(SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** CMW-4

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** CMW-4-121814

DUP ID:

WIND FROM: N | NE | E | SE | S | SW | W | NW (circled) | LIGHT (circled) | MEDIUM | HEAVY

WEATHER: SUNNY | PRTLY CLOUDY | CLOUDY | RAIN (circled) **TEMPERATURE:** °F (circled) 48 . °C
(Circle appropriate units)

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
12/18/14	20:20	18.4	---	12.48	---	5.92	X 1	0.96
/ /	:	.	---	.	---	.	X 3	2.89

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | 2" = 0.163 (circled) | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer | Sampled via: (1) Low-flow (circled) (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL	Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/18/14	21:10	B	500 mL	HNO3	YES	NO		
500 mL HDPE	/ /	:		500 mL	HNO3	YES	YES		
500 mL AG	/ /	:		500 mL	None	YES	NO		
40 mL vial	/ /	:		40 mL	HCl	YES	NO		
Lg OJ HDPE	/ /	:		500 mL	None	YES	NO		
250mL polys	/ /	:		250 mL	None	YES	NO		
250mL polys	/ /	:		250 mL	None	YES	Yes		
1L AG	/ /	:		1 L	None	YES	NO		

Total Bottles (include duplicate count):

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable ~~or write non-standard analysis below~~)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) ~~(TPH-D)~~
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 20 : 20 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	20:23	1.35	12.81	7.40	11.12	13222	11.9	6.06	16.4	Clear, colorless
2	20:26	2.7	12.74	7.39	10.94	13538	11.9	5.32	21.2	
3	20:29	4.05	12.85	7.40	8.31	13540	12.0	5.28	21.9	
4	20:32	5.40	12.86	7.40	11.16	13585	11.9	4.89	23.1	
5	20:35	6.75	12.82	7.40	11.04	13585	12.0	4.59	24.1	
6	20:38	8.10	12.85	7.41	15.24	13577	12.0	4.55	25.2	
7	20:41	9.45	12.87	7.41	17.90	13523	12.0	4.51	26.7	
8	20:44	10.80	12.92	7.41	9.47	13528	12.0	4.41	27.3	
9	20:47	12.15	12.92	7.41	8.73	13499	12.1	4.37	28.3	
10	20:50		12.94	7.42	4.68	13501	12.1	4.34	29.0	
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 4.58 **Turbidity after sample collection (NTU):** 2.38

Comments: pumping @ 0.45 L/min

SAMPLER: Kellee Christensen & Doug Lefton (PRINTED NAME) Kellee C (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** CMW-5

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** CMW-5-12222014

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN		TEMPERATURE:	°F 50 .	°C

(Circle appropriate units)

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/22/14	21 : 20	~~13.48~~	---	13.48	---	6.11	X 1	0.99
/ /	:	19.59	---	.	---	.	X 3	2.98

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer | Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative (circle)	Ice	Filter	pH	√
500 mL HDPE	12/22/14	10 : 05	B	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:			500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:		4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	Yes		✓
1L AG	/ /	:		2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type	BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
	500 mL AG	(PAHs) (TPH-D)
	40 mL vial	(VOCs)
	Lg OJ HDPE	(TDS) (Chloride)
	250 mL polys	(LL Hg)
	1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 21 : ~~23~~ 0.25 L/min Depth of tubing (ft btoc): ~~0.72~~ 0.72 Dm

Meas.	Time	Cum. Volume (L)	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	~~21~~ :29		13.64	7.28	3.93	0.494	15.69	2.04	61.4	mostly clear
2	21 :35	3	13.73	6.17	2.58	0.493	15.89	1.16	40.8	"
3	21 :38	3.75	13.82	6.05	~~2~~ 2.36	0.494	16.02	0.94	20.3	"
4	21 :41	4.50	13.95	6.12	1.43	0.501	16.13	0.75	4.0	"
5	21 :45	5.50	14.02	6.21	1.58	0.503	16.15	0.74	-6.0	"
6	21 :49	5.50	14.05	6.40	1.65	0.502	16.17	0.68	-13.9	"
7	21 :53	6.50	14.12	6.60	1.81	0.497	16.19	0.62	-22.9	"
8	21 :57	7.50	14.23	6.73	2.37	0.488	16.16	0.58	-29.0	"
9	10 :02	8.75	14.37	6.69	2.23	0.487	16.30	0.51	-33.1	"
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 2.23 **Turbidity after sample collection (NTU):** 0.72

Comments: very soft bottom

SAMPLER: Evan Makezyk (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: CMW-6

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: CMW-6-121614

DUP ID:

WIND FROM:	N	NE	E	SE	S	(SW)	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN		TEMPERATURE:	(°F) 51 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/16/14	18:41	20.31	---	12.02	---	8.29	X 1	1.35
/ /	:	.	---	.	---	.	X 3	4.05

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | (2") = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer | Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/16/14	19:15	Bi	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:		4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	Yes		✓
1L AG	↓ /	↓ :	↓	2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	(Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba))
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 18:41 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	18:50	1.8 L	12.52	7.47	4.74	10893	12.47	8.54	-103.3	clear, colorless, no odor
2	18:53	2.4 L	12.61	7.50	3.11	11132	12.58	8.45	-107.2	
3	18:56	3.0 L	12.74	7.50	2.29	~~11238~~ 11123	12.65	8.26	-108.1	
4	19:00	3.6 L	12.81	7.50	1.48	11349	12.63	8.24	-108.5	
5	:		.	.			.			
6	:		.	.			.			
7	:		.	.			.			
8	:		.	.			.			
9	:		.	.			.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 1.48 Turbidity after sample collection (NTU): 0.51

Comments: soft bottom, pumping @ 0.2 L/min

SAMPLER: Kellee Christensen (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: CMW-7

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: CMW-7-20141216

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN		TEMPERATURE:	(°F) 45 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/16/14	18:30	19.85	---	13.09	---	6.76	X 1	1.10
/ /	:	.	---	.	---	.	X 3	3.30

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/16/14	18:49		1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	12/16/14	18:49		1	500 mL	HNO3	YES	YES		✓
500 mL AG	12/16/14	18:49		4	500 mL	None	YES	NO		✓
40 mL vial	12/16/14	18:49		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	12/16/14	18:49		1	500 mL	None	YES	NO		✓
250mL polys	12/16/14	18:49		1	250 mL	None	YES	NO		✓
250mL polys	12/16/14	18:49		1	250 mL	None	YES	Yes		✓
1L AG	12/16/14	18:49		2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(Lt Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 18:31 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (mS/cm ~~µS/cm~~)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	18:37	1.8	13.15	6.96	9.94	4.336	13.24	6.80	-17.2	clear
2	18:40	3.0	13.15	6.80	6.09	3.916	13.39	6.04	-15.8		
3	18:43	4.2	13.15	6.72	6.02	3.777	13.50	5.68	-14.0		
4	18:46	5.4	13.16	6.67	2.98	3.711	13.57	5.20	-12.7		
5	:		.	.			.			
6	:		.	.			.			
7	:		.	.	NK		.			
8	:		.	.			.			
9	:		.	.			.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): Turbidity after sample collection (NTU):

Comments: soft bottom

SAMPLER: NORA KOCHIE (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. | WELL ID: DMW2

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 | SAMPLE ID: DMW2-20141216

DUP ID: DMW52-20141216

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN		TEMPERATURE: (°F) 45 . °C		

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/16/14	12:05	19.00	---	9.11	---	9.89	X 1	1.61
/ /	:	.	---	.	---	.	X 3	4.84

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer | Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA

Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/16/14	12:36		X 2	500 mL	HNO3	YES	NO		✓
500 mL HDPE	12/16/14	12:36		X 2	500 mL	HNO3	YES	YES		✓
500 mL AG	12/16/14	12:36		X 8	500 mL	None	YES	NO		✓
40 mL vial	12/16/14	12:36		36	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	12/16/14	12:36		X 2	500 mL	None	YES	NO		✓
250mL polys	12/16/14	12:36		X 2	250 mL	None	YES	NO		✓
250mL polys	12/16/14	12:36		X 2	250 mL	None	YES	Yes		✓
1L AG	12/16/14	12:36		X 1	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): X 28

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA

Purge Start Time: 12:09

Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (mS/cm ~~µS/cm~~)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	12:14	1.5	9.01	6.13	10.2	0.410	15.34	12.10	-71.3	yellowish
2	12:18	2.7	9.01	6.31	7.06	0.370	15.39	3.88	-99.9	small particulates
3	12:22	3.9	9.01	6.35	4.13	0.358	15.47	3.32	-112.5	
4	12:26	5.1	9.01	6.38	3.23	0.347	15.52	3.58	-114.9	
5	12:30	6.3	9.01	6.38	2.47	0.345	15.56	3.24	-117.6	
6	12:34	7.5	9.01	6.38	2.50	0.342	15.54	2.63	-118.1	
7	:		.	.			.			
8	:		.	.			.			
9	:		.	.	NM		.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): Turbidity after sample collection (NTU):

Comments: Soft bottom, slight sheen

SAMPLER: NIKKA KOCHIE (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** DMW-3

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** DMW-3-121814

DUP ID:

WIND FROM: N | NE | E | (SE) | S | SW | W | NW (circled) — LIGHT (circled) | MEDIUM | HEAVY

WEATHER: SUNNY | PRTLY CLOUDY | (CLOUDY) | (RAIN) **TEMPERATURE:** (°F) 50. °C
[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product [Product Thickness]	DT-Water	DTP-DTW	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
12/18/14	14:56	19.46	---	8.94	---	10.52	X 1	1.71
/ /	:	.	---	.	---	.	X 3	5.14

Gal/ft = (dia./2)² x 0.163	1" = 0.041	(2" = 0.163)	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer — Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth:

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative (circle)	Ice	Filter	pH	√ if used
500 mL HDPE	12/18/14	15:45	B1	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:		4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	Yes		✓
1L AG	/ /	:		2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL-Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 14:56 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume [gallons or liters]	DTW (ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity) [Clarity, Color]
1	15:02	~~8~~ 1.5	8.93	5.57	5.05	413	14.02	3.40	79.0	clear, faint yellow
2	15:05	2.25	8.94	6.00	3.83	407	14.48	1.52	60.7	color, slight odor
3	15:08	3.0	8.94	6.19	3.73	405	14.64	1.12	56.1	(sulfide)
4	15:11	3.75	8.95	6.28	3.27	404	14.72	0.97	44.1	
5	15:14	4.5	8.95	6.28	2.65	404	14.81	0.88	39.2	
6	15:17	5.25	8.96	6.30	5.10	405	14.92	0.73	39.5	
7	15:20	6.0	8.96	6.29	2.82	402	14.98	~~0.66~~	32.5	DO = 0.66
8	15:23		8.97	6.31	4.00	403	14.98	0.63	33.2	
9	:		.	.			.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

Turbidity before sample collection (NTU): **Turbidity after sample collection (NTU):** 0.96

Comments: soft bottom, pumping @ 0.25 L/min

SAMPLER: Kellee Christensen (PRINTED NAME) Kellee Christensen (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** DMW-6A

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** DMW-6A-121714

DUP ID: —

WIND FROM:	N	NE	E	SE	(S)	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		(CLOUDY)		(RAIN)		**TEMPERATURE:**	(°F) 45	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		[Water Column x Gal/ft] Volume (gal)
12/17/14	17:10	19.95	---	10.56	---	9.39	X 1	1.53
/ /	:	.	---	.	---	.	X 3	4.59

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | (2" = 0.163) | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer | Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: 17'

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	[√ if used]
500 mL HDPE	12/17/14	18:10	B	1	500 mL	HNO3	YES	NO		√
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		√
500 mL AG	/ /	:		4	500 mL	None	YES	NO		√
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		√
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		√
250mL polys	/ /	:		1	250 mL	None	YES	NO		√
250mL polys	/ /	:		1	250 mL	None	YES	Yes		√
AG	/ /	:		2	1 L	None	YES	NO		√

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (NWTPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 17:22 Depth of tubing (ft btoc): 17'

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	17:26	1.6 l	10.71	7.36	46.60	344.0	14.7	0.69	-123.5	Almost clear
2	17:30	3.2 l	10.80	7.10	19.56	300.5	14.7	0.62	-113.6	clear colorless
3	17:34	4.8 l	10.87	6.96	11.54	290.3	14.7	0.56	-110.1	" "
4	17:38	6.4 l	10.92	6.92	8.87	288.4	14.7	0.46	-109.4	" "
5	17:42	8.0 l	10.98	6.88	7.31	287.1	14.7	0.36	-108.6	" "
6	17:46	9.6 l	11.04	6.86	6.52	287.2	14.7	0.33	-105.5	" "
7	17:50	11.2 l	11.10	6.83	5.50	287.5	14.7	0.30	-99.3	" "
8	17:54	12.8 l	11.16	6.83	4.66	287.3	14.7	0.29	-97.5	" "
9	17:58	14.4 l	11.21	6.83	5.27	285.6	14.7	0.28	-97.2	" "
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 5.27 **Turbidity after sample collection (NTU):** 6.88

Comments:

SAMPLER: Doug Laffoon (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. | WELL ID: EMW-15

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 | SAMPLE ID: EMW-15-121514

DUP ID: —

WIND FROM: N | NE | E | SE | (S) | SW | W | NW | (LIGHT) | MEDIUM | HEAVY

WEATHER: SUNNY | PRTLY CLOUDY | (CLOUDY) | RAIN | TEMPERATURE: (°F) 47 °C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW		[Water Column x Gal/ft] Volume (gal)
12/15/14	12:26	19.8	---	7.95	---	11.85	X 1	1.93
↑	↓	↓	---	↓	---	↓	X 3	5.79

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | (2" = 0.163) | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer | Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA

Sample Depth:

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	[√ if used] √
500 mL HDPE	12/15/14	14:00	B	~~2~~ 1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	〃	〃	〃	~~2~~ 1	500 mL	HNO3	YES	YES		✓
500 mL AG	〃	〃	〃	~~2~~ 4	500 mL	None	YES	NO		✓
40 mL vial	〃	〃	〃	3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	〃	〃	〃	1	500 mL	None	YES	NO		✓
250mL polys	〃	〃	〃	1	250 mL	None	YES	NO		✓
250mL polys	〃	〃	〃	1	250 mL	None	YES	Yes		✓
1L AG	〃	〃	〃	2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA

Purge Start Time: ~~12:27~~ 12:43 | Depth of tubing (ft btoc): 18'

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	12:47	0.8 L	8.67	6.53	155.7	536.4	12.4	3.54	14.4	light tan cloudy
2	12:51	1.6 L	8.90	6.44	135.4	535.0	12.4	3.60	10.1	〃 〃 〃
3	12:55	2.4 L	9.16	6.49	208.7	533.6	12.4	3.60	13.4	〃 〃 〃
4	12:59	3.0 L	9.16	6.52	224.4	532.7	12.1	3.77	19.0	light brown cloudy
5	13:03	3.6 L	9.16	6.53	196.8	532.3	12.1	3.40	21.4	〃 〃 〃
6	13:07	4.2 L	9.16	6.55	179.1	532.7	12.1	3.33	24.4	〃 〃 〃
7	13:11	4.8 L	9.07	6.56	166.5	531.4	12.2	3.26	25.9	light tan cloudy
8	13:15	5.4 L	9.09	6.57	164.2	532.7	12.2	3.20	25.2	〃 〃 〃
9	13:19	6.0 L	9.14	6.57	155.8	532.0	12.3	3.23	25.5	〃 〃 〃
10	13:23	6.6 L	9.17	6.57	137.2	532.1	12.4	3.06	20.5	〃 〃 〃
11	13:27	7.2 L	9.16	6.57	114.0	531.0	12.3	2.70	7.6	very light tan cloudy
12	13:31	7.8 L	9.17	6.55	81.22	530.7	12.3	2.48	-0.1	tan tint

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 25.38 | Turbidity after sample collection (NTU): 20.87

Comments:

pg 1 of

SAMPLER: Doug Luffman (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle WA 98101

Office: (206) 287-9130 Fax: (206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** EMW-15

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **BLIND ID:** EMW-15-121514

PROJECT NUMBER: 131044-01.01 **DUP ID:** —

WATER QUALITY DATA | Purge Start Time: 12:43 | Method: Low Flow Peristaltic Pump | Pump/Bailer Inlet Depth:

Time	DTW (ft)	Purge ~~(gal)~~ (Cummulative Totals)	pH	E Cond (µS)	~~°F~~ Temp °C (circle units)	DO (mg/L)	ORP	TDS	Salinity	Turbidity	Water Quality (Clarity, Color)
1335	9.15	8.4 L	6.55	527.2	12.3	2.21	-11.5	—	—	45.21	almost clear
1339	9.14	9.0 L	6.55	526.6	12.3	2.11	-16.5	—	—	29.22	" "
1343	9.14	9.6 L	6.54	526.6	12.3	2.07	-20.1	—	—	24.80	" "
1347	9.14	10.2 L	6.56	528.1	12.3	1.99	-22.1	—	—	24.21	" "
1351	9.13	10.8 L	6.54	529.0	12.3	1.96	-23.4	—	—	26.86	" "
1355	9.13	11.4 L	6.55	529.0	12.3	2.01	-23.1	—	—	25.38	" "

Notes:

pg 2 of

Sampler: Doug Laffoon (Printed Name) (Signature)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** EMW-25

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** EMW-25-121714

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN		TEMPERATURE:	°F . °C	

(Circle appropriate units)

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW		[Water Column x Gal/ft] Volume (gal)
12/17/14	19 : 16	19.54	---	6.91	---	12.63	X 1	2.06
/ /	:	.	---	.91	---	.	X 3	6.18

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth:

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative (circle)	Ice	Filter	pH	[√ if used] √
500 mL HDPE	12/17/14	20 : 00	B	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:		4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	Yes		✓
1L AG	/ /	:	✓	2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 19 : 16 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	19:20	1.0	7.25	6.29	24.0	493	13.15	3.90	33.0	clear, colorless
2	19:23	1.75	7.32	6.28	20.8	497	13.36	2.01	23.7	slight odor
3	19:26	2.5	7.41	6.27	19.5	500	13.41	1.44	20.6	
4	19:29	3.25	7.44	6.25	20.5	503	13.50	1.09	18.9	
5	19:31	4.0	7.46	6.24	19.0	503	13.56	0.86	18.0	
6	19:34	4.75	7.51	6.24	18.0	503	13.59	0.73	17.3	
7	19:37	5.5	7.51	6.23	18.6	503	13.58	0.73	16.6	
8	19:40	6.25	7.58	6.22	19.2	502	13.59	0.76	16.1	
9	:		.	.			.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters]

Turbidity before sample collection (NTU): **Turbidity after sample collection (NTU):** 4.9 [Clarity, Color]

Comments: Soft bottom, pumping at 0.25L/min drop in DTW contributed to tide going out

SAMPLER: Kellee Christensen (PRINTED NAME) Kellee Chr (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** EMW-3S

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** EMW-3S-121514

DUP ID: ~~

WIND FROM: N | NE | E | SE | S | SW | W | NW | LIGHT | MEDIUM | HEAVY

WEATHER: SUNNY | (PRTLY CLOUDY) | CLOUDY | RAIN **TEMPERATURE:** (F) 52 . °C [Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
12/15/14	17:59	19.94	---	10.42	---	9.52	X1	1.55
/ /	:	.	---	.	---	.	X3	4.66

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | (2" = 0.163) | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/15/14	18:30	B	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:		4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	Yes		✓
1L AG	/ /	:	↓	2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	(Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba))
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: : Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	18:03	1.2L	10.64	6.17	7.32	7830	12.00	7.53	123.4	Clear, Colorless,
2	18:06	2.1L	10.76	6.17	4.10	7970	12.05	6.84	108.7	odorless
3	18:09	3.0L	10.88	6.13	2.61	8069	12.10	6.64	102.2	
4	18:12	3.9L	10.90	6.12	1.31	8113	12.11	6.39	97.5	
5	18:15	4.8L	11.01	6.11	0.73	8135	12.15	6.28	92.8	
6	:		.	.			.			
7	:		.	.			.			
8	:		.	.			.			
9	:		.	.			.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 0.73 **Turbidity after sample collection (NTU):** 0.37

Comments: Soft Bottom, pumping @ 0.34 min

SAMPLER: Kellee Christensen (PRINTED NAME) Kellee Chr (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: EMW-4D

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: EMW-4D-20141215

DUP ID:

WIND FROM: N | NE | E | SE | S | SW | W | NW (LIGHT) | MEDIUM | HEAVY

WEATHER: SUNNY | PRTLY CLOUDY | (CLOUDY) | RAIN TEMPERATURE: (°F) 45 . °C (Circle appropriate units)

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/15/14	15:49	49.41	---	9.46	---	39.95	X 1	6.51
/ /	:	.	---	.	---	.	X 3	19.53

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative (circle)	Ice	Filter	pH	√
500 mL HDPE	12/15/14	16:28		1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	12/15/14	16:28		1	500 mL	HNO3	YES	YES		✓
500 mL AG	12/15/14	16:28		4	500 mL	None	YES	NO		✓
40 mL vial	12/15/14	16:28		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	12/15/14	16:28		1	500 mL	None	YES	NO		✓
250mL polys	12/15/14	16:28		1	250 mL	None	YES	NO		✓
250mL polys	12/15/14	16:28		1	250 mL	None	YES	Yes		✓
1L AG	12/15/14	16:28		2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 15 : 54 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond ~~(µS/cm)~~ mS/cm	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	15:59	1.5	11.10	6.38	5.56	5.624	12.86	4.22	-117.5	clear
2	16:04	3.0	12.061	6.54	12.0	5.923	12.84	3.32	-137.2	clear
3	16:08	4.2	10.65	6.59	8.04	5.971	12.83	2.91	-144.4	
4	16:12	5.4	10.65	6.62	5.13	6.054	12.78	3.01	-142.8	
5	16:16	6.6	10.71	6.64	3.97	6.35	12.81	3.12	-146.6	
6	:		.	.			.			
7	:		.	.			.			
8	:		.	.	NM		.			
9	:		.	.			.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): Turbidity after sample collection (NTU):

Comments: soft bottom, moderate H_2S odor

SAMPLER: NORA KOCHIE (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: EMW-55A

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: EMW-55A-121514

DUP ID: —

WIND FROM:	N	NE	E	SE	(S)	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		(CLOUDY)		RAIN		TEMPERATURE:	(°F) 47.	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/15/14	15:34	19.94	---	9.54	---	10.40	X 1	1.70
/ — /	:	.	---	.	---	.	X 3	5.10

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | (2" = 0.163) | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA

Sample Depth: 18'

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	[√ if used] √
500 mL HDPE	12/15/14	16:30	B	1	500 mL	HNO3	YES	NO		√
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		√
500 mL AG	/ /	:		4	500 mL	None	YES	NO		√
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		√
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		√
250mL polys	/ /	:		1	250 mL	None	YES	NO		√
250mL polys	/ /	:		1	250 mL	None	YES	Yes		√
1L AG	/ /	:		2	1 L	None	YES	NO		√

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA

Purge Start Time: 15:43 Depth of tubing (ft btoc): 18'

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	15:47	1.6 L	09.71	6.54	30.98	502.4	14.1	0.21	-42.9	tan tint
2	15:51	3.2 L	09.74	6.52	81.55	502.9	14.1	0.22	-47.2	" "
3	15:55	4.8 L	09.76	6.50	61.16	503.1	14.1	0.27	-50.4	" "
4	15:59	6.4 L	09.79	6.49	46.61	502.1	14.0	0.32	-52.6	almost clear
5	16:03	8.0 L	09.84	6.49	25.78	501.3	14.0	0.38	-54.3	" "
6	16:07	9.6 L	09.88	6.49	19.92	501.4	14.1	0.42	-51.2	clear, colorless
7	16:11	11.2 L	09.92	6.49	11.14	500.3	14.1	0.46	-54.5	" "
8	16:15	12.8 L	09.96	6.49	9.24	500.1	14.1	0.49	-57.0	" "
9	16:19	14.4 L	09.98	6.49	9.07	500.6	14.1	0.52	-57.5	" "
10	16:23	16.0 L	10.00	6.49	7.33	501.2	14.1	0.54	-58.7	" "
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 7.33 Turbidity after sample collection (NTU): 5.55

Comments: OTW tidally influenced

SAMPLER: Doug Luff (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: EMW-65

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: EMW-65-20141215

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN		TEMPERATURE:	°F 50 .	°C

(Circle appropriate units)

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW	[Water Column x Gal/ft]	Volume (gal)
12/15/14	12:29	19.61	---	7.35	---	12.26	X 1	1.99
/ /	:	.	---	.	---	.	X 3	5.99

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer | Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth:

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	[√ if used] √
500 mL HDPE	12/15/14	13:33		1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	12/15/14	13:33		1	500 mL	HNO3	YES	YES		✓
500 mL AG	12/15/14	13:33		4	500 mL	None	YES	NO		✓
40 mL vial	12/15/14	13:33		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	12/15/14	13:33		1	500 mL	None	YES	NO		✓
250mL polys	12/15/14	13:33		1	250 mL	None	YES	NO		✓
250mL polys	12/15/14	13:33		1	250 mL	None	YES	Yes		✓
1L AG	12/15/14	13:33		2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 12:34 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond mS/cm (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	12:43	2.7	7.41	4.27	11.2	0.147	10.76	20021.26	175	clear, small particulates
2	12:47	3.9	7.43	4.44	10.6	0.145	10.65	19.12	7.3	clear, small particulates
3	12:50	5.1	7.44	4.77	8.69	0.144	10.61	18.73	-6.9	"
4	12:54	6.3	7.49	5.01	5.50	0.139	10.55	12.61	-18.1	"
5	12:58	7.5	7.47	5.18	5.73	0.136	10.51	6.60	-23.8	"
6	13:02	8.7	7.47	5.43	5.57	0.137	10.60	6.27	-36.7	"
7	13:06	9.9	7.47	5.59	4.00	0.138	10.53	6.57	-45.5	"
8	13:10	11.1	7.47	5.70	3.07	0.138	10.60	6.14	-51.3	"
9	13:14	12.3	7.47	5.80	2.81	0.138	10.62	5.31	-58.1	"
10	13:18	13.5	7.47	5.89	3.17	0.134	10.64	4.88	-62.7	"
11	13:22	14.7	7.47	5.96	2.11	0.133	10.59	5.03	-67.8	"
12	13:26	15.9	7.47	6.00	1.51	0.132	10.59	5.25	-69.6	"

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 15.9 Turbidity after sample collection (NTU): 0.81

Comments: silt bottom

SAMPLER: NORA KOCHIE (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: EMW-7S

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: EMW-7S-20141216

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		(CLOUDY)			(RAIN)	TEMPERATURE:	(°F) 45 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/16/14	14:31	20.02	---	8.92	---	11.1	X 1	1.81
/ /	:	.	---	.	---	.	X 3	5.43

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/16/14	15:11		1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	12/16/14	15:11		1	500 mL	HNO3	YES	YES		✓
500 mL AG	12/16/14	15:11		4	500 mL	None	YES	NO		✓
40 mL vial	12/16/14	15:11		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	12/16/14	15:11		1	500 mL	None	YES	NO		✓
250mL polys	12/16/14	15:11		1	250 mL	None	YES	NO		✓
250mL polys	12/16/14	15:11		1	250 mL	None	YES	Yes		✓
1L AG	12/16/14	15:11		2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write ~~non-standard analysis~~ below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 14:33 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (mS/cm ~~µS/cm~~)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	14:36	1.2	9.38	6.48	109	0.384	14.41	5.44	-26.6	yellowish
2	14:39	2.4	9.57	6.44	105	0.389	14.60	4.42	-54.7	orange,
3	14:41	3.6	9.57	6.42	86.3	0.391	14.67	4.14	-68.4	moderate
4	14:44	4.8	9.57	6.41	57.4	0.390	14.70	3.81	-78.8	particulates
5	14:47	6.0	9.57	6.40	41.3	0.389	14.67	3.34	-83.6	
6	14:50	7.2	9.57	6.40	30.0	0.389	14.73	3.08	-91.8	
7	14:53	8.4	9.57	6.40	27.7	0.389	14.77	3.16	-97.0	
8	14:56	9.6	9.57	6.39	21.5	0.388	14.69	2.93	-101.1	
9	14:59	10.8	9.57	6.40	15.2	0.387	14.67	3.03	-102.6	
10	15:02	12.0	9.57	6.40	11.9	0.386	14.65	2.94	-104.8	
11	15:05	13.2	9.57	6.39	9.44	0.385	14.62	2.69	-105.2	
12	15:08	14.4	9.57	6.39	8.37	0.385	14.65	2.65	-107.3	

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 6.42 Turbidity after sample collection (NTU): 2.83

Comments: Soft bottom

SAMPLER: NORA KOHLE (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: EMW-8S

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: EMW-8S-121714

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN		light		

TEMPERATURE: °F 48 . °C (Circle appropriate units)

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product [Product Thickness]	DT-Water	DTP-DTW	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
12/17/14	17:16	20.29	---	9.~~89~~99	---	10.43	X 1	1.70
/ /	:	.	---	.~~86~~	---	.	X 3	5.10

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer | Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA

Sample Depth:

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative (circle)	Ice	Filter	pH	√ if used
500 mL HDPE	12/17/14	18:05	B1	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:		4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	Yes		✓
1L AG	↓	↓	↓	2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA

Purge Start Time: 17:10 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	17:22	1.5	10.19	6.60	7.53	707	14.01	2.24	-3.8	Clear, colorless,
2	17:25	2.25	10.23	6.38	3.55	598	14.34	1.69	-15.3	no odor
3	17:28	3.0	10.24	6.25	3.07	503	14.47	0.95	-16.5	
4	17:31	3.75	10.28	6.22	1.66	493	14.50	0.95	-16.0	
5	17:34	4.5	10.32	6.19	3.53	484	14.55	0.81	-14.9	
6	17:37	5.25	10.33	6.19	1.76	479	14.63	0.77	-13.6	
7	17:40	6.0	10.38	6.18	1.63	473	14.62	0.77	-12.2	
8	:		.	.			.			
9	:		.	.			.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 1.63 Turbidity after sample collection (NTU): 0.89

Comments: Soft bottom, pumping @ 0.25 L/min

SAMPLER: Kellee Christensen (PRINTED NAME) Kellee Chr (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: EMW-9S

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: EMW-9S-20141217

DUP ID:

WIND FROM:	N	NE	E	SE	S	(SW)	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		(CLOUDY)		(RAIN)		TEMPERATURE:	(°F) 45.	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/17/14	17:09	19.79	---	10.32	---	9.47	X 1	1.544
/ /	:	.	---	.	---	.	X 3	4.630

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/17/14	17~~19~~:50		1	500 mL	HNO3	YES	NO		
500 mL HDPE	12/17/14	17~~19~~:50		1	500 mL	HNO3	YES	YES		
500 mL AG	12/17/14	17~~19~~:50		4	500 mL	None	YES	NO		
40 mL vial	12/17/14	17~~19~~:50		3	40 mL	HCl	YES	NO		
Lg OJ HDPE	12/17/14	17:50		1	500 mL	None	YES	NO		
250mL polys	12/17/14	17:50		~~2~~ 1	250 mL	None	YES	NO		
250mL polys	12/17/14	17:50		1	250 mL	None	YES	Yes		
1L AG	12/17/14	17:50		2	1 L	None	YES	NO		

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 17:24 hrs Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (~~µS/cm~~ mS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	17:29	1.5	10.61	6.38	4.90	0.032	14.97	4.56	-77.5	clear
2	17:33	2.7	10.65	6.39	4.31	0.039	15.47	4.11	-89.8	clear
3	17:34	3.9	10.72	6.39	5.05	0.310	15.55	3.20	-97.0	"
4	17:38	5.1	10.72	6.38	8.90	0.309	15.56	3.15	-101.3	"
5	17:41	6.3	10.72	6.38	9.60	0.309	15.56	2.95	-104.3	"
6	17:45	7.5	10.72	6.39	4.84	0.309	15.54	2.80	-105.8	"
7	:		.	.			.			
8	:		.	.			.			
9	:		.	.	TRP		.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): Turbidity after sample collection (NTU):

Comments: Soft bottom clear 2.28 NTU

SAMPLER: Joseph R. Pursley (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** EMW-100

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** EMW-100-121714

DUP ID: —

WIND FROM:	N	NE	E	SE	S	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		(CLOUDY)		RAIN		**TEMPERATURE:**	(°F) 47 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/17/14	14:17	49.58	---	9.04	---	40.54	X 1	6.61
/ /	:	.	---	.	---	.	X 3	19.82

Gal/ft = (dia./2)² x 0.163	1" = 0.041	(2" = 0.163)	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/17/14	15:15	B1	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:		4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	Yes		✓
1L AG	/ /	:		2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 14:17 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	14:22	1.25L	9.04	6.80	9.36	4850	13.84	2.69	61.9	clear faint yellow
2	14:25	2.0L	9.04	6.72	1.72	6832	14.14	1.42	58.4	color, no odor
3	14:28	2.75L	9.06	6.66	1.70	8815	14.15	1.06	57.8	
4	14:31	3.5L	9.05	6.66	6.31	9127	14.05	0.80	55.1	
5	14:34	4.25L	9.05	6.66	20.6	9244	14.03	0.67	50.7	clear w/small
6	14:37	5.0	9.06	6.67	30.8	9297	14.04	0.57	46.7	white particles
7	14:40	5.75	9.10	6.67	29.7	9395	14.07	0.53	43.7	
8	14:43	6.5	9.12	6.66	26.9	9584	14.02	0.49	40.8	
9	14:46	7.25	9.13	6.65	23.7	9807	14.04	0.45	39.3	
10	14:49	8.0	9.17	6.65	19.1	10257	14.02	0.46	36.3	
11	14:52	8.75	9.19	6.67	15.2	10591	13.98	0.42	34.2	
12	14:55	9.5	9.17	6.64	16.5	10934	14.00	0.40	32.7	

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 16.8 **Turbidity after sample collection (NTU):** 11.0

Comments: Soft bottom, pumping @ 0.25L/min

SAMPLER: Kellee Christensen (PRINTED NAME) Kellee Chr (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle WA 98101

Office: (206) 287-9130 Fax: (206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc.
SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109
PROJECT NUMBER: 131044-01.01

WELL ID: EMW-10D
SAMPLE ~~BEND~~ ID: EMW-10D-121714
DUP ID: —

WATER QUALITY DATA ✓ | Purge Start Time: : | Method: Low Flow Peristaltic Pump | Pump/Bailer Inlet Depth:

Time	DTW (ft)	Purge (~~gal~~)	pH	E Cond (µS)	°F Temp °C	DO (mg/L)	ORP	TDS	Salinity	Turbidity	Water Quality
14:58	9.17	10.25	6.65	11057	13.99	0.38	30.0			16.8	

(Cummulative Totals) (circle units) (Clarity, Color)

Notes:

Sampler: Kellee Christensen
(Printed Name)

Kellee Christensen
(Signature)

FIELD SAMPLING DATA SHEET

ANCHOR QEA
720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: EMW-11S

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: EMW-11S-121614

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN				

TEMPERATURE: (°F) 50 . °C (Circle appropriate units)

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
12/16/14	12:13	20.13	---	8.99	---	11.14	X1	1.82
/ /	:	.	---	.	---	.	X3	5.45

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | (2" = 0.163) | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer | Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth:

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√ if used
500 mL HDPE	12/16/14	13:10	B	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:		4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	Yes		✓
1L AG	/ /	:		2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: : Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	12:18	1.25L	8.99	6.52	218	511	14.33	3.40	28.7	Cloudy, light brown,
2	12:21	2.0L	9.00	6.49	165	477	14.49	1.56	16.7	slight odor
3	12:24	2.75L	9.00	6.49	89.0	462	14.54	1.28	12.0	
4	12:27	3.5L	9.01	6.48	58.3	458	14.53	0.94	6.6	clear w/ brownish
5	12:30	4.25L	9.01	6.46	43.2	457	14.51	0.75	3.2	orange particles
6	12:33	5.0L	9.01	6.47	29.5	456	14.56	0.76	-0.3	
7	12:36	5.75L	9.01	6.47	19.4	457	14.58	0.63	-5.4	
8	12:39	6.5L	9.01	6.46	13.4	456	14.57	1.07	-7.2	
9	12:42	7.25L	9.01	6.45	9.24	457	14.60	1.14	-11.9	
10	12:45	8.0L	9.01	6.45	7.58	456	14.57	1.00	-14.3	
11	12:48	8.25L	9.01	6.45	4.88	456	14.58	1.00	-19.8	
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 4.88 Turbidity after sample collection (NTU): 4.88

Comments: Soft bottom, pumping @ 0.25L/min

SAMPLER: Kellee Christensen (PRINTED NAME) Kellee C (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: ~~EMW2~~ EMW-125

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: EMW-125-20141219

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN		TEMPERATURE:	°F 48 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/19/14	19:32	19.9	---	13.25	---	6.65	X 1	1.08
/ /	:	.	---	.	---	.	X 3	3.25

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA

Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/19/14	:		1	500 mL	HNO3	YES	NO		
500 mL HDPE	12/19/14	:		1	500 mL	HNO3	YES	YES		
500 mL AG	12/19/14	:		4	500 mL	None	YES	NO		
40 mL vial	12/19/14	:		3	40 mL	HCl	YES	NO		
Lg OJ HDPE	12/19/14	:		1	500 mL	None	YES	NO		
250mL polys	12/19/14	:		1	250 mL	None	YES	NO		
250mL polys	12/19/14	:		1	250 mL	None	YES	Yes		
1L AG	12/19/14	:		2	1 L	None	YES	NO		

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA

Purge Start Time: 19:32 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	19:36	1.6	13.33	6.64	1.77	387.5	12.8	1.78	123.7	clear, colorless
2	19:40	3.2	13.38	6.4	.93	372.0	12.7	1.31	132.8	
3	19:44	4.8	13.44	6.33	.90	366.6	12.7	1.16	136.6	
4	19:48	6.4	13.48	6.27	.74	364.1	12.7	1.14	139.5	
5	19:52	8.0	13.52	6.25	.77	361.5	12.7	1.11	141.0	
6	:		.	.			.			
7	:		.	.			.			
8	:		.	.	NR		.			
9	:		.	.			.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): Turbidity after sample collection (NTU):

Comments: soft bottom

SAMPLER: NORA KOENIG (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** EMW-135

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** EMW-135-121614

DUP ID: EMW-635-121614 @1940

WIND FROM:	N	NE	E	SE	(S)	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		(CLOUDY)		RAIN				

TEMPERATURE: (°F) 43 °C (Circle appropriate units)

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/16/14	17:43	19.8	---	10.64	---	9.16	X1	1.49
1	"	"	---	"	---	"	X3	4.47

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | 2" = 0.163 | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA

Sample Depth: 16'

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	[√ if used] √
500 mL HDPE	12/16/14	19:25	B	1	500 mL	HNO3	YES	NO		√
500 mL HDPE	"	"	"	1	500 mL	HNO3	YES	YES		√
500 mL AG	"	"	"	4	500 mL	None	YES	NO		√
40 mL vial	"	"	"	3	40 mL	HCl	YES	NO		√
Lg OJ HDPE	"	"	"	1	500 mL	None	YES	NO		√
250mL polys	"	"	"	1	250 mL	None	YES	NO		√
250mL polys	"	"	"	1	250 mL	None	YES	Yes		√
1L AG	"	"	"	2	1 L	None	YES	NO		√

Total Bottles (include duplicate count): 14 + 14 (DUP) = 28

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA

Purge Start Time: 17:50 Depth of tubing (ft btoc): 16'

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	17:54	1.2 L	11.55	8.15	23.46	9439	9.1	6.78	36.4	almost clear
2	17:58	2.4 L	11.60	8.11	14.38	9494	9.2	5.95	41.7	clear, colorless
3	18:02	3.6 L	11.84	8.09	26.05	9512	9.2	5.73	43.4	almost clear
4	18:06	4.8 L	12.00	8.11	41.25	9541	9.2	5.63	43.6	" "
5	18:10	5.6 L	11.91	8.10	48.03	9550	9.2	5.21	42.0	" "
6	18:14	6.4 L	11.80	8.13	34.67	9570	9.2	4.90	39.5	" "
7	18:18	7.2 L	11.85	8.16	25.13	9570	9.3	4.64	35.9	" "
8	18:22	8.0 L	11.90	8.19	30.10	9553	9.3	4.45	33.7	" "
9	18:26	8.8 L	11.89	8.19	36.70	9564	9.3	4.55	33.8	" "
10	18:30	9.6 L	11.93	8.20	25.03	9551	9.3	4.53	32.2	" "
11	18:34	10.4 L	11.94	8.22	23.43	9501	9.3	4.60	30.6	" "
12	18:39	11.2 L	11.96	8.23	30.69	9482	9.3	4.54	30.2	" "

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): **Turbidity after sample collection (NTU):** pg 1 of 2

Comments:

SAMPLER: Doug Laffoon (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle WA 98101

Office: (206) 287-9130 Fax: (206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc.
SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109
PROJECT NUMBER: 131044-01.01

WELL ID: EMW-135
BLIND ID: EMW-135-121614
DUP ID: —

WATER QUALITY DATA | Purge Start Time: : | Method: Low Flow Peristaltic Pump | Pump/Bailer Inlet Depth:

Time	DTW (ft)	Purge (gal)	pH	E Cond (µS)	°F Temp °C	DO (mg/L)	ORP	TDS	Salinity	Turbidity	Water Quality
1842	11.98	12.0 L	8.23	9478	9.4	4.47	29.8	—	—	22.10	clear, odorless
1846	12.01	12.8 L	8.25	9463	9.4	4.49	29.9	—	—	21.99	" "
1850	12.05	13.6 L	8.24	9476	9.3	4.66	31.3	—	—	29.58	" "
1854	12.06	14.4 L	8.25	9465	9.3	4.54	31.1	—	—	18.76	" "
1858	12.03	15.2 L	8.27	9445	9.3	4.41	30.7	—	—	11.26	" "
1902	12.01	16.0 L	8.27	9446	9.3	4.46	30.8	—	—	9.25	" "
1906	12.03	16.8 L	8.28	9444	9.3	4.56	30.8	—	—	7.80	" "
1910	12.05	17.6 L	8.28	9441	9.3	4.57	30.9	—	—	7.95	" "

(Cummulative Totals) (circle units) (Clarity, Color)

Notes:

pg 2 of 2

Sampler: Doug Laffoon
(Printed Name)

(Signature)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** EMW-140

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** EMW-14D-121614

DUP ID:

WIND FROM:	N	NE	E	SE	S	(SW)	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		(CLOUDY)		RAIN		**TEMPERATURE:** (°F) 50 . °C		

(Circle appropriate units)

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
12/16/14	16:36	48.59	---	10.86	---	37.73	X 1	6.15
/ /	:	.	---	.	---	.	X 3	18.45

Gal/ft = (dia./2)² x 0.163	1" = 0.041	(2" = 0.163)	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth:

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	[√ if used] √
500 mL HDPE	12/16/14	18:00	B1	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:		4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	Yes		✓
1L AG	/ /	:		2	1 L	None	YES	NO		✓
Total Bottles (include duplicate count):				14						

Analysis Allowed per Bottle Type

BOTTLE TYPE	~~ANALYSIS ALLOWED PER BOTTLE TYPE~~ (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 16:30 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	16:41	1.25L	11.01	6.70	4.20	6963	14.37	6.63	-127.3	clear, colorless
2	16:44	2.0L	11.04	6.78	16.20	8077	14.62	4.89	-133.1	slight ocean odor
3	16:47	2.75L	11.12	6.78	103	8770	14.66	5.82	-125.3	clear, with
4	16:50	3.5L	11.21	6.79	204	9225	14.60	7.15	-120.1	white particles cloudy white
5	16:53	4.25L	11.25	6.82	329	8757	14.60	7.72	-123.2	cloudy white w/ ors
6	16:56	5.0L	11.27	6.80	514	9702	14.57	7.72	-113.3	sparkly, orange, cloudy
7	16:59	5.75L	11.30	6.81	201	9614	14.61	4.08	-133.5	
8	17:02	6.5L	11.40	6.81	115	9863	14.56	3.92	-125.4	
9	17:05	7.25L	11.52	6.82	62.3	9975	14.48	5.54	-126.2	
10	17:08	8.0L	11.55	6.82	34.6	10171	14.47	7.48	-119.3	clear, colorless small particles
11	17:11	8.75L	11.54	6.82	24.2	10221	14.41	8.52	-119.5	
12	17:14	9.5L	11.62	6.82	18.1	10322	14.43	8.81	-128.8	clear, colorless small particles

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 7.53 **Turbidity after sample collection (NTU):** 5.38 2nd page

Comments: 50ft column, pumping @ 0.25L/min

SAMPLER: Kellee Christensen (PRINTED NAME) Kellee C (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle WA 98101

Office: (206) 287-9130 Fax: (206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** EMW-14D

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE **~~BLIND~~ ID:** EMW-14D-121614

PROJECT NUMBER: 131044-01.01 **DUP ID:**

WATER QUALITY DATA			Purge Start Time: :			Method: Low Flow Peristaltic Pump				Pump/Bailer Inlet Depth:	
Time	DTW (ft)	Purge (~~gal~~ L)	pH	E Cond (µS)	°F Temp (°C)	DO (mg/L)	ORP	TDS	Salinity	Turbidity	Water Quality
17:17	11.66	10.25	6.83	10367	14.38	9.47	-123.4			18.5	
17:20	11.65	11.0	6.82	10415	14.38	8.35	-119.3			14.3	
17:23	11.75	11.75	6.82	10457	14.38	8.10	-126.3			13.2	
17:26	11.79	12.5	6.82	10457	14.36	8.22	-124.2			11.3	
17:29	11.85	13.25	6.83	10496	14.41	7.75	-123.7			9.61	
17:32	11.90	14.0	6.82	10554	14.41	3.34	-124.2			9.89	
17:35	11.98	14.75	6.83	10552	14.40	2.97	-118.9			7.76	
17:38	11.98	15.5L	6.83	10534	14.43	3.03	-118.6			7.53	
		(Cummulative Totals)			(circle units)						(Clarity, Color)

Notes: Water drop contributed to tide going out

Sampler: Kellee Christensen *(Printed Name)*

Kellee Ch *(Signature)*

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: EMW-150

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: EMW-150-121814

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN				

TEMPERATURE: °F 48 . °C (Circle appropriate units)

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
12/18/14	18:23	49.50	---	11.52	---	37.98	X 1	6.19
/ /	:	.	---	.	---	.	X 3	18.57

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA

Sample Depth:

Bottle Type	Date	Time	Method	Amount & Volume mL	Preservative (circle)	Ice	Filter	pH	[√ if used] √
500 mL HDPE	12/18/14	19:15	B	500 mL	HNO3	YES	NO		
500 mL HDPE	/ /	:		500 mL	HNO3	YES	YES		
500 mL AG	/ /	:		500 mL	None	YES	NO		
40 mL vial	/ /	:		40 mL	HCl	YES	NO		
Lg OJ HDPE	/ /	:		500 mL	None	YES	NO		
250mL polys	/ /	:		250 mL	None	YES	NO		
250mL polys	/ /	:		250 mL	None	YES	Yes		
1L AG	/ /	:		1 L	None	YES	NO		

Total Bottles (include duplicate count):

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	~~Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)~~
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA

Purge Start Time: 18:23

Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	18:27	1.8	11.76	7.57	11.81	~~755.3~~	13.2	1.08	-9.6	clear colorless
2	18:30	3.15	11.87	7.40	9.80	4117	13.2	0.73	-3.9	
3	18:33	4.50	11.89	7.31	~~19.60~~	4119	13.1	0.56	-0.9	
4	18:36	5.85	11.94	7.23	8.33	4148	13.0	0.45	-0.3	
5	18:39	7.2	12.03	6.89	10.03	9543	12.9	0.40	-2.8	
6	18:42	8.55	12.05	6.93	9.64	11433	12.8	0.37	-27.0	
7	18:45	9.90	12.13	6.94	9.73	11525	12.7	0.31	-44.0	
8	18:48	11.25	12.20	6.94	10.19	11465	12.8	0.31	-46.5	
9	18:51	12.60	12.23	6.93	6.91	11506	12.8	0.30	-49.7	
10	18:54	13.95	12.27	6.93	~~7.84~~	11464	12.8	0.29	-52.3	TURB 7.84
11	18:57	14.30	12.32	6.93	7.84 6.19	11295	12.8	0.28	-55.4	
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 6.19 Turbidity after sample collection (NTU): 7.60

Comments: Pumping @ 0.45 L/min
1.35

SAMPLER: Kellee Christenson & Doug La Fazia
(PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** EMW-16D

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** EMW-16D-20141216 20141216

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN		TEMPERATURE:	°F .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/16/14	16:39	47.20	---	11.53	---	35.67	X 1	5.81
/ /	:	.	---	.	---	.	X 3	17.44

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/16/14	17:27		1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	12/16/14	17:27		1	500 mL	HNO3	YES	YES		✓
500 mL AG	12/16/14	17:27		4	500 mL	None	YES	NO		✓
40 mL vial	12/16/14	17:27		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	12/16/14	17:27		1	500 mL	None	YES	NO		✓
250mL polys	12/16/14	17:27		1	250 mL	None	YES	NO		✓
250mL polys	12/16/14	17:27		1	250 mL	None	YES	Yes		✓
1L AG	12/16/14	17:27		2	1 L	None	YES	NO		✓
Total Bottles (include duplicate count):				14						

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	(Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba))
500 mL AG	((PAHs) (TPH-D))
40 mL vial	((VOCs))
Lg OJ HDPE	((TDS) (Chloride))
250 mL polys	((LL Hg))
1L AG	((PCBs))

WATER QUALITY DATA Purge Start Time: 16:43 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond mS/cm ~~µS/cm~~	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	16:49	2.7	11.48	6.46	1.38	8.126	13.57	2.27	90.2	clear
2	16:53	4.3.9	11.87	6.55	1.26	13.20	13.66	0.85	74.2	
3	16:57	5.1	11.87	6.44	1.39	26.98	13.52	0.69	73.6	
4	17:01	6.3	11.57	6.50	1.46	27.59	13.52	0.58	62.0	
5	17:05	7.5	12.11	6.52	1.35	27.69	13.46	0.61	54.7	
6	17:09	8.7	12.19	6.53	0.69	27.54	13.43	0.48	45.7	
7	17:13	9.9	12.20	6.54	0.88	27.73	13.40	0.46	40.7	
8	17:17	11.1	12.34	6.54	0.47	27.64	13.35	0.46	33.1	
9	17:21	12.3	12.42	6.54	0.73	27.76	13.37	0.48	27.8	
10	17:25	13.5	12.48	6.54	0.36	27.62	13.31	0.40	23.5	
11	:		.	.	NL		.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): **Turbidity after sample collection (NTU):** 0.19

Comments: Soft bottom

SAMPLER: Nora Kachik
(PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** EMW-175

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** EMW-175-20141218

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN		TEMPERATURE:	°F 50 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
12/18/14	14:40	20.0	---	8.50	---	11.5	X1	1.87
/ /	:	Hard T	---	.	---	.	X3	5.62

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: 19'

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√ [√ if used]
500 mL HDPE	12/18/14	15:30	B	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	12/18/14	15:30		1	500 mL	HNO3	YES	YES		✓
500 mL AG	12/18/14	15:30		4	500 mL	None	YES	NO		✓
40 mL vial	12/18/14	15:30		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	12/18/14	15:30		1	500 mL	None	YES	NO		✓
250mL polys	12/18/14	15:30		1	250 mL	None	YES	NO		✓
250mL polys	12/18/14	15:30		1	250 mL	None	YES	Yes		✓
1L AG	12/18/14	15:30		2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type	BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
	500 mL AG	(PAHs) (TPH-D)
	40 mL vial	(VOCs)
	Lg OJ HDPE	(TDS) (Chloride)
	250 mL polys	(LL Hg)
	1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 14:48 0.250 L/min Depth of tubing (ft btoc): ~19'

Meas.	Time	Cum. Volume (L)	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (mS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	14:53	1.25	8.6	6.35	3.06	0.295	13.43	7.87	-51.4	yellow tint, mostly clear
2	14:58	2.50	8.6	6.37	10.5	0.291	13.86	4.90	-66.5	mostly clear
3	15:03	3.75	.	6.36	7.40 or 9.85	0.283	13.97	5.01	-70.1	"
4	:		.	.			.			
5	15:08	5.00	8.4	6.36	9.57	0.281	14.04	3.70	-82.4	"
6	15:11	6.25 5.75	8.6	6.35	8.95	0.280	14.00	4.21	-89.7	"
7	15:15	7.50 6.75	8.6	6.36	6.46	0.280	14.06	3.03	-96.8	"
8	15:19	7.75	8.6	6.35	6.46	0.280	14.06	2.80	-95.2	"
9	15:22	8.50	8.6	6.35	7.75	0.280	14.06	2.78	-98.4	
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 7.75 **Turbidity after sample collection (NTU):** 3.36

Comments: End time 1555, total purged before sampling: 8.5 L / 2.25 gallons

SAMPLER: Evan Malczyk (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. | WELL ID: EMW-185

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 | SAMPLE ID: EMW-185-20141217

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN		TEMPERATURE:	(F) 45 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW		[Water Column x Gal/ft] Volume (gal)
12/17/14	14:24	19.89	---	7.72	---	12.17	X 1	12.17 1.98
/ /	:	.	---	.	---	.	X 3	5.95

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer | Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA | Sample Depth: | [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/17/14	15:15		1	500 mL	HNO3	YES	NO		
500 mL HDPE	12/17/14	15:15		1	500 mL	HNO3	YES	YES		
500 mL AG	12/17/14	15:15		4	500 mL	None	YES	NO		
40 mL vial	12/17/14	15:15		3	40 mL	HCl	YES	NO		
Lg OJ HDPE	12/17/14	15:15		1	500 mL	None	YES	NO		
250mL polys	12/17/14	15:15		1	250 mL	None	YES	NO		
250mL polys	12/17/14	15:15		1	250 mL	None	YES	Yes		
1L AG	12/17/14	15:15		2	1 L	None	YES	NO		

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA | Purge Start Time: 14:40 | Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond ~~(µS/cm)~~ mS/cm	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	14:44	1.2L	7.71	6.51	36.6	0.830	13.46	3.10	-94.2	Yellow tint
2	14:48	2.4L	7.71	6.13	31.7	0.344	13.60	3.01	-105.2	"
3	14:52	3.6L	7.70	6.11	22.3	0.325	13.73	2.85	-107.3	"
4	14:56	4.8L	7.71	6.12	14.1	0.309	13.76	2.33	-107.2	Clear
5	15:00	6.0L	7.71	6.12	10.8	0.304	13.77	2.43	-101.1	Clear
6	15:04	7.2L	7.80	6.13	8.82	0.301	13.79	2.11	-96.5	
7	15:08	8.4L	7.82	6.14	6.68	0.293	13.83	2.26	-102.6	
8	15:12	9.6	7.83	6.14	4.78	0.289	13.87	2.18	-105.8	
9	:		.	.			.			
10	:		.	.	JRP		.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): | Turbidity after sample collection (NTU):

Comments: Soft bottom — Clear 2.44 NTU

SAMPLER: Joseph R. Pursley (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** EMW-19D

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** EMW-19D-121814

DUP ID: —

WIND FROM:	N	NE	E	SE	(S)	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY			(RAIN)	**TEMPERATURE:**	(°F) 46	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW		[Water Column x Gal/ft] Volume (gal)
12/18/14	14:35	79.1*	---	8.78	---	70.32	X 1	11.46
/ /	:	.	---	.	---	.	X 3	34.38

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = (0.163)	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: 77'

Bottle Type	Date	Time	Method	Amount	Volume mL	Preservative [circle]	Ice	Filter	pH	[√ if used] √
500 mL HDPE	12/18/14	16:40	B	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:	/	1	500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:	/	4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:	/	3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:	/	1	500 mL	None	YES	NO		✓
250mL polys	/ /	:	/	1	250 mL	None	YES	NO		✓
250mL polys	/ /	:	/	1	250 mL	None	YES	Yes		✓
1L AG	/ /	:	/	2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 15:12 DTW=8.85 Depth of tubing (ft btoc): 77'

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	15:16	1.4 L	8.86	6.88	284.9	35297	12.1	1.87	-76.8	light gray cloudy
2	15:20	2.8 L	8.87	6.92	201.5	35338	12.1	1.11	-90.1	" " "
3	15:24	4.2 L	8.92	6.94	131.6	35284	12.0	0.70	-97.3	very light gray cloudy
4	15:28	5.6 L	8.93	6.95	101.5	35251	12.0	0.53	-102.0	" " " "
5	15:32	7.2 L	8.93	6.95	75.38	35222	12.0	0.47	-104.6	gray tint
6	15:36	8.8 L	8.97	6.95	62.54	35194	12.0	0.41	-107.6	" "
7	15:40	10.4 L	9.00	6.96	47.82	35161	12.0	0.39	-109.4	" "
8	15:44	12.0 L	9.02	6.96	40.42	35142	11.9	0.37	-111.5	almost clear
9	15:48	13.6 L	9.03	6.96	35.45	35192	11.9	0.35	-112.9	" "
10	15:52	15.2 L	9.05	6.96	30.64	35176	11.9	0.33	-114.2	" "
11	15:56	16.8 L	9.08	6.96	23.62	35149	11.9	0.34	-115.4	clear, colorless
12	16:00	18.4 L	9.11	6.96	30.05	35136	11.9	0.34	-116.2	almost clear

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): **Turbidity after sample collection (NTU):**

Comments: * — Removed 0.9' of sediment from bottom of well, DTB now 80.0' by using Waterra tubing, removed 6 gallon prior to purge start time

SAMPLER: Dave Loffman (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle WA 98101

Office: (206) 287-9130 Fax: (206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc.
SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109
PROJECT NUMBER: 131044-01.01

WELL ID: EMW-19D
BLIND ID: EMW-19D-121814
DUP ID: —

WATER QUALITY DATA | Purge Start Time: 15:12 | Method: Low Flow Peristaltic Pump | Pump/Bailer Inlet Depth: 77'

Time	DTW (ft)	Purge (gal) (Cummulative Totals)	pH	E Cond (µS)	°F Temp °C (circle units)	DO (mg/L)	ORP	TDS	Salinity	Turbidity	Water Quality (Clarity, Color)
1604	9.14	20.0 ℓ	6.96	35131	11.9	0.34	-117.2	—	—	25.86	almost clear
1608	9.18	21.6 ℓ	6.96	35120	11.9	0.34	-117.8	—	—	20.07	" "
1612	9.17	23.2 ℓ	6.96	35096	11.9	0.36	-118.4	—	—	17.16	clear, cobbles
1616	9.23	24.8 ℓ	6.97	35088	11.9	0.37	-119.2	—	—	15.39	" "
1620	9.28	26.4 ℓ	6.97	35085	11.9	0.37	-119.6	—	—	12.35	" "
1624	9.32	28.0 ℓ	6.97	35066	11.9	0.37	-120.2	—	—	13.22	" "
1628	9.35	29.6 ℓ	6.97	35072	11.9	0.39	-120.6	—	—	14.32	" "
1632	9.38	31.2 ℓ	6.97	35138	11.9	0.40	-120.8	—	—	13.96	" "

Notes:

Sampler: Doug Laffoon (Printed Name) (Signature)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: EMW-20D

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: EMW-20D-121614

DUP ID:

WIND FROM:	N	NE	E	SE	(S)	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		(RAIN)		TEMPERATURE:	(°F) 47.	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/16/14	14:21	79.70	---	8.00	---	71.70	X 1	11.69
/ /	:	.	---	.	---	.	X 3	35.07

Gal/ft = (dia./2)² x 0.163	1" = 0.041	(2" = 0.163)	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA

Sample Depth: 77'

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	[√ if used] √
500 mL HDPE	12/16/14	16:15	B	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:		4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	Yes		✓
1L AG	/ /	:		2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (NWTPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA

Purge Start Time: 14:49 Depth of tubing (ft btoc): 77'

Meas.	Time	Cum. Volume	DTW(ft bTOC)*	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	14:53	1.2 ℓ	8.34	7.36	332.9	36175	12.1	0.26	-124.1	Gray cloudy
2	14:57	2.4 ℓ	8.39	7.36	515.5	36243	12.1	0.23	-127.5	" "
3	15:01	3.6 ℓ	8.44	7.37	218.7	36512	12.1	0.30	-123.6	light gray cloudy
4	15:05	4.8 ℓ	8.48	7.37	144.8	36515	12.1	0.19	-133.3	" " "
5	15:09	6.0 ℓ	8.56	7.37	85.87	36519	12.1	0.17	-137.4	gray tint
6	15:13	7.2 ℓ	8.61	7.37	77.29	36528	12.1	0.15	-140.3	" "
7	15:17	8.4 ℓ	8.69	7.37	48.47	36520	12.1	0.14	-141.7	almost clear
8	15:21	9.6 ℓ	8.76	7.36	53.43	36530	12.1	0.14	-142.8	" "
9	15:25	10.8 ℓ	8.81	7.37	38.18	36537	12.1	0.13	-143.9	" "
10	15:29	12.0 ℓ	8.88	7.37	30.09	36544	12.1	0.12	-144.8	" "
11	15:33	13.2 ℓ	8.95	7.37	31.03	36540	12.1	0.13	-139.1	" "
12	15:37	14.4 ℓ	9.04	7.37	22.07	36546	12.1	0.14	-140.1	" "

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 9.57 Turbidity after sample collection (NTU): 13.68

Comments: *-water level tidally influenced

pg 1 of 2

SAMPLER: Doug Laffoon (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle WA 98101

Office: (206) 287-9130 Fax: (206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** EMW-20D

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **BLIND ID:** EMW-20D-121614

PROJECT NUMBER: 131044-01.01 **DUP ID:** —

WATER QUALITY DATA | Purge Start Time: 14:49 | Method: Low Flow Peristaltic Pump | Pump/Bailer Inlet Depth: 77'

Time	DTW (ft)	Purge (gal) (Cummulative Totals)	pH	E Cond (µS)	°F Temp °C (circle units)	DO (mg/L)	ORP	TDS	Salinity	Turbidity	Water Quality (Clarity, Color)
1541	9.09	15.6 ℓ	7.37	36551	12.1	0.13	-142.4	—	—	22.68	almost clear
1545	9.15	16.8 ℓ	7.37	36554	12.1	0.13	-143.8	—	—	18.70	clear, colorless
1549	9.23	18.0 ℓ	7.37	36561	12.1	0.12	-145.2	—	—	13.32	" "
1553	9.30	19.2 ℓ	7.37	36567	12.1	0.12	-145.9	—	—	9.84	" "
1557	9.38	20.4 ℓ	7.37	36572	12.1	0.13	-146.8	—	—	9.12	" "
1601	9.45	21.6 ℓ	7.37	36582	12.1	0.13	-147.2	—	—	9.57	" "

Notes:

pg 2 of 2

Sampler: Doug Laffoon
(Printed Name)

(Signature)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** EMW-21D

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** EMW-21D-121614

DUP ID: —

WIND FROM: N | NE | E | SE | (S) | SW | W | NW — (LIGHT) | MEDIUM | HEAVY

WEATHER: SUNNY | PRTLY CLOUDY | (CLOUDY) | RAIN **TEMPERATURE:** (°F) 45 °C [Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW		[Water Column x Gal/ft] Volume (gal)
12/16/14	12:04	79.20	---	7.47	---	71.73	X 1	11.67
/ /	:	.	---	.	---	.	X 3	35.07

Gal/ft = (dia./2)² x 0.163	1" = 0.041	(2" = 0.163)	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: 77'

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative (circle)	Ice	Filter	pH	[√ if used]
500 mL HDPE	12/16/14	13:10	B	1	500 mL	HNO3	YES	NO		√
500 mL HDPE	/ /	13:10		1	500 mL	HNO3	YES	YES		√
500 mL AG	/ /	:		4	500 mL	None	YES	NO		√
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		√
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		√
250mL polys	/ /	:		1	250 mL	None	YES	NO		√
250mL polys	/ /	:		1	250 mL	None	YES	Yes		√
1L AG	/ /	:		2	1 L	None	YES	NO		√

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 12:34 Depth of tubing (ft btoc): 77'

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	12:38	1.2 L	7.61	6.83	87.5	41953	10.7	0.39	-65.3	brown tint
2	12:42	2.4 L	7.65	6.95	27.94	42150	10.7	0.29	-85.0	almost clear
3	12:46	3.6 L	7.65	7.01	11.07	42184	10.7	0.21	-95.1	clear, colorless
4	12:50	4.8 L	7.66	7.03	8.40	42180	10.7	0.19	-100.5	" "
5	12:54	6.0 L	7.66	7.03	6.58	42186	10.7	0.18	-105.2	" "
6	12:58	7.2 V	7.67	7.06	5.08	42183	10.7	0.18	-107.1	" "
7	:		.	.			.			
8	:		.	.			.			
9	:		.	.			.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters]

Turbidity before sample collection (NTU): 5.08 **Turbidity after sample collection (NTU):** 2.01 [Clarity, Color]

Comments:

SAMPLER: Doug Laffoon (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** EMW-220

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** EMW-220-121714

DUP ID: —

WIND FROM: N | NE | E | SE | (S) | SW | W | NW — (LIGHT) | MEDIUM | HEAVY

WEATHER: SUNNY | PRTLY CLOUDY | (CLOUDY) | RAIN — **TEMPERATURE:** (°F) 48 °C (Circle appropriate units)

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW [Product Thickness]	DTB-DTW [Water Column]		Volume (gal) [Water Column x Gal/ft]
12/17/14	14:07	79.60	---	7.89	---	71.71	X 1	11.69
1-4	:	.	---	.	---	.	X 3	35.07

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | (2" = 0.163) | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer — Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA

Sample Depth: 76'

Bottle Type	Date	Time	Method	Amount	Volume mL	Preservative [circle]	Ice	Filter	pH	[√ if used]
500 mL HDPE	12/17/14	16:00	B	1	500 mL	HNO3	YES	NO		√
500 mL HDPE	〃	:		1	500 mL	HNO3	YES	YES		√
500 mL AG	〃	:		4	500 mL	None	YES	NO		√
40 mL vial	〃	:		3	40 mL	HCl	YES	NO		√
Lg OJ HDPE	〃	:		1	500 mL	None	YES	NO		√
250mL polys	〃	:		1	250 mL	None	YES	NO		√
250mL polys	〃	:		1	250 mL	None	YES	Yes		√
1L AG	〃	:	↓	2	1 L	None	YES	NO		√

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA

Purge Start Time: 14:36 DTW = 8.04 — Depth of tubing (ft btoc): 76'

Meas.	Time	Cum. Volume	DTW* (ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	14:40	1.2 l	8.12	6.92	166.2	33408	11.4	0.99	-100.9	light tan cloudy
2	14:44	2.4 l	8.15	6.99	203.5	33509	11.4	0.89	-111.7	tan cloudy
3	14:48	3.6 l	8.18	7.03	210.3	33556	11.4	0.75	-118.9	〃 〃
4	14:52	4.8 l	8.21	7.05	184.4	33585	11.4	0.67	-123.2	〃 〃
5	14:56	6.0 l	8.25	7.06	182.8	33613	11.4	0.63	-126.5	〃 〃
6	15:00	7.2 l	8.30	7.07	152.4	33630	11.3	0.62	-128.3	light tan cloudy
7	15:04	8.4 l	8.33	7.07	114.4	33661	11.3	0.62	-130.2	〃 〃 〃
8	15:08	9.6 l	8.34	7.08	91.89	33683	11.3	0.63	-131.4	very light tan cloudy
9	15:12	10.8 l	8.40	7.08	72.39	33713	11.3	0.61	-132.6	〃 〃 〃 〃
10	15:16	12.0 l	8.42	7.08	57.54	33744	11.3	0.50	-133.7	〃 〃 〃 〃
11	15:20	13.2 l	8.50	7.09	48.55	33765	11.3	0.42	-134.3	almost clear
12	15:24	14.4 l	8.53	7.09	43.53	33806	11.3	0.38	-135.2	〃 〃

[gallons or (liters)] [Clarity, Color]

Turbidity before sample collection (NTU): 7.73 **Turbidity after sample collection (NTU):** 7.56

Comments: 8 — well tidally influenced

SAMPLER: Doug Laffoon (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle WA 98101

Office: (206) 287-9130 Fax: (206) 287-9131

PROJECT NAME:	8th Avenue Terminals, Inc.	**WELL ID:**	EMW-22D
SITE ADDRESS:	7400 8th Ave S, Seattle WA 98109	**BLIND ID:**	EMW-220-121714
PROJECT NUMBER:	131044-01.01	**DUP ID:**	—

WATER QUALITY DATA			Purge Start Time: 14:36			Method: Low Flow Peristaltic Pump				Pump/Bailer Inlet Depth: 76'	
Time	DTW (ft)	Purge (gal)	pH	E Cond (µS)	°F Temp °C	DO (mg/L)	ORP	TDS	Salinity	Turbidity	Water Quality
1528	~~8.53~~	15.6 ℓ	7.09	33844	11.3	0.36	-135.8	—	—	31.51	almost clear
1532	8.60	16.8 ℓ	7.09	33880	11.3	0.36	-136.3	—	—	24.30	" "
1536	8.67	18.0 ℓ	7.09	33924	11.3	0.36	-136.7	—	—	16.05	clear, colorless
1540	8.71	19.2 ℓ	7.09	33957	11.3	0.37	-137.2	—	—	8.36	" "
1544	8.75	20.4 ℓ	7.10	33998	11.3	0.38	-137.6	—	—	9.54	" "
1548	8.52	21.6 ℓ	7.10	34010	11.3	0.38	-137.7	—	—	7.73	" "
		(Cummulative Totals)			(circle units)						(Clarity, Color)

Notes:

Sampler: Doug Laffoon
(Printed Name)

(Signature)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. WELL ID: HC-20

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 SAMPLE ID: HC-20-121614

DUP ID: —

WIND FROM:	N	NE	E	SE	(S)	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		(CLOUDY)		(RAIN)		TEMPERATURE:	(°F) 50 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

Date	Time	DT-Bottom	DT-Product	DT-Water	[Product Thickness] DTP-DTW	[Water Column] DTB-DTW		[Water Column x Gal/ft] Volume (gal)
12/10/14	14:37	17.23	---	9.38	---	7.85	X 1	1.28
/ /	:	.	---	.	---	.	X 3	3.84

Gal/ft = (dia./2)² x 0.163	1" = 0.041	(2" = 0.163)	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth:

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	[√ if used] √
500 mL HDPE	12/10/14	15:20	Bi	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:		4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	Yes		✓
1L AG	/ /	:		2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: : Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	14:42	1.5L	10.03	6.05	11.6	354	14.75	2.86	23.1	clear, slight yellow
2	14:45	2.4L	10.45	6.08	18.6	355	14.79	1.24	27.4	tinge, slight odor
3	14:48	3.3L	10.59	6.09	15.0	356	14.86	0.99	26.1	
4	14:51	4.2L	10.69	6.09	11.9	357	14.87	0.85	22.4	
5	14:54	4.725L	10.46	6.10	7.47	358	14.66	0.67	17.4	
6	14:57	5.25	10.42	6.10	4.79	358	14.59	0.64	15.8	
7	15:00	5.775	10.42	6.10	3.62	358	14.57	0.63	14.4	
8	:		.	.			.			
9	:		.	.			.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 3.62 Turbidity after sample collection (NTU): 1.8

Comments: Soft bottom, Start pumping @ 0.34/min water dropping so slowed to 0.175L/min @ 14:51 0.525

SAMPLER: Kellee Christensen (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

well mount does not have threads to tighten well plate

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. | WELL ID: SLR-1

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 | SAMPLE ID: SLR-1-12182014

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY		RAIN		TEMPERATURE:	°F 48 .	°C

(Circle appropriate units)

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/18/14	18:11	15.1	---	5.2	---	9.9	X 1	1.61
/ /	:	Hard bottom	---	.	---	.	X 3	4.84

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer | Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/18/14	18:35	B	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:		4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	Yes		✓
1L AG	/ /	:		2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type	BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
	500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
	500 mL AG	(PAHs) (TPH-D)
	40 mL vial	(VOCs)
	Lg OJ HDPE	(TDS) (Chloride)
	250 mL polys	(LL Hg)
	1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 18 : 11 0.3"/min Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume (L)	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (mS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	18:15	1.2	5.2	6.67	3.02	0.416	13.38	11.31	-86.8	yellow tint, H_2S odor clear
2	18:20	2.7	5.6	6.72	1.68	0.431	13.80	5.71	-119.9	slight yellow tint clear
3	18:24	3.9	5.6	6.70	1.86	0.433	13.89	3.97	-122.7	Moderate H_2S odor
4	18:26	5.1	5.6	6.72	ø 1.83	0.434	13.98	3.87	-127.5	"
5	18:30	6.3	5.6	6.71	1.35	0.434	13.97	3.62	-128.7	"
6	18:33	7.2	5.60	6.71	1.21	0.434	14.06	3.34	-131.4	"
7	:		.	.			.			
8	:		.	.			.			
9	:		.	.			.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 1.21 Turbidity after sample collection (NTU): 1.34

Comments: Begin sampling 1835, well mount casing full of water when mount opened, drained water out well did not look to be impacted when well plug removed. Total purged before sampling 1.9gal/7.2L

SAMPLER: Evan Maleszyk (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** SLR-2

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** SLR-2-121714

DUP ID: —

WIND FROM:	N	NE	E	SE	(S)	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		CLOUDY			(RAIN)	**TEMPERATURE:**	(°F) 42	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft)

[Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/17/14	18:56	14.15	---	3.83	---	10.32	X 1	1.68
↑	:	.	---	.	---	.	X 3	5.04

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | (2" = 0.163) | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer | Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA

Sample Depth: 11.5'

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	[√ if used] √
500 mL HDPE	12/17/14	20:00	B	1	500 mL	HNO3	YES	NO		√
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		√
500 mL AG	/ /	:		4	500 mL	None	YES	NO		√
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		√
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		√
250mL polys	/ /	:		1	250 mL	None	YES	NO		√
250mL polys	/ /	:		1	250 mL	None	YES	Yes		√
1L AG	/ /	:		2	1 L	None	YES	NO		√

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	(Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba))
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA

Purge Start Time: 19:06 Depth of tubing (ft btoc): 11.5'

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	19:10	1.6 L	4.35	6.85	40.85	628.8	8.9	6.81	25.3	almost clear
2	19:14	3.2 L	4.64	6.92	31.27	632.2	8.8	6.76	26.2	" "
3	19:18	4.8 L	4.80	6.97	11.86	668.0	8.8	6.48	30.3	clear, colorless
4	19:22	6.4 L	4.90	6.96	13.56	675.4	8.9	6.29	33.5	" "
5	19:26	8.0 L	5.00	6.96	11.58	672.4	8.9	6.26	38.6	" "
6	19:30	9.6 L	5.06	6.94	9.61	668.2	8.9	6.26	43.6	" "
7	19:34	11.2 L	5.12	6.94	8.79	658.9	8.9	6.23	47.8	" "
8	19:38	12.8 L	5.19	6.93	7.02	649.1	8.9	6.28	51.6	" "
9	:		.	.			.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): **Turbidity after sample collection (NTU):**

Comments: Tidally influenced

SAMPLER: Dora Laffoon
(PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** SLR-3

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** SLR-3-121514

DUP ID:

WIND FROM: N | NE | E | SE | (S) | SW | W | NW | LIGHT | (MEDIUM) | HEAVY

WEATHER: SUNNY | (PRTLY CLOUDY) | CLOUDY | RAIN **TEMPERATURE:** (°F) 54 . °C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/15/14	15:57	14.33	---	[redacted]	---	8.89	X 1	1.45
/ /	:	.	---	5.44 (w)	---	.	X 3	4.35

Gal/ft = (dia./2)² x 0.163 | 1" = 0.041 | (2" = 0.163) | 3" = 0.367 | 4" = 0.653 | 6" = 1.469 | 10" = 4.080 | 12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative (circle)	Ice	Filter	pH	√
500 mL HDPE	12/15/14	17:05	B1	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:		4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	Yes		✓
1L AG	//	:		2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: : Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	16:05	2.4 L	5.46	6.58	6.38	1467	13.65	1.75	96.9	yellowish Green,
2	16:08	3.3 L	5.54	6.60	67.25	1475	13.86	1.14	91.2	clear, no odor
3	16:11	4.2 L	5.55	6.62	5.36	1488	14.19	0.87	87.8	
4	16:14	5.1 L	5.58	6.62	4.42	1494	14.36	0.66	85.3	
5	16:17	6.0 L	5.71	6.64	4.34	1494	14.41	0.64	83.4	
6	16:20	6.9 L	5.71	6.64	3.93	1496	14.47	0.53	81.8	
7	:		.	.			.			
8	:		.	.			.			
9	:		.	.			.			
10	:		.	.			.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters]

Turbidity before sample collection (NTU): 3.93 **Turbidity after sample collection (NTU):** 1.65 [Clarity, Color]

Comments: Soft Bottom, Pumping @ 0.3 L/min

SAMPLER: Kellee Christensen (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

720 Olive Way, Suite 1900
Seattle, Washington 98101
(206) 287-9131

PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** SLR-6

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** SLR-6-20141217

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	LIGHT	MEDIUM	HEAVY
WEATHER:	SUNNY		PRTLY CLOUDY		(CLOUDY)			(RAIN)	TEMPERATURE: (°F) 48 . °C		

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/17/14	:	13.98	---	6.85	---	7.13	X 1	1.162
/ /	:	.	---	.	---	.	X 3	3.486

Gal/ft = (dia./2)² x 0.163	1" = 0.041	2" = 0.163	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/17/14	19:00		1	500 mL	HNO3	YES	NO		
500 mL HDPE	12/17/14	19:50		1	500 mL	HNO3	YES	YES		
500 mL AG	12/17/14	19:50		4	500 mL	None	YES	NO		
40 mL vial	12/17/14	19:50		3	40 mL	HCl	YES	NO		
Lg OJ HDPE	12/17/14	19:50		1	500 mL	None	YES	NO		
250mL polys	12/17/14	19:50		1	250 mL	None	YES	NO		
250mL polys	12/17/14	19:50		1	250 mL	None	YES	Yes		
1L AG	12/17/14	19:50		2	1 L	None	YES	NO		

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba)
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: 19:06 Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond ~~(µS/cm)~~ mS/cm	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	19:11	1.5	7.35	6.57	22.0	0.839	10.91	8.40	-15.7	Yellow tint
2	19:15	2.7	7.55	6.45	15.8	0.850	10.90	8.18	-42.4	Particulates
3	19:19	3.9	7.63	6.40	10.5	0.855	11.03	7.70	-47.6	Clearing
4	19:23	5.2	7.80	6.37	7.36	0.855	11.19	7.57	-54.7	"
5	19:27	6.4	7.90	6.36	4.52	0.850	11.34	7.54	-61.5	"
6	19:31	7.6	7.95	6.35	2.47	0.840	11.46	6.77	-69.7	"
7	19:35	8.8	8.03	6.35	1.62	0.847	11.53	6.51	-72.2	"
8	19:39	10.0	8.07	6.34	1.25	0.846	11.53	6.40	-79.5	"
9	:		.	.			.			
10	:		.	.	FRP		.			
11	:		.	.			.			
12	:		.	.			.			

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): **Turbidity after sample collection (NTU):**

Comments: Stiff bottom 0.63 NTU @ 20.11 hrs

SAMPLER: Joseph R Pursley (PRINTED NAME) (SIGNATURE)

FIELD SAMPLING DATA SHEET

ANCHOR QEA

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PROJECT NAME: 8th Avenue Terminals, Inc. **WELL ID:** SUR-7

SITE ADDRESS: 7400 8th Ave S, Seattle WA 98109 **SAMPLE ID:** SUR-7-121514

DUP ID:

WIND FROM:	N	NE	E	SE	S	SW	W	NW	(LIGHT)	MEDIUM	HEAVY
WEATHER:	SUNNY		(PRTLY CLOUDY)		CLOUDY		RAIN		TEMPERATURE:	(°F) 53 .	°C

[Circle appropriate units]

HYDROLOGY/LEVEL MEASUREMENTS (Nearest 0.01 ft) [Product Thickness] [Water Column] [Water Column x Gal/ft]

Date	Time	DT-Bottom	DT-Product	DT-Water	DTP-DTW	DTB-DTW		Volume (gal)
12/15/14	12:53	15.28	---	6.75	---	8.53	X 1	1.39
/ /	:	.	---	.	---	.	X 3	4.17

Gal/ft = (dia./2)² x 0.163	1" = 0.041	(2" = 0.163)	3" = 0.367	4" = 0.653	6" = 1.469	10" = 4.080	12" = 5.875

§ METHODS: (A) Waterra (B) Peristaltic Pump (C) Disposable Bailer Sampled via: (1) Low-flow (2) Purged 3 casing volumes (3) Purged dry, let recover, and sampled

GROUNDWATER SAMPLING DATA Sample Depth: [√ if used]

Bottle Type	Date	Time	Method	Amount & Volume mL		Preservative [circle]	Ice	Filter	pH	√
500 mL HDPE	12/15/14	14:15	B	1	500 mL	HNO3	YES	NO		✓
500 mL HDPE	/ /	:		1	500 mL	HNO3	YES	YES		✓
500 mL AG	/ /	:		4	500 mL	None	YES	NO		✓
40 mL vial	/ /	:		3	40 mL	HCl	YES	NO		✓
Lg OJ HDPE	/ /	:		1	500 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	NO		✓
250mL polys	/ /	:		1	250 mL	None	YES	Yes		✓
1 AG	/ /	:	↓	2	1 L	None	YES	NO		✓

Total Bottles (include duplicate count): 14

Analysis Allowed per Bottle Type

BOTTLE TYPE	ANALYSIS ALLOWED PER BOTTLE TYPE (Circle applicable or write non-standard analysis below)
500 mL HDPE	(Total and Dissolved Metals: (Ag) (As) (Be) (Cd) (Cr) (Cu) (Hg) (Ni) (Pb) (Sb) (Se) (Tl) (Zn) (Ba))
500 mL AG	(PAHs) (TPH-D)
40 mL vial	(VOCs)
Lg OJ HDPE	(TDS) (Chloride)
250 mL polys	(LL Hg)
1L AG	(PCBs)

WATER QUALITY DATA Purge Start Time: : Depth of tubing (ft btoc):

Meas.	Time	Cum. Volume	DTW(ft bTOC)	pH	Turbidity (NTU)	E Cond (µS/cm)	Temp °C	DO (mg/L)	ORP	Water Quality (Color, Clarity)
1	13:13	1.75 L	7.14	6.22	23.2	525	15.26	2.77	144.4	clear w/orange tint,
2	13:16	2.50 L	7.18	6.30	20.0	501	15.35	2.74	132.9	small orange particles,
3	13:19	3.25 L	7.21	6.32	20.0	496	15.40	2.81	130.1	no odor
4	13:22	4.0 L	7.27	6.33	17.9	501	15.39	2.70	126.3	
5	13:25	4.75 L	7.29	6.32	16.0	494	15.43	2.33	124.2	
6	13:28	5.5 L	7.33	6.33	14.7	488	15.52	2.12	120.9	
7	13:31	6.25 L	7.33	6.33	11.5	487	15.49	1.89	117.0	
8	13:34	7.0 L	7.35	6.33	10.2	487	15.51	2.01	114.8	
9	13:37	7.75 L	7.36	6.32	8.77	486	15.52	1.55	113.0	
10	13:40	8.5 L	7.38	6.32	5.82	485	15.53	1.39	107.7	
11	13:43	9.25 L	7.38	6.32	4.93	484	15.53	1.40	104.7	
12	13:46	10.0 L	7.41	6.32	3.24	485	15.49	1.34	102.0	

[gallons or liters] [Clarity, Color]

Turbidity before sample collection (NTU): 3.24 **Turbidity after sample collection (NTU):** 1.60

Comments: Soft Bottom, 0.25 L/min start pumping @ 1306

SAMPLER: Kellee Christensen (PRINTED NAME) Kellee Chr (SIGNATURE)

SEDIMENT CORE LOGS

Sediment Core Log

SSED-SB-12A

Sheet 1 of 1

Project: **Draft RI Report, 8th Ave Terminals, Inc.**	Location: **7400 8th Ave S., Seattle WA**	Tube Length (ft): **15.0**
Project #: **131044-01.01**	Surface Water Elevation (MLLW): **7.3ft**	Penetration Depth (ft): **15ft**
Client: **DeNovo Seattle, LLC**	Water Depth (ft): **LL: -18.8**	Field Recovery Length (ft): **13.1ft**
Collection Date: **12/12/14**	Mudline Elevation (ft MLLW): **-11.5ft**	Process Date: **12/15/14**
Contractor: **MSS**	Northing: **198597.061** Easting: **1272607.387**	Process Method: **Cut tube**
Vessel: **Nancy Anne**	Horiz. Datum: **NAD83 SP WA N, US Ft** Vert. Datum: **MLLW**	Sample Quality: **Good**
Operator: **Bill Jaworski**	Method/Tube ID: **Vibracore/3.75"**	Logged By: **EM/BW**

Recovered Depth (ft)	Recovered Interval & Sample	Chemical Analysis	PID Measurement	Sediment Description Samples and Descriptions are in Recovered Depths. Classification Scheme: ASTM	Estimated In-situ Elevation (MLLW)
0			0	SILT (ML): 0-3.0ft: Moist, soft, black, 95% fines (low plasticity), 5% fine sand. Contains trace organics (hair-like fibers, wood fibers). Trace biota (shells).	-12.0
1				SILT (ML): 0.3-6.8ft: Moist, medium stiff, black, 90% fines (low plasticity fines), 10% fine sand. Occasional organics (wood fibers & fragments, hair-like fibers).	-13.0
2	SSED-SB-12A-2-4	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs			-14.0
3			0		-15.0
4	SSED-SB-12A-4-6	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs			-16.0
5					-17.0
6	SSED-SB-12A-6-7.7	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs			-18.0
7			0	SILT (ML): 6.8-7.8ft: Moist, medium stiff, dark gray, 5% fine sand, 95% fines. Trace organics (wood fibers), medium plasticity, fines. Trace H2S-like odor. @7.8ft: NATIVE CONTACT.	-19.0
8	SSED-SB-12A-8-10	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs		POORLY GRADED SAND (SP): 7.8-12.9ft: Moist, loose, dark gray, 100% sand (fine to medium). Contains occasional small (<1 in) pockets of moist, dense, gray brown SILT crumbles. @8.0ft: 1 piece dense sand ball, contains organic (wood fibers). @8.3-8.4ft: Pocket of moist, medium dense, black, SILT (CLAY (ML/CL)), 90% fines, 10% fine sand. @8.3-8.6ft: 1 piece anthropogenic material, diameter of tube, 1.5 in wide, puck-shaped. Upon clearing off piece- shiny surface, very dense. Trace napthalene-like odor. @9.8-10.7ft: Contains occasional organics (wood fragments & fibers, sticks). @10.4-10.7ft: Pocket of substantial organics (wood fragments up to 4 in). @10.7-12.9ft: Moist, dense, dark gray, 95% fine sand, 5% fines.	-20.0
9					-21.0
10			0		-22.0
11				@11.9-12.3ft: Stratified bed of SILTY SAND (SM), moist, medium dense, gray, 75% fine sand, 25% fines.	-23.0
12				End of core @12.9ft.	-24.0

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Notes: 1. Attempt 1 of 1.

Calculated Recovery
Recovery Length/Penetration Depth:
87%

Sediment Core Log

SSED-SB-13A

Project: **Draft RI Report, 8th Ave Terminals, Inc.**	Location: **7400 8th Ave S., Seattle WA**	Tube Length (ft): **15.0**
Project #: **131044-01.01**	Surface Water Elevation (MLLW): **12.1ft**	Penetration Depth (ft): **14ft**
Client: **DeNovo Seattle, LLC**	Water Depth (ft): **LL: -17.7ft**	Field Recovery Length (ft): **12.1ft**
Collection Date: **12/13/14**	Mudline Elevation (ft MLLW): **-5.6FT**	Process Date: **12/15/14**
Contractor: **MSS**	Northing: **198701.905** Easting: **1272474.68**	Process Method: **Cut tube**
Vessel: **Nancy Anne**	Horiz. Datum: **NAD83 SP WA N, US Ft** Vert. Datum: **MLLW**	Sample Quality: **Good**
Operator: **Bill Jaworski**	Method/Tube ID: **Vibracore/3.75"**	Logged By: **EM/BW**

Recovered Depth (ft)	Recovered Interval & Sample	Chemical Analysis	PID Measurement	Sediment Description (Samples and Descriptions are in Recovered Depths. Classification Scheme: ASTM)	Estimated In-situ Elevation (MLLW)
0			0	SANDY SILT (ML): 0-0.1ft: Moist, soft, gray brown, 30% fine sand, 70% fines.	-6.0
1	SSED-SB-13A-0.5-2	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs	0	POORLY GRADED SAND (SP): 0.1-2.2ft: Moist, medium dense, dark gray, 5% fines, 95% medium sand. Trace organics (stick), sand grains are black, red, orange, white. @0.6-1.4ft: Pockets of SILTY SAND (SM), moist, medium stiff, dark gray with black mottling, 70% medium sand, 30% fines. Occasional anthropogenic material (1/4 in black, angular, shiny, coal-like fragments). @1.4-2.0ft: Sand is reddish brown, grades to dark gray. @2.0ft: 1-2 in gravel (subrounded white). @2.2-2.4ft: Pocket of dark gray SILT 10% fine sand, 90% fines.	-7.0
2					-8.0
3	SSED-SB-13A-3-5	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs			-9.0
4			0	POORLY GRADED SAND (SP): 2.2-6.2ft: Moist, medium dense, dark gray, 100% medium sand. Sand grains are dark gray, black, white, orange. Contains occasional to trace pockets of brown gray silt. 1/2 in diameter. @5.3-5.5ft: 0.5 in stratified bed contains coarse sand and occasional fine gravel/subrounded.	-10.0
5					-11.0
6					-12.0
7			0	SILT WITH SAND (ML): 6.2-8.0ft: Moist, medium stiff, gray, 10% fine sand, 90% fines, low-medium plasticity. @6.2ft: 1 in piece c-gravel, 2.5 in, subrounded and subangular. @6.8-7.3ft: SILT is soft, lighter gray. Sand content increases downcore.	-13.0
8					-14.0
9				POORLY GRADED SAND (SP): 8.0-11.7ft: Moist, medium dense to dense, gray, 5% Fines, 95% fine sand, contains stratified beds with increased sand content. @9.0-9.7ft: Layer same as above @6.2ft. @10.2ft: Organic matter (wood fragment, stick). @10.5-11.7ft: Sand is medium, 100% SAND.	-15.0
10			0		-16.0
11				End of core @11.7ft.	-17.0

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Notes: 1.Attempt 2 of 2.

Calculated Recovery
Recovery Length/Penetration Depth:
86%

Sediment Core Log

SSED-SB-14A

Project: **Draft RI Report, 8th Ave Terminals, Inc.**	Location: **7400 8th Ave S., Seattle WA**	Tube Length (ft): **15.0**
Project #: **131044-01.01**	Surface Water Elevation (MLLW): **11.7ft**	Penetration Depth (ft): **13.8ft**
Client: **DeNovo Seattle, LLC**	Water Depth (ft): **LL: -10.5ft**	Field Recovery Length (ft): **14ft**
Collection Date: **12/13/14**	Mudline Elevation (ft MLLW): **+1.2**	Process Date: **12/14/15**
Contractor: **MSS**	Northing: **198778.867** Easting: **1272485.023**	Process Method: **Cut tube**
Vessel: **Nancy Anne**	Horiz. Datum: **NAD83 SP WA N, US Ft** Vert. Datum: **MLLW**	Sample Quality: **Good**
Operator: **Bill Jaworski**	Method/Tube ID: **Vibracore/3.75"**	Logged By: **EM/BW**

Recovered Depth (ft)	Recovered Interval & Sample	Chemical Analysis	PID Measurement	Sediment Description Samples and Descriptions are in Recovered Depths. Classification Scheme: ASTM	Estimated In-situ Elevation (MLLW)
0			0	SILTY SAND (SM): 0-0.4ft: Moist, medium dense, dark gray, 25% fines, 75% sand (medium).	1.0
1	SSED-SB-14A-0.5-2	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs	0	SILT (ML): 0.4-2.1ft: Moist, dark gray with black mottling, 10% fine sand, 90% fines. Contains organics (sticks). Contains trace biota (shell). @0.75-0.8ft: 2-1/4 in laminated beds of sand. @0.75ft gray, @0.8ft black. @2.0ft: Contains anthropogenic material (black, coal-like).	0.0
2			0	@2.1-2.3ft: Layer of organic (wood fragments, reddish, partially decomposed, slight H2S like odor).	-1.0
3	SSED-SB-14A-2-4	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs	0	SILTY SAND (SM): 2.3-3.8ft: Moist, dense, gray, 30% fines, 70% medium to coarse sand, contains moderate organics (wood fragments), contains substantical anthropogenic material (angular, brick-like fragments up to 2 in, molten glass-like fragments up to 2 in).	-2.0
4	SSED-SB-14A-4-6	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs	0	POORLY GRADED SAND (SP): 3.8-6.0ft: Moist, loose-medium dense, dark reddish gray, 100% sand (fine), color grades to dark gray.	-3.0
5				@6.0ft: NATIVE CONTACT	-4.0
6				POORLY GRADED SAND (SP): 6.0-13.5ft: Moist, loose to medium, dense, dark gray, 100% medium sand. Sand grains are black, dark gray, white, red.	-5.0
7	SSED-SB-14A-7-9	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs		@6.8ft: Several pieces of organic matter (wood fragments up to 2 in).	-6.0
8					-7.0
9					-8.0
10			0		-9.0
11					-10.0
12				@12-13.5ft: Sand is dense. @12.5-12.8ft: Pocket of silty sand, moist, dense, dark gray, 30% fines, 70% fine sand. 1 piece organic material, wood fragment (branch like fragment) up to 2 in.	-11.0
13				End of core @13.5ft.	-12.0

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Notes: 1.Attempt 2 of 2.

Calculated Recovery
Recovery Length/Penetration Depth:
98%

Sediment Core Log

SSED-SB-16A

Sheet 1 of 1

Project: **Draft RI Report, 8th Ave Terminals, Inc.**	Location: **7400 8th Ave S., Seattle WA**	Tube Length (ft): **15.0**
Project #: **131044-01.01**	Surface Water Elevation (MLLW): **6.9ft**	Penetration Depth (ft): **15ft**
Client: **DeNovo Seattle, LLC**	Water Depth (ft): **LL: -7.7ft**	Field Recovery Length (ft): **12.3ft**
Collection Date: **12/12/14**	Mudline Elevation (ft MLLW): **-0.77ft**	Process Date: **12/15/14**
Contractor: **MSS**	Northing: **198750.424** Easting: **1272484.308**	Process Method: **Cut tube**
Vessel: **Nancy Anne**	Horiz. Datum: **NAD83 SP WA N, US Ft** Vert. Datum: **MLLW**	Sample Quality: **Good**
Operator: **Bill Jaworski**	Method/Tube ID: **Vibracore/3.75"**	Logged By: **EM/BW**

Recovered Depth (ft)	Recovered Interval & Sample	Chemical Analysis	PID Measurement	Sediment Description	Estimated In-situ Elevation (MLLW)
			0	SILTY SAND (SM): 0-1.0ft: Moist, medium dense, dark gray. 70% fine to medium sand, 30% fines. @0.4ft: One 2 in gravel (subrounded). @0.5-0.7ft: 1/2 in bed of poorly graded sand, reddish brown, contains moderate stratified beds of silt.	
	SSED-SB-16A-1-2.7	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs	0	POORLY GRADED SAND WITH SILT (SP-SM): 1.0-2.8ft: Moist, medium dense, dark gray, 90% fine to medium sand, 10% fines. Contains occasional stratified and laminated beds of dark gray SILT. 90% fines, 10% fine sand. Trace anthropogenic like material (1 glass fragment). @1.1-1.3ft: Pocket contains hard, reddish, vesiculated, gravel-like fragments, black, angular, shiny, coal-like. @1.8-2.1ft: Pocket of dark gray silt, 100% fines. @2.2ft: 1-2 in piece wood fragment, reddish, bark-like. @2.6-2.8ft: Pocket of organic matter, wood fragments, black. @2.8ft: NATIVE CONTACT	
	SSED-SB-16A-4-6	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs	0	POORLY GRADED SAND (SP): 2.8-12.0ft: Moist, loose to medium dense, dark gray, 100% medium sand. Sand grains are red, gray, black, and white. @4.5ft: Pockets of organics (wood fragments, stick like, up to 1.5 in). @6.5ft: Contains trace fine gravel, subrounded, 0.5in. End of core @12.0ft.	

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Notes: 1. Attempt 1 of 1.

Calculated Recovery
Recovery Length/Penetration Depth:
82%

Sediment Core Log

SSED-SB-19

Sheet 1 of 1

Project: **Draft RI Report, 8th Ave Terminals, Inc.**	Location: **7400 8th Ave S., Seattle WA**	Tube Length (ft): **15.0**
Project #: **131044-01.01**	Surface Water Elevation (MLLW): **12.4ft**	Penetration Depth (ft): **14ft**
Client: **DeNovo Seattle, LLC**	Water Depth (ft): **LL: -13.2ft**	Field Recovery Length (ft): **13.3ft**
Collection Date: **12/13/14**	Mudline Elevation (ft MLLW): **-0.77ft**	Process Date: **12/16/14**
Contractor: **MSS**	Northing: **198779.874** Easting: **1272448.682**	Process Method: **Cut tube**
Vessel: **Nancy Anne**	Horiz. Datum: **NAD83 SP WA N, US Ft** Vert. Datum: **MLLW**	Sample Quality: **Good**
Operator: **Bill Jaworski**	Method/Tube ID: **Vibracore/3.75"**	Logged By: **EM/BW**

Recovered Depth (ft)	Recovered Interval & Sample	Chemical Analysis	PID Measurement	Sediment Description (Samples and Descriptions are in Recovered Depths. Classification Scheme: ASTM)	Estimated In-situ Elevation (MLLW)
0			0	SILTY SAND (SM): 0-0.4ft: Moist, medium dense, dark gray, 30% fines, 70% medium sand. Contains pockets with reddish brown color.	-1.0
1			0	SILT (ML): 0.4-3.7ft: Moist, medium stiff to stiff, very dark gray, 5% fine sand, 95% fines. SILT/CLAY (ML/CL) can be remolded and rolled into 1/8 in ribbon. Medium plasticity fines. Trace H2S-like odor. Contains occasional organics (wood fragments up to 1.5 in). Contains trace biota (shell).	-2.0
2	SSED-SB-19-2-4	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs	0	@2.1-2.3ft: Moist, medium stiff, dark gray, 30% fines, 70% fine sand.	-3.0
3			0	@2.3-2.5ft: Stratified bed of poorly graded sand 100% fine sand.	-4.0
4	SSED-SB-19-4-6	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs	0	@2.5-3.7ft: Moist, medium stiff, dark gray, SILT, 90% fines, 10% fine sand, contains trace organics (wood fragments).	-5.0
5				POORLY GRADED SAND WITH SILT (SP-SM): 3.7-6.0ft: Moist, medium dark to dark gray, 20% fines, 80% medium sand, contains laminated beds and pockets of increased silt content. Trace H2S like odor.	-6.0
6			0	@5.8-6.0ft: Stratified bed same as above @2.5ft.	-7.0
7	SSED-SB-19-7-9	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs		POORLY GRADED SAND (SP): 6.0-6.8ft: Moist, medium dense, dark gray, 5% fines, 95% medium sand. Trace H2S-like odor. Sand grains are dark gray, white, red, and black.	-8.0
8				SILT (ML): 6.8-10.6ft: Moist, medium stiff to stiff, gray with dark gray mottling, 5% fine sand, 95% fines, low plasticity fines.	-9.0
9			0		-10.0
10					-11.0
11				SILT WITH SAND (ML): 10.6-12.8ft: Moist, stiff, gray, 20% fine sand, 80% fines. Low plasticity.	-12.0
12			0	End of core @12.8ft.	-13.0

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Notes: 1. Attempt 1 of 1.

Calculated Recovery
Recovery Length/Penetration Depth:
95%

Sediment Core Log

SSED-SB-20

Sheet 1 of 1

Project: **Draft RI Report, 8th Ave Terminals, Inc.**	Location: **7400 8th Ave S., Seattle WA**	Tube Length (ft): **15.0**
Project #: **131044-01.01**	Surface Water Elevation (MLLW): **12.6ft**	Penetration Depth (ft): **14ft**
Client: **DeNovo Seattle, LLC**	Water Depth (ft): **LL: -19.2ft**	Field Recovery Length (ft): **12.1ft**
Collection Date: **12/13/14**	Mudline Elevation (ft MLLW): **-6.5ft**	Process Date: **12/16/14**
Contractor: **MSS**	Northing: **198726.831** Easting: **1272437.196**	Process Method: **Cut tube**
Vessel: **Nancy Anne**	Horiz. Datum: **NAD83 SP WA N, US Ft** Vert. Datum: **MLLW**	Sample Quality: **Good**
Operator: **Bill Jaworski**	Method/Tube ID: **Vibracore/3.75"**	Logged By: **EM/BW**

Recovered Depth (ft)	Recovered Interval & Sample	Chemical Analysis	PID Measurement	Sediment Description Samples and Descriptions are in Recovered Depths. Classification Scheme: ASTM	Estimated In-situ Elevation (MLLW)
0			0	POORLY GRADED SAND (SP): 0-3.1ft: Moist, medium dense, gray, 5% fines, 95% fine to medium sand. @0.2-0.3ft: 1/2 in bed of dark gray to black SILTY SAND. Contains organics (wood fragments). @2.8ft: Fines content increases downcore.	-7.0
3	SSED-SB-20-2-4	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs		SILTY SAND (SM): 3.1-10.2ft: Moist, medium dense, dark gray with gray mottling, 40% fines, 60% fine sand. Contains occasional organics (sticks, wood fragments). Contains stratified beds of poorly graded sand with silt, 85% fine sand, 15% fines, and beds of SILT with sand, 85% fines, 15% fine sand.	-8.0 -9.0 -10.0
6	SSED-SB-20-5-7	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs	0		-11.0 -12.0 -13.0
9	SSED-SB-20-8-10	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs			-14.0 -15.0 -16.0
10				SILT WITH SAND (ML): 10.2-11.8ft: Moist, medium stiff to stiff, gray with dark gray mottling, 85% fines, 15% fine sand. Contains stratified beds of sand with silt, 30% fines, 70% fine sand. @10.6ft: 3.5 in wood fragment. End of core @11.8ft.	-17.0
11			0		-18.0

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Notes: 1. Attempt 1 of 1.

Calculated Recovery
Recovery Length/Penetration Depth:
86%

SOIL BORING LOGS

Soil Boring Log

Sheet 1 of 1

DMW-6A

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272867.6** Easting: **198906.288**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/26/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0		0.0			0.0-0.6ft: ASPHALT. Dark gray, coarse, angular, fine.	0
1					0.6-1.1ft: SAND WITH GRAVEL (SP). 85% sand (medium to coarse, poorly graded), 15% gravel (fine, angular).	1
2	91		DMW6A-2-3		1.1-2.0ft: POORLY GRADED SAND (SP). Light brown, damp, medium dense, 90% sand (fine to medium, poorly graded), 5% fines (silt), 5% gravel (fine, subrounded).	2
3			DMW-6A-3-3.5		2.0-3.0ft: FILL. Red-brown to black, damp, medium dense, organics (woody fibers), oxidation.	3
4					3.0-3.7ft: FILL. Ash-like debris, white to light gray, dense, dry, chalky.	4
5					3.7-5.3ft: POORLY GRADED SAND (SP). Dark gray, damp, dense, 95% sand (fine), 5% gravel (fine, subrounded)	5
6			DMW6A-6.5-8		@4.6ft: Pocket, rubble/fill, same as @2.0ft.	6
7	64				5.3-6.1ft: ASPHALT-like, light gray, dense.	7
8			DMW6A-8-10		6.1-13.6ft: POORLY GRADED SAND (SP). Gray, damp, dense, 95% sand (fine to medium, fines upward with layers 8in thick), 5% fines (silt).	8
9					@6.5-6.9ft: Sand (medium to coarse).	9
10					@10.5ft: Becomes wet, standing water.	10
11			DMW6A-11-13		@11.9-12.5ft: Oxidation.	11
12	74					12
13						13
14					13.6-20.0ft: POORLY GRADED SAND (SP). Red-brown, wet, dense, 95% sand (medium to coarse), 5% fines (silt).	14
15			DMW6A-15-17			15
16					@16.5ft: Color is dark gray.	16
17	91					17
18			DMW-6A-18-20			18
19						19
20					End of core @20.0ft below ground surface.	20
21						21
22						22
23						23
24						24
25						25

Soil Description
Samples and descriptions are in recovered depths.
Classification scheme: USCS

Notes:

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Soil Boring Log

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EB-03

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273011.425** Easting: **199620.896**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/05/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0					Samples and descriptions are in recovered depths. Classification scheme: USCS	
0–2	80	0.0	EB-03-3-5		0-1.2ft: ASPHALT. Light gray, gravel, fine, angular. 1.2-2.4ft: SILTY SAND WITH GRAVEL (SM). Light brown to gray to dark brown (each approximately 0.4ft thick). 70% sand (fine to medium, poorly graded), 15% gravel (fine, angular), 15% fines (stiff), dry, dense. 2.4-4.5ft: Dark gray with red and white grains, damp, dense, 95% sand (fine to medium, predominantly medium, poorly graded), 5% fines (silt). @2.4ft: Anthropogenic debris- light pink, brick like debris, coarse gravel size, angular.	
4–6						
6–8	82	0.0	EB-03-6-8 EB-03-8-10		4.5-10.8ft: Dark gray, wet, medium dense, 90% sand (fine to medium, predominantly fine), 10% fines (silt), with interbedded SILT (ML), dark gray, with black mottling, (slight) wet, stiff, 90% fines (silt, holds shape), 10% sand (fine to medium, poorly graded). Gray grains.	
8–10						
10–12	96	0.0	EB-03-11-13		10.8-20.0ft: Dark gray, wet, dense, 85% sand (fine to medium, predominantly fine, poorly graded), 15% fines (silt).	
12–14						
14–16						
16–18	96	0.0			End of core @20.0ft below ground surface.	
18–20						
20–25						

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Notes:

Soil Boring Log

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EB-06

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273355.786** Easting: **199660.328**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/09/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0					Samples and descriptions are in recovered depths. Classification scheme: USCS	
0–2	62	0.0	EB-06-2-4		0.0-0.1ft: MOSS. Green, fresh. 0.1-0.5ft: POORLY GRADED GRAVEL WITH SAND (GP). 75% gravel (fine to coarse, angular), 15% sand (fine to medium), 10% fines (silt). 0.5-1.7ft: SILTY SAND WITH GRAVEL (SM). Dark brown, moist, medium dense, 70% sand (fine to medium, poorly graded), 15% gravel (fine, angular), 15% fines (silt and soil). @1.45-1.7ft: Color is yellow brown.	
2–6					1.7-9.35ft: POORLY GRADED SAND (SP). 100% sand (medium to coarse, poorly graded), white to light gray, moist, medium dense. @2.25ft: Same as above @1.7, but 95% sand (fine to medium, predominantly medium), 5% fines (silt), and sand is brown. @6.1ft: Sand is predominantly fine.	
6–8	62	0.0	EB-06-6-8			
8–10			EB-06-8-10			
10–12	96	0.0	EB-06-12-14		9.35-12.1ft: SILT (ML). Brown with orange-brown mottling, moist, stiff, 90% fines (silt, holds shape), 10% sand (fine to medium, predominantly fine). @10.0ft: Grades to wet, standing water.	
12–15					12.1-20.0ft: SILTY SAND (SM). Brown, wet (standing water), medium dense, 85% sand (fine to medium, predominantly fine, poorly graded), 15% fines (silt).	
15–20	96	0.0	EB-06-15-17		End of core @20.0ft below ground surface.	
20–25						

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Notes:

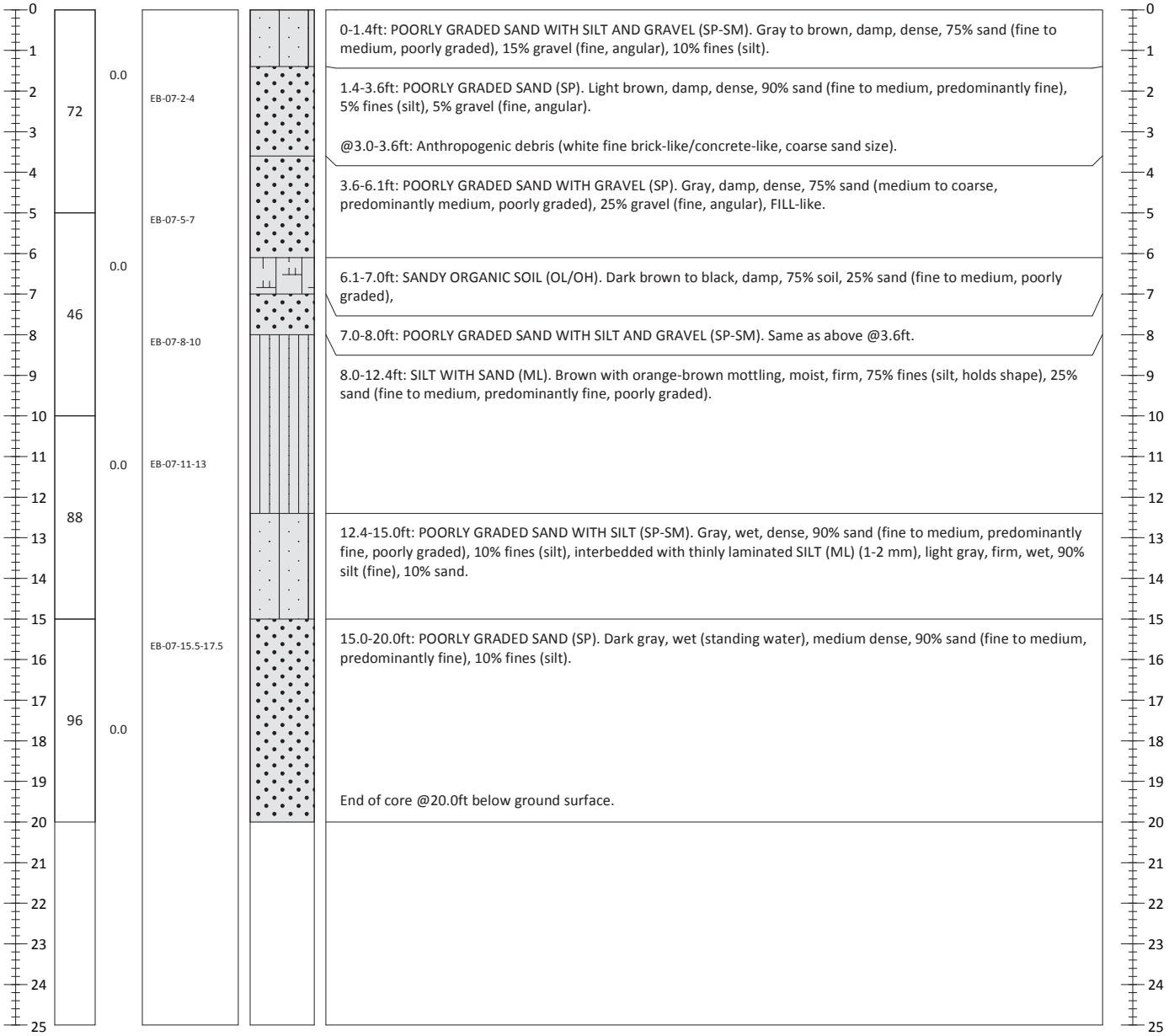
1. Duplicates at 2-4ft, 6-8ft, 8-10ft, and 12-14ft.

Soil Boring Log

EB-07

Sheet 1 of 1

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273372.891** Easting: **199564.936**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/05/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**



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Notes:

Soil Boring Log

Sheet 1 of 1

EB-11-A

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273191.937** Easting: **199261.106**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/04/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0-5	86	0.0	EB-11-3-5		0-0.4ft: ASPHALT. Gray, gravel, fine, angular. 0.4-2.5ft: POORLY GRADED SAND (SP). Light brown to dark gray, dry, medium dense, 90% SAND (fine to medium, poorly graded), 10% gravel (fine, angular). 2.5-6.1ft: POORLY GRADED SAND WITH GRAVEL (SP). Light brown, dry, medium dense, 85% sand (fine to medium, predominantly medium, poorly graded), 15% gravel (fine, angular). @5.0-6.1ft: Anthropogenic debris (brick-like fragments, white -concrete-. White to light red, dry, loose (fill-like).	0-5
5-10	80	0.0	EB-11-5-7 EB-11-8-10		6.1-11.2ft: POORLY GRADED SAND (SP). Brown, damp, dense, 95% sand (fine to medium, predominantly fine, poorly graded), 5% fines (silt). @8.0ft: Sand grades to dark gray, predominantly medium, grains red, white, and gray. @10.0ft: Sand is predominantly fine.	5-10
10-15	82	0.0			11.2-15.0ft: SILTY SAND (SM). Brown to red-brown, wet, dense, 85% sand (fine to medium, poorly graded), 15% fines (silt), potential oxidation. @13.0ft: Graded to gray, no potential oxidation.	10-15
15-20	100	0.0			15.0-20.0ft: POORLY GRADED SAND (SP). Dark gray, moist to wet, dense, 95% sand (fine to medium, predominantly fine, poorly graded), 5% fines (silt). @18.5-18.7ft: Lens SILT (ML). Gray, stiff, damp, 95% fines (silt), 5% sand (fine to medium), organic (dark brown plant fibers). End of core @20.0ft below ground surface.	15-20
20-25						20-25

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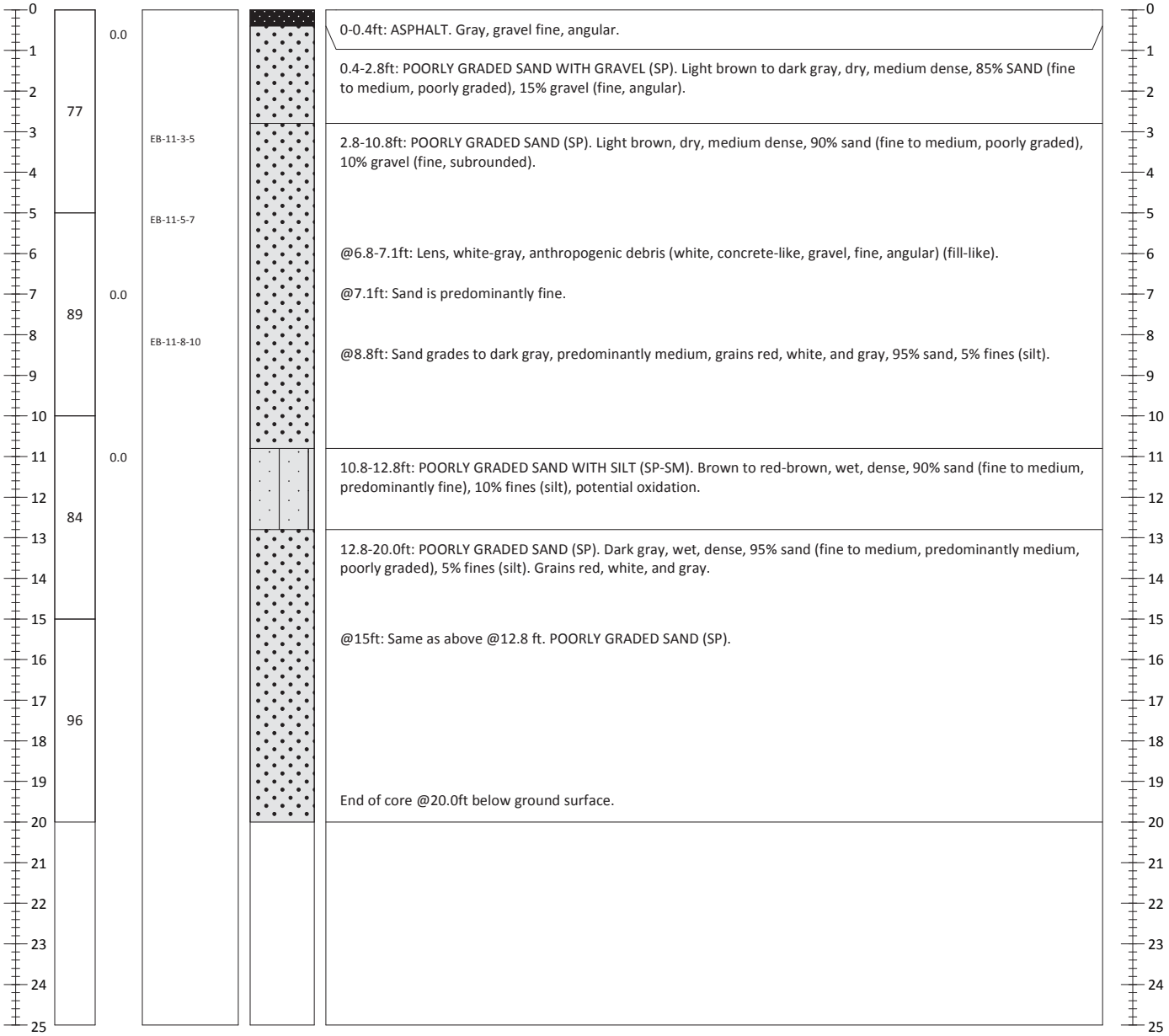
Notes:

1. VOCs and TPH G taken from EB-11-A.
2. All samples homogeneous from EB-11-A&B for volume requirements.

Soil Boring Log

EB-11-B

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273191.937** Easting: **199261.106**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/04/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**



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Notes:

1. EB-11-B homogenized with EB-11-A

Soil Boring Log

Sheet 1 of 1

EB-12-C

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273306.837** Easting: **199288.561**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/04/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0					0-0.5ft: ASPHALT. Gray, gravel, fine, angular.	0
1					0.5-1.1ft: POORLY GRADED SAND (SP). Brown, dry, medium dense, 90% sand (fine to medium, poorly graded), 10% gravel (fine, angular).	1
2	76		EB-12-2-4		1.1-20.0ft: POORLY GRADED SAND (SP). Brown, damp, dense, 90% sand (fine to medium, poorly graded), 5% fines (silt), 5% gravel (fine, subrounded).	2
3						3
4					@3.4ft: Anthropogenic debris (white concrete-like, gravel, angular).	4
5			EB-12-5-7			5
6					@6.1-6.4ft: Anthropogenic debris (white, concrete-like, fine brick-like), gravel, fine, diesel-like odor.	6
7	74				@7.3ft: Sand grades to dark gray, predominantly fine, 95% sand, 5% fines (silt).	7
8			EB-12-8-10			8
9					@9.0-9.2ft: Lens, black, fused, glassy, sandy material, coal-like fragments, grades to dark gray/blue @ bottom.	9
10						10
11					@11.5-12.5ft: Layer, POORLY GRADED SAND WITH SILT (SP-SM). Dark gray/blue, 85% sand (fine to medium, predominantly fine, poorly graded), 5% gravel (fine, angular), 10% fines (silt), anthropogenic debris (red brick-like fragments and white-gray concrete-like).	11
12	76				@12.3-13.3ft: Anthropogenic debris (white-gray, concrete-like, gravel, coarse, angular).	12
13						13
14						14
15			EB-12-15-17		@15.0ft: Same as above @7.3 ft, POORLY GRADED SAND (SP), dark gray, damp, dense, 95% sand (fine to medium, predominantly fine, poorly graded), 5% fines (silt).	15
16						16
17	98					17
18			EB-12-18-20			18
19						19
20					End of core @20.0ft bgs.	20
21						21
22						22
23						23
24						24
25						25

Soil Description
Samples and descriptions are in recovered depths.
Classification scheme: USCS

Notes:

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Soil Boring Log

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EB-13

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273292.581** Easting: **199482.172**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/05/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0–6.5	46	0.0	EB-13-2-4		0-0.6ft: POORLY GRADED GRAVEL WITH SAND (GW). Gray, wet, dense, 80% gravel (fine to coarse, angular), 15% sand (fine to medium), 5% fines (silt). 0.6-6.5ft: POORLY GRADED SAND WITH GRAVEL (GP). Brown, damp, dense, 85% sand (medium to coarse, poorly graded), 15% gravel (fine to coarse) subrounded to subangular (back-fill like).	0–6.5
6.5–10	62	0.0	EB-13-8-10		6.5-6.9ft: POORLY GRADED GRAVEL (GP). Gray, damp, dense, 90% gravel (fine, angular) 10% sand (medium to coarse). 6.9-10.0ft: POORLY GRADED SAND WITH SILT (SP-SM). Dark brown, damp, 90% sand (fine to medium, predominantly fine, poorly graded), 10% fines (silt).	6.5–10
10–12.9	86	0.0	EB-13-11-13		10.0-12.9ft: SILTY SAND (SM). (Standing water), gray, wet, medium dense, 80% sand (fine to medium, poorly graded, predominantly fine), 20% fines (silt), potential oxidation, red-brown bands @ top.	10–12.9
12.9–20	96	0.0	EB-13-13-15 EB-13-16-18		12.9-20.0ft: POORLY GRADED SAND WITH SILT (SP-SM). Gray, wet (standing water), medium dense, dark, gray, wet, 90% sand (fine to medium, predominantly fine, poorly graded, 10% fines (silt) interbedded with SILT (ML), light gray, wet (standing water), firm, 90% fines (silt), 10% sand (fine to medium) - predominantly (SP-SM). End of core @20.0ft bgs.	12.9–20

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Notes:

Soil Boring Log

Sheet 1 of 1

EB-19

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272741.859** Easting: **199463.672**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/03/2014** Logged By: **LH/CF**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0		0.0			0-0.4ft: ASPHALT. Gray, gravel, fine to coarse.	0
1					0.4-1.35ft: POORLY GRADED SAND WITH GRAVEL (SP). Light gray to white to red to dark gray, dry, loose, 70% sand (fine to medium), predominantly medium, poorly graded, anthropogenic, brick and wood fragments, concrete, 30% gravel (fine to coarse, angular) FILL.	1
2	54		EB-19-1.5-4			2
3					1.35-10.9ft: POORLY GRADED SAND (SP). Dark gray, moist, dense, 95% sand (fine to medium, poorly graded), 5% fines (silt).	3
4						4
5		0.0			@5.4-5.9ft: White to light gray, dry, loose. 70% sand (fine to medium, predominantly medium), 30% gravel (fine to coarse), angular.	5
6			EB-19-6-8			6
7	72					7
8			EB-19-8-10			8
9						9
10						10
11		0.0			10.9-14.0ft: SILT (ML). Light gray, moist, stiff, 95% fines (clay/silt, predominantly silt, holds shape, medium plasticity, organics, wood fibers), 5% sand (fine to medium, predominantly fine, poorly graded).	11
12	100					12
13						13
14					14.0-15.0ft: SILT Y SAND (SM). Dark gray, wet, dense, 80% sand (fine to medium, predominantly fine), 20% fines (silt).	14
15		0.0			15.0-20.0ft: POORLY GRADED SAND (SP). Dark gray, wet, poorly graded. 95% Sand (fine to medium, poorly graded), 5% fines (silt). Grains are red, white, and gray.	15
16						16
17	100				@17.4ft: Sand is moist.	17
18						18
19						19
20					End of core @20.0ft bgs.	20
21						21
22						22
23						23
24						24
25						25

Notes:

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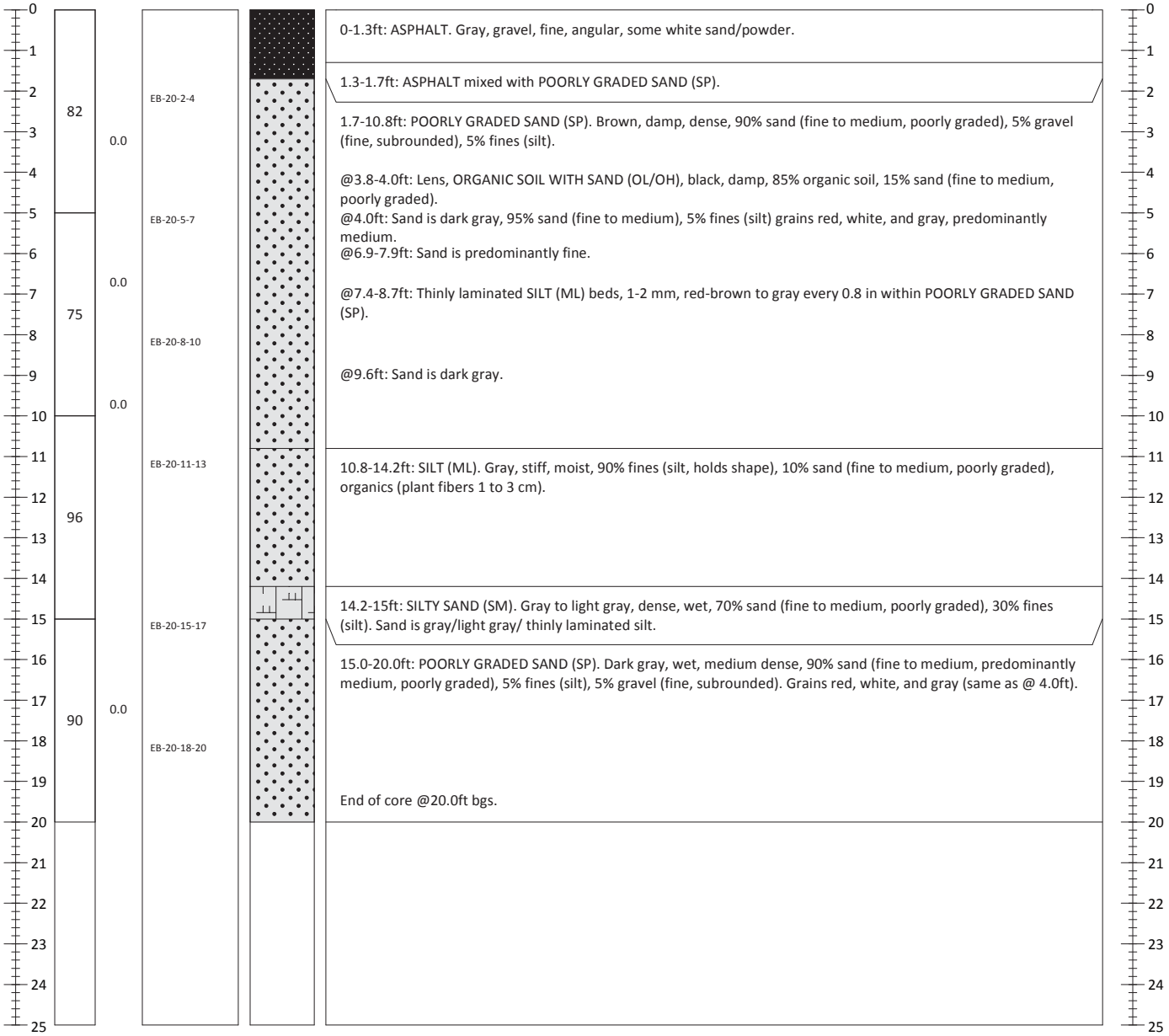
Soil Boring Log

Sheet 1 of 1

EB-20

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272668.366** Easting: **199326.275**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/05/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**



Notes:

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Soil Boring Log

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EB-22

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272811.189** Easting: **199378.526**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/03/2014** Logged By: **LH/CF**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0					Samples and descriptions are in recovered depths. Classification scheme: USCS	
0–2	63	0.0	EB-22-2-4		0-0.9ft: ASPHALT. Gray, gravel, fine, coarse. 0.9-7.3 ft: POORLY GRADED SAND WITH GRAVEL (SP). Light gray to red pink, gray, red and pink. Dry, loose. 30% gravel (fine to coarse) angular, 70% sand (fine to medium, predominantly medium, poorly graded anthropogenic brick fragments, concrete) FILL.	
5–6			EB-22-6-8			
7–8	78	0.0	EB-22-8-10		7.3-11.0ft: POORLY GRADED SAND (SP). Dark gray, moist, dense, 95% sand (fine to medium, poorly graded), 5% fines (silt).	
10–11			EB-22-11-13		11.0-14.2ft: SILT (ML). Light gray, moist, stiff, 95% fines, clay/silt, predominantly silt, holds shape, medium plasticity. Organics, plant fibers, dark brown, wood fragments, 5% sand (fine to medium, poorly graded).	
12–13	94	0.0				
14–15			EB-22-15-17		14.2-15.0ft: SILTY SAND (ML). Dark gray, moist, dense, 85% sand (fine to medium, predominantly fine, poorly graded), 15% fines (silt).	
15–17	96	0.0			15.0-20.0ft: POORLY GRADED SAND (SP). Dark gray, moist, dense, 95% sand (fine to medium, predominantly fine, poorly graded), 5% fines (silt). @16.8-17.5ft: Sand grades to medium. @17.5-18.1ft: Same as above @14.2 ft. End of core @20.0ft bgs.	
20–25						

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Notes:

Soil Boring Log

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EB-23

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272955.912** Easting: **199358.836**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/03/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0	80	0.0	EB-23-3-5		0.1-0.4ft: ASPHALT. Gray, gravel, fine, angular.	0
1					0.4-1.1ft: Transition asphalt to POORLY GRADED SAND (SP).	1
2					1.1-10.8ft: POORLY GRADED SAND (SP). Light brown, dry, medium dense, 95% SAND (fine to medium, predominantly medium, poorly graded), 5% gravel (fine, angular).	2
3						3
4					@4.25-4.85ft: Black, damp, medium dense, 85% SAND (fine to medium, poorly graded), 15% gravel (fine, subrounded), oxidation @4.25 ft.	4
5			EB-23-5-7			5
6	64	0.0			@5.0ft: Sand is gray, loose to medium dense.	6
7						7
8			EB-23-8-10			8
9		0.0				9
10						10
11	96				10.8-13.2ft: SILT WITH SAND (ML). Gray, stiff, moist, 80% fines (clay/silt, holds shape, predominantly silt), 20% sand (fine to medium, predominantly fine), organics (plant fibers and wood fragments).	11
12						12
13						13
14					13.2-17.2ft: SILTY SAND (SM). Dark gray, wet, dense, 85% SAND (fine to medium, predominantly fine), 15% fines (silt).	14
15					@15.0ft: Same as above @13.2 ft. @15.5-16.0ft: Lens, same as above @1.1 ft.	15
16		0.0				16
17						17
18					17.2-20.0ft: POORLY GRADED SAND (SP). Dark gray, wet, dense, 95% SAND (fine to medium, poorly graded), <5% fines (silt), grains red, white, and gray.	18
19						19
20					End of core @20.0ft bgs.	20
21						21
22						22
23						23
24						24
25						25

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Notes:

Soil Boring Log

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EB-25

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273088.975** Easting: **199291.545**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/02/2014** Logged By: **LH**	Total Depth (ft): **50**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0					Samples and descriptions are in recovered depths. Classification scheme: USCS	
0–5	76	0.0	EB-25-2-4		0-0.7ft: ASPHALT. Gray, coarse, fine, angular.	
					0.7-1.0ft: POORLY GRADED SAND WITH GRAVEL (SP). Light brown to gray, dry, dense, 80% SAND (fine to medium, poorly graded), 20% gravel (fine, angular).	
					1.0-9.0ft: POORLY GRADED SAND (SP). Light brown, dry, dense, 90% SAND (fine to medium, poorly graded), 10% gravel (fine, subrounded).	
					@3.0ft: Sand is 95% SAND (fine to medium), 5% gravel (fine, subrounded).	
5–7.5			EB-25-5.5-7.5		@4.8-5.0ft: Lens, black, damp, dense, 95% SAND (fine to medium, poorly graded), 5% gravel (subrounded to subangular)	
7.5–10	78	0.0			@8.9-9.0ft: Zone of red-brown potential oxidation.	
10–12.5			EB-25-10.5-12.5		9.0-17.4ft: POORLY GRADED SAND WITH SILT (SP-SM). Dark brown, moist, dense, 90% SAND (fine to medium), predominantly fine, poorly graded, 10% fines (silt).	
		0.0			@10.0-10.7ft: Same as above at 1.0ft.	
					@11.4ft: Grades to wet.	
12.5–15	96				@12.7-13.7ft: Organics (wood fragments), anthropogenic debris (plastic-like fibers, 4 mm).	
			EB-25-13-15		@14.2ft: Grades to moist.	
15–17.5			EB-25-15-17			
17.5–20	82	0.0			17.4-40.0ft: POORLY GRADED SAND (SP). Dark gray, moist, dense, 100% SAND (fine to medium, predominantly medium, poorly graded).	
20–22.5	76				@25.0-30.0ft: Core liner crumpled on itself, retrieval poorly graded sand, recovery not available.	
22.5–25					@33.4ft: Organic (wood debris, fresh 2x1 in).	

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Notes:

Soil Boring Log

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EB-25

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273088.975** Easting: **199291.545**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/02/2014** Logged By: **LH**	Total Depth (ft): **50**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
25–50	NA				17.4-40.0ft: POORLY GRADED SAND (SP). Dark gray, moist, dense, 100% SAND (fine to medium, predominantly medium, poorly graded).	25–50
30–35	82				@35.0-37.0ft: 5% fines (silt). @35.9ft: Gravel, coarse, subangular, 0.25x1 in. @36.6ft: Grades to predominantly fine sand. @38.5ft: Anthropogenic debris (razor-blade-like, 1/8 in).	
35–40	92					
40–41					40-41.8ft: SILTY SAND (SM). Dark, gray, wet, dense, 80% sand (fine to medium, predominantly fine, poorly graded, 20% fines (silt).	
41–45	92				41.8-45.0ft: POORLY GRADED SAND (SP). Dark, gray, wet, dense, 95% SAND (fine to medium, predominantly medium, poorly graded), 5% fines (silt) with thinly laminated gray SILT (ML) (1 to 2 mm) beds.	
45–46					45.0-46.9ft: SILTY SAND (SM). Same as above at 40.0ft.	
46–50	98				46.9-50.0ft: POORLY GRADED SAND (SP). Dark, gray, wet, dense, 95% SAND (fine to medium, predominantly fine, poorly graded), 5% fines (silt). Grains white, red, and gray. End of core @50.0ft bgs.	

Soil Description
Samples and descriptions are in recovered depths.
Classification scheme: USCS

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EB-27

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273060.792** Easting: **199150.959**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/04/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0					0-0.3ft: ASPHALT. Gray, fine, angular.	0
1					0.3-0.8ft: POORLY GRADED SAND (SP). Brown to gray, asphalt mixed with POORLY GRADED SAND (SP).	1
2	90	0.0	EB-27-2.5-4.5		0.8-8.0ft: POORLY GRADED SAND (SP). Brown, damp, dense, 90% sand (fine to medium, poorly graded), 10% gravel (fine, angular).	2
3					@1.2ft: Grades to black, organics (wood fragments, 0.25x1.5 in), sand (predominantly fine).	3
4					@1.9-2.0ft: Anthropogenic debris- white, concrete/fire brick-like, coarse sand size.	4
5			EB-27-5-7		@2.7ft: Grades to brown with gray mottling.	5
6					@6.5ft: Grades to black, sand predominantly fine, anthropogenic debris (red, brick-like fragments, 1/8 in).	6
7	90	0.0			@7.0ft: Same as above at 8.0ft, but 95% sand (fine to medium, poorly graded). Grains are red, white, and gray, 5% fines (silt).	7
8			EB-27-8-10		8.0-20.0ft: POORLY GRADED SAND (SP). Brown, damp, dense, 90% sand (fine to medium, predominantly fine, poorly graded), 10% fines (silt).	8
9						9
10						10
11						11
12	90	0.0				12
13						13
14						14
15					@15.0ft: Same as above @8.0ft, grades to wet.	15
16						16
17	93	0.0				17
18						18
19						19
20					End of core @20.0ft bgs.	20
21						21
22						22
23						23
24						24
25						25

Soil Description
Samples and descriptions are in recovered depths.
Classification scheme: USCS

Notes:

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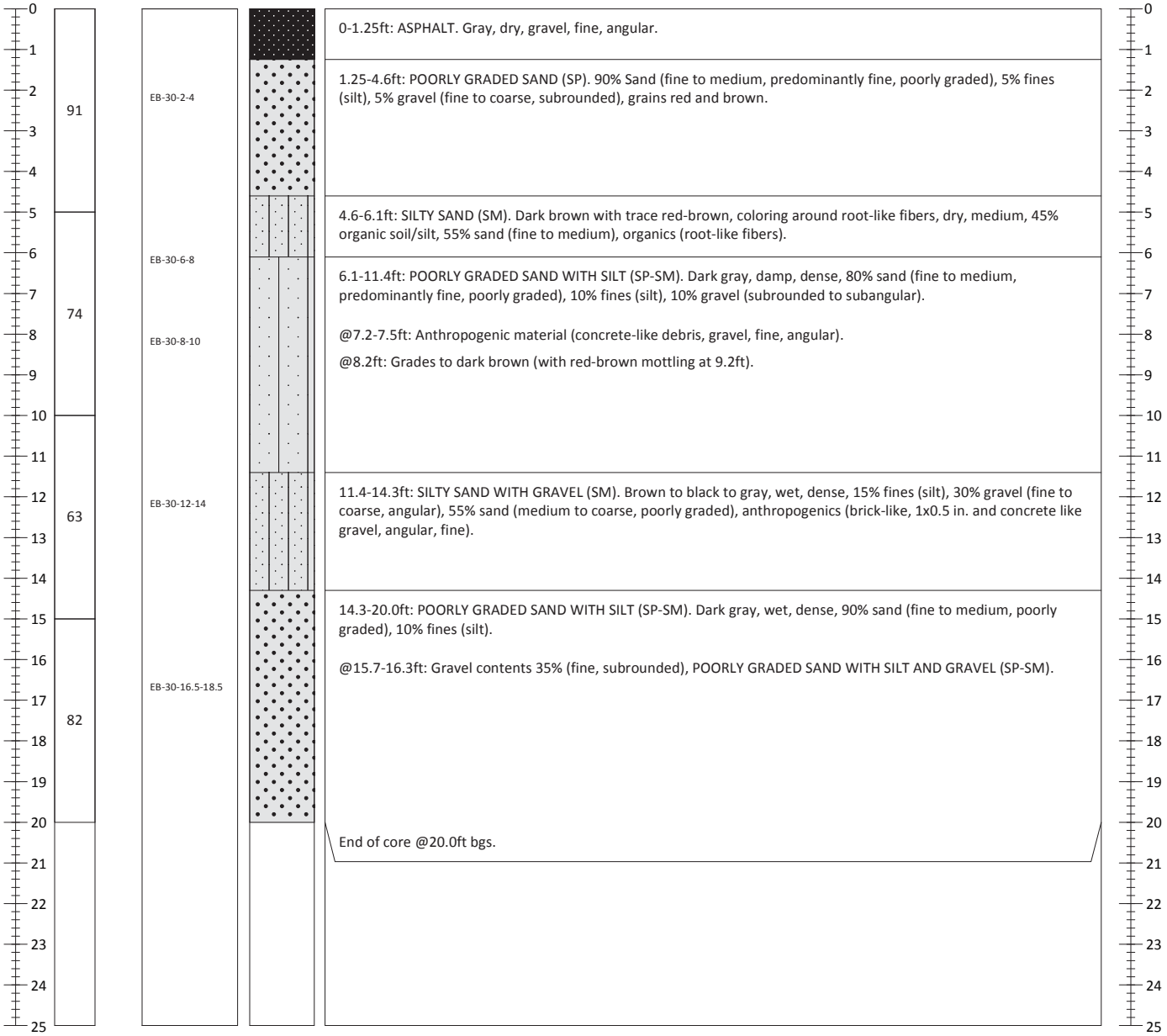
Soil Boring Log

EB-30-D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273203.957** Easting: **199059.532**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/08/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**



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Notes:

Soil Boring Log

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EB-31-B

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273274.776** Easting: **199187.548**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/14/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0					Samples and descriptions are in recovered depths. Classification scheme: USCS	
0–2	66	0.0	EB-31-2-4		0-0.4ft: ASPHALT. Gray, gravel, fine, angular. 0.4-1.35ft: POORLY GRADED SAND WITH GRAVEL (SP). Light brown to gray, dry, medium dense, 75% sand (fine to medium, poorly graded), 25% gravel (fine, angular).	
2–5					1.35-8.3ft: POORLY GRADED SAND (SP). Brown, damp, dense, 90% sand (fine to medium, poorly graded), 5% fines (silt), 5% gravel (fine, angular).	
5			EB-31-5-7		@5.3-5.5ft: Anthropogenic debris (red, brick-like gravel, angular, and concrete like debris, white).	
5–8	72	0.0			@7.1ft: Grades to dark gray. @7.8-8.0ft: Organics (wood fragments) (SP-SM)	
8			EB-31-8-10			
8–10					8.3-10.5ft: POORLY GRADED SAND WITH GRAVEL AND SILT (SP-SM). Dark gray, damp, dense, 70% sand (fine to medium, poorly graded), 20% gravel (fine to coarse, subangular), 10% fines (silt). @10.0ft: Grades to wet.	
10–12	78	0.0	EB-31-12.5-14.5		10.5-15.9ft: SILTY GRAVEL WITH SAND (SP). Dark gray to gray to black, wet, dense, 50% gravel (fine to coarse, angular), 35% sand (medium to coarse, poorly graded), 15% fines (silt). @12.4ft: Grades to black, petroleum like odor, organics, substantial wood fragments, 3x6..	
12–15		0.0				
15–16	76				15.9-20.0ft: POORLY GRADED SAND (SP). Dark gray, moist, dense, 90% sand (fine to medium, predominantly fine, poorly graded), 10% fines (silt). Grains are gray.	
16–18			EB-31-18-20		@18.4ft: Grades to 95% sand (fine to medium, predominantly medium, poorly graded), 5% fines. Grains red, white, and gray.	
18–20					End of Core @20.0ft bgs.	
20–25						

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Notes:

1. VOCs taken from EB-31-B.
2. All other samples homogenized with B&C cores.

Soil Boring Log

EB-31-C

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273274.776** Easting: **199187.548**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/04/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0					Samples and descriptions are in recovered depths. Classification scheme: USCS	
0					0-0.7ft: ASPHALT. Dark gray, gravel, fine, angular.	
1					0.7-1.4ft: POORLY GRADED SAND WITH GRAVEL (SP). Light brown to gray, dry, medium dense, 80% sand (fine to medium, poorly graded), 20% gravel (fine, angular).	
2	69	0.0	EB-31-2-4		1.4-8.6ft: POORLY GRADED SAND (SP). Light brown, dry to damp, dense, 95% sand (fine to medium, poorly graded), 5% fines (silt).	
3						
4						
5			EB-31-5-7			
6		0.0				
7	76				@7.2ft: Grades to dark gray, and pocket of anthropogenic debris (white, concrete-like rubble).	
8			EB-31-8-10			
9					8.6-16.5ft: SILTY SAND WITH GRAVEL (SM). Dark gray to brown, wet, dense, 45% sand (fine to medium, poorly graded), 35% gravel (fine to coarse, angular), 20% fines (silt).	
10		0.0				
11						
12	69		EB-31-12.5-14.5		@12.9-15.0ft: Organic material (wood piece), sulfur-like odor.	
13						
14						
15					@16.1ft: Organics (wood fragments, thin), sulfur-like odor.	
16		0.0				
17	62				16.5-20.0ft: POORLY GRADED SAND (SP). Dark, gray, wet, dense, 90% sand (fine to medium, predominantly fine), 10% fines (silt). Grains are gray.	
18			EB-31-18-20		@19.0ft: Same as above @ 16.5 but 95% sand (predominantly medium). Grains red, white, and gray.	
19					End of core @20.0ft below ground surface.	
20						
21						
22						
23						
24						
25						

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Notes:

1. EB-31-C homogenized with EB-31-B.

Soil Boring Log

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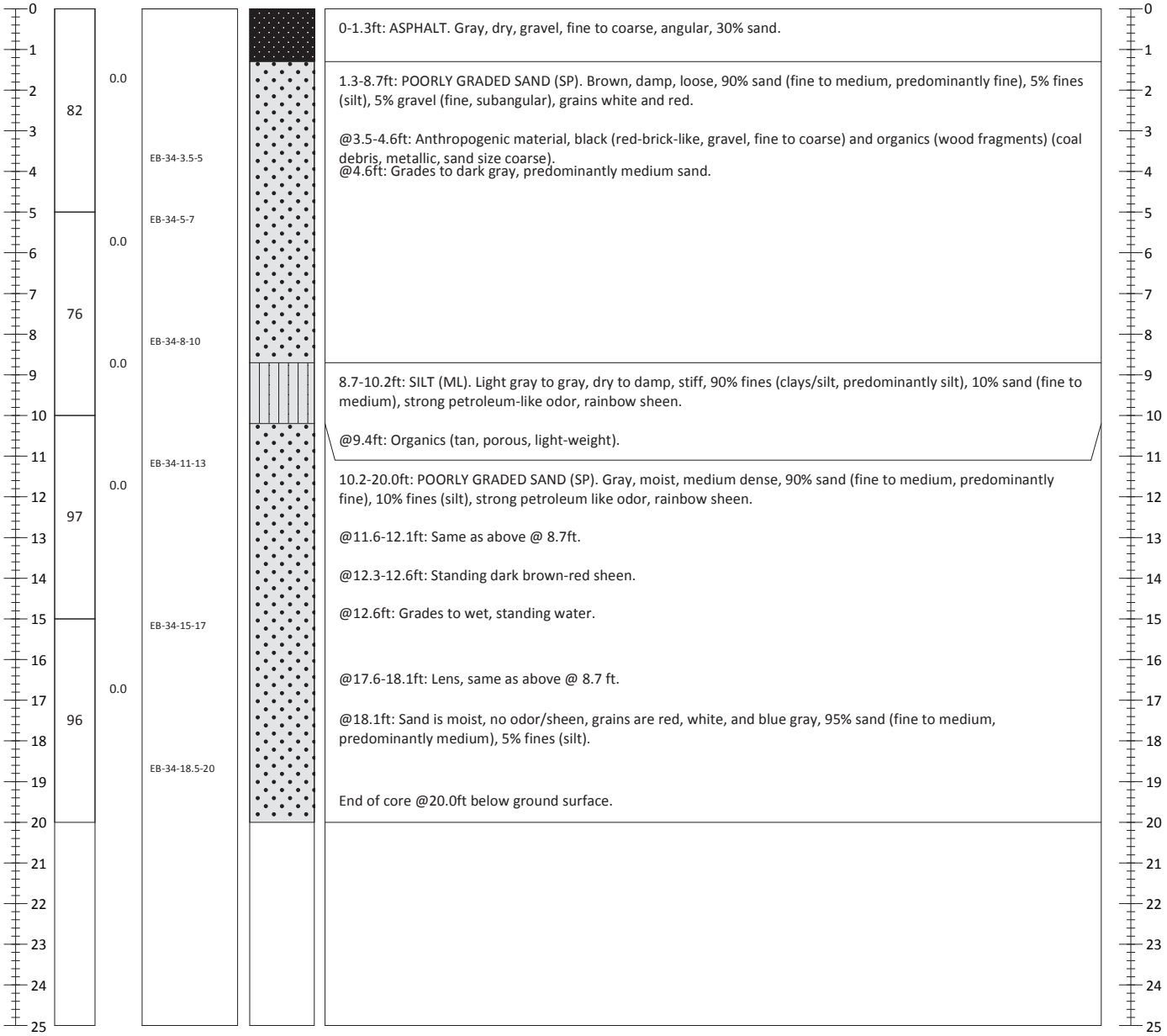
EB-34

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272721.267** Easting: **199180.888**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/09/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**



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Soil Boring Log

EB-35

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Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272887.837** Easting: **199174.262**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/09/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0					Samples and descriptions are in recovered depths. Classification scheme: USCS	
0–2	77	0.0	EB-35-2-4		0-0.7ft: ASPHALT. Dark gray, dry, loose, fine gravel, angular and coarse sand.	
					0.7-1.4ft: POORLY GRADED SAND (SP). Transition asphalt to POORLY GRADED SAND (SP) described @1.4 ft.	
					1.4-8.6ft: POORLY GRADED SAND (SP). Light brown, damp, medium dense, 90% sand (fine to medium), 5% fines (silt), 5% gravel (subrounded to subangular).	
4–5					@4.4-6.2ft: Fill/rubble/anthropogenic debris, dark gray to blue-gray, gravel (fine to coarse gravel size, concrete-like debris).	
5–7	78	0.0	EB-35-5-7		@6.2ft: Sand grades to dark gray, sand grains are red, white and gray.	
7–9			EB-35-8.5-10		8.6-14.0ft: SILT (ML) beds (1-3 in thick, light gray, dry, stiff, 90% fines (silt), 10% sand (fine to medium, predominantly fine, poorly graded), holds shape, interbedded with POORLY GRADED SAND (SP), dark gray, moist, dense, 95% sand (fine to medium, predominantly fine, poorly graded).	
9–10			EB-35-10-12			
10–12	97	0.0			@13.0ft: Sand grades to predominantly medium.	
12–15			EB-35-15-17		14.0-20.0ft: POORLY GRADED SAND (SP). Dark gray, moist, dense, 95% sand (fine to medium, predominantly medium), 5% gravel (fine), grains red, white, and blue gray.	
15–20	97	0.0			End of core @20.0ft below ground surface.	
20–25						

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Notes:

Soil Boring Log

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EB-36-H

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272766.811** Easting: **199133.546**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/03/2014** Logged By: **LH**	Total Depth (ft): **50**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0–2	68	0.0			0-0.6ft: ASPHALT. Gray, gravel, fine, coarse. 0.6-9.0ft: POORLY GRADED SAND (SP). Light brown to brown, 90% SAND (fine to medium, poorly graded), 5% fines (silt), 5% gravel (fine, angular), dry, medium dense. @2.4-2.7ft: Gravel content is 10%. @4.3-5.0ft: Layer, transition, dry, medium dense, black to brown, 85% SAND (fine to medium), 15% gravel (fine, angular).	0–2
5–7	62	0.0			@5.0ft: Sand is black.	5–7
10–12	94		EB-36-11-13		9.0-13.3ft: SILTY SAND (SM). Gray, damp, dense, 80% SAND (fine to medium, poorly graded, predominantly fine), 20% fines (silt, holds shape). @9.4-10.0ft: Organics (plant fibers). @10.0-10.7ft: Same as above at 0.6ft.	10–12
15–17	96	0.0	EB-36-15.5-17.5		13.3-20.5ft: POORLY GRADED SAND (SP). Interbedded POORLY GRADED SAND (SP), 95% SAND (fine to medium, predominantly fine, poorly graded), 5% fines (silt), 1.5 to 2 in thick, gray to dark gray, dense, to SILTY SAND (SM), 0.4 to 0.6 in thick, dark gray, wet, dense, 60% SAND (fine to medium, predominantly fine, poorly graded), 40% fines (silt), does not hold shape. @18.1ft: Grades to predominantly medium sand grains.	15–17
20–22	96	0.0			@20.5-45.0ft: 100% SAND (fine to medium, predominantly medium, poorly graded), red, white, and gray grains.	20–22

Notes:

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Soil Boring Log

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EB-36-H

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272766.811** Easting: **199133.546**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/03/2014** Logged By: **LH**	Total Depth (ft): **50**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	**Soil Description** Samples and descriptions are in recovered depths. Classification scheme: USCS	Depth (ft)
25–30	90	0.0			@27.5-29.0ft: Same as above @20.5 in, but 5% gravel (fine, angular).	25–30
30–35	90	0.0			30.0-45.0ft: POORLY GRADED SAND (SP). Same as above at 25.0ft, POORLY GRADED SAND (SP) except grains predominantly fine and 5% fines (silt).	30–35
35–40	90	0.0			@36.0ft: Same as above @ 30.0ft, grades to predominantly medium. @36.6ft: Organics (wood fibers).	35–40
40–45	70	0.0			@40.0-43.0ft: Same as above @ 30.0ft, but 10% gravel (subrounded, fine), organics (wood fragments 1x2 cm).	40–45
45–50	66	0.0			45.0-50.0ft: POORLY GRADED SAND WITH SILT (SM). Dark gray, wet, dense, 90% SAND (fine to medium, predominantly fine, poorly graded, 10% fines (silt). @48.5ft: Pocket, light gray, SILT (ML). End of core @50.0ft below ground surface.	45–50

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Notes:

Soil Boring Log

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EB-42

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272777.755** Easting: **198999.75**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/01/2014** Logged By: **LH**	Total Depth (ft): **50**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0–5	61	0.0	EB-42-3-5		0-0.5ft: ASPHALT. Gray, dry, gravel, fine, coarse. 0.5-2.9ft: POORLY GRADED SAND (SP). Light brown, dry, medium dense, 90% SAND (fine to medium, poorly graded), 10% gravel (fine, angular). 2.9-5.0ft: POORLY GRADED SAND (SP). Black to dark brown, 95% SAND (fine to medium, poorly graded), 5% gravel (fine to angular), potential coal debris. @3.6ft: Anthropogenic debris (paint chip flakes, 1 cm).	0–5
5–10	89	0.0	EB-42-5-7 EB-42-8-10		5.0-6.5ft: POORLY GRADED SAND (SP). Same as above @0.5ft. 6.5-11.5ft: POORLY GRADED SAND WITH SILT (SP-SM). Brown with red thin laminations (1 mm), damp, dense, 90% SAND (fine to medium, predominantly fine, poorly graded), 10% fines (silt), oxidation.	5–10
10–15	84	0.0	EB-42-11-13		11.5-13.5ft: SILTY SAND (SM). Gray with red thin laminations/pockets, wet, dense, 80% SAND (fine to medium, predominantly fine), organics (root-like thin fibers, <1/8 mm), 20% fines (silt). 13.5-25.0ft: POORLY GRADED SAND (SP). 100% SAND (fine to medium, predominantly medium, poorly graded), dark gray, wet, dense).	10–15
15–20	95	0.0	EB-42-15-17		15.0-25.0ft: POORLY GRADED SAND (SP). Same as above @13.5ft.	15–20
20–25	63	0.0				20–25

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Notes:

1. VOCs taken from EB-44-2.
2. EB-44-1 and 2 were homogenized for sample collection to meet volume requirements.

Soil Boring Log

Sheet 2 of 2

EB-42

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272777.755** Easting: **198999.75**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/01/2014** Logged By: **LH**	Total Depth (ft): **50**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
25–50	60	0.0			25.0-27.2ft: SILTY SAND (SM). Dark gray, wet, dense, 85% SAND (fine to medium, poorly graded), 15% fines (silt).	25–50
					@29.0ft: Grades to medium to fine sand, 100% SAND.	
					27.2-35.0ft: POORLY GRADED SAND (SP). Dark gray, wet, dense, 95% SAND (medium to coarse, poorly graded), 5% fines (silt).	
	70	0.0				
					35.0-35.7ft: POORLY GRADED SAND (SP). Same as above @19.0ft, but 10% gravel, organic matter (plant-like stems), fine, angular.	
	76	0.0			35.7-37.0ft: POORLY GRADED SAND WITH SILT (SP-SM). 90% SAND (fine to medium, poorly graded), 10% fines (silt), dark gray, wet, dense.	
					37.0-50.0ft: POORLY GRADED SAND (SP). 95% SAND (fine to medium, predominantly medium), 5% gravel (fine, subrounded).	
	82	0.0			@46.8-47.9ft: Dark gray, wet, dense, 85% SAND (fine to medium, predominantly fine), 15% fines (silt).	
	92				End of core @50.0ft below ground surface.	

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Notes:

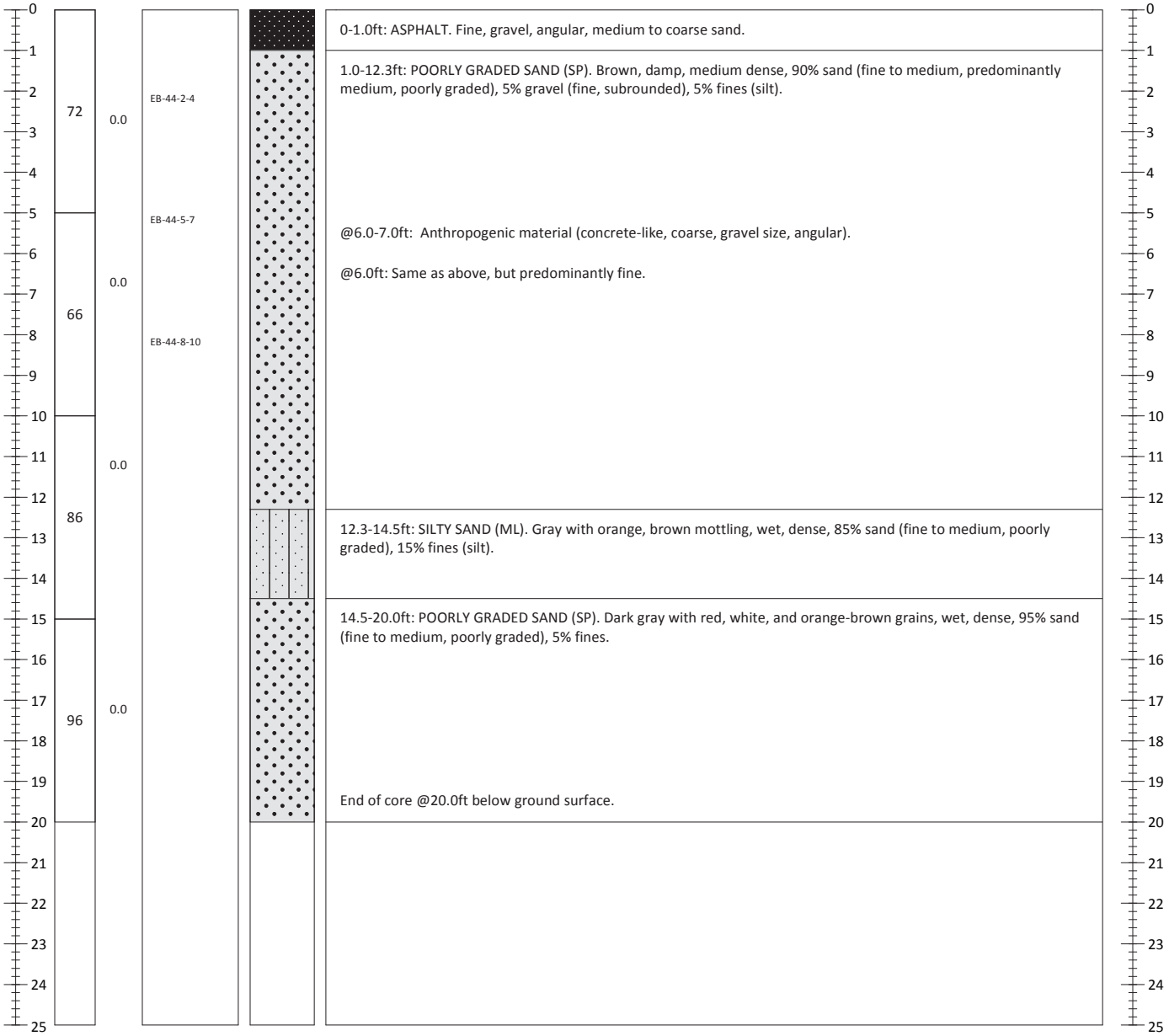
1. VOCs taken from EB-44-2.
2. EB-44-1 and 2 were homogenized for sample collection to meet volume requirements.

Soil Boring Log

Sheet 1 of 1

EB-44-1

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273041.569** Easting: **198992.124**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/09/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**



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Notes:

Soil Boring Log

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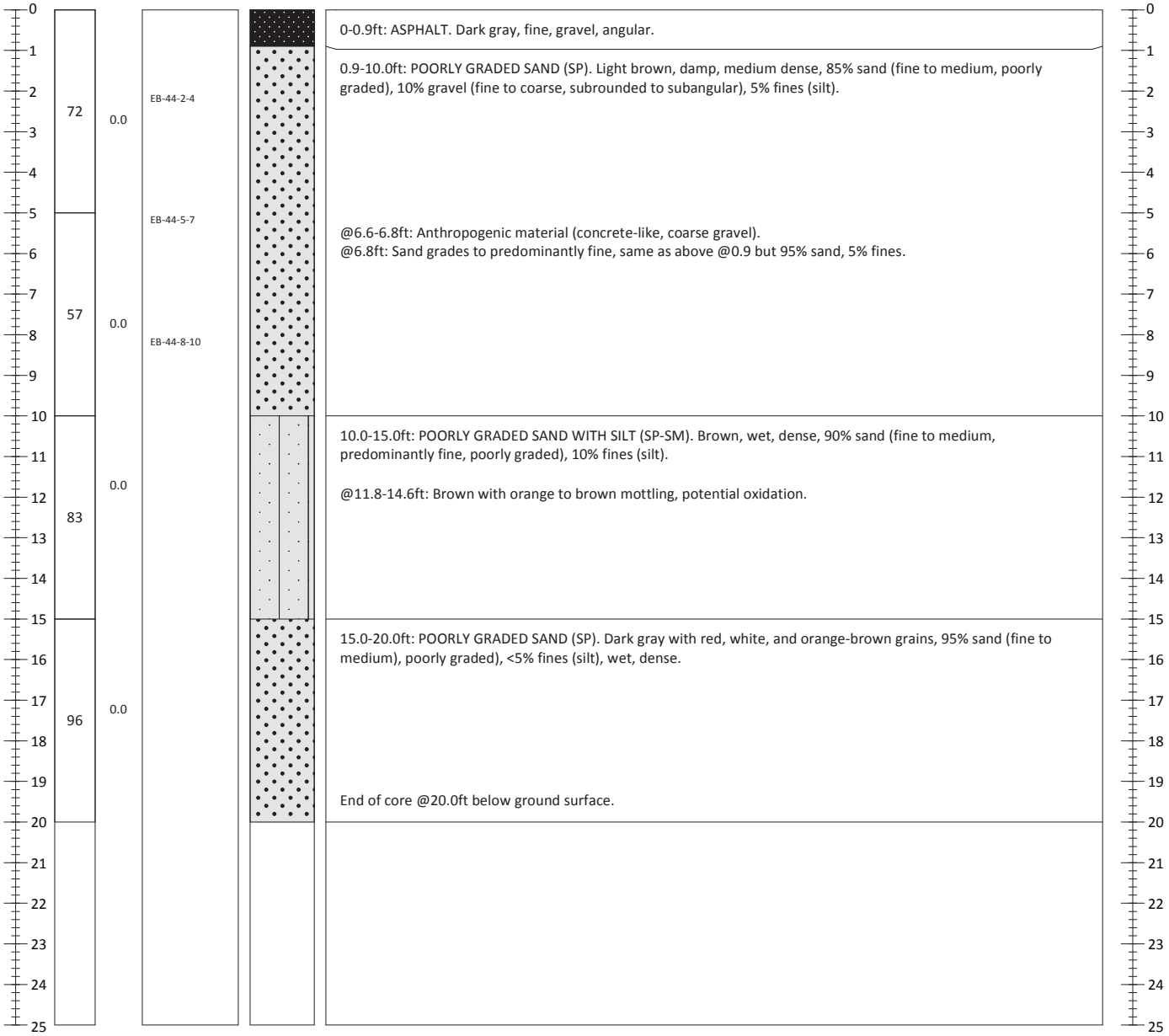
EB-44-2

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273041.569** Easting: **198992.124**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/09/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**



Notes:

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Soil Boring Log

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EB-49

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272676.042** Easting: **198804.778**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/08/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0					**Soil Description** Samples and descriptions are in recovered depths. Classification scheme: USCS	
0–2	90	0.0	EB-49-3-5		0-0.5ft: ASPHALT. Gray, dry, gravel, fine, angular. 0.5-1.2ft: Transition asphalt to POORLY GRADED SAND (SP) as described @1.2ft. 1.2-11.6ft: POORLY GRADED SAND. 90% SAND (fine to medium, predominantly fine, poorly graded), 5% fines (silt), 5% gravel (fine, angular). @2.7ft: Grades to black sand.	
5			EB-49-5-7		@5.5ft: Anthropogenic material (red, brick-like, fine, gravel size). @6.4ft: Anthropogenic material (white/gray, fine gravel/angular), concrete-like. @7.0ft: Zone of potential oxidation (red-orange-brown).	
7–10	70		EB-99-5-7		@7.1ft: Grades to dark brown, grains red, white, and brown, moist, 95% sand (fine to medium, predominantly medium), 5% fines (silt). @8.5ft: Same as above @ 1.2ft.	
10			EB-49-8.5-10			
11–13	94				11.6-13.7ft: SILT (ML). Brown with orange-brown mottling near root-like fibers (potential oxidation), 75% fines (silt), holds shape, 25% sand (fine to medium, predominantly fine), organics (root like fibers).	
13–15			EB-49-11-13		13.7-20.0ft: POORLY GRADED SAND WITH SILT (SP-SM). Gray, wet, dense, 90% sand (fine to medium, predominantly fine, poorly graded), 10% fines (silt).	
15–18	92	0.0	EB-99-11-13		@19.5ft: Sand is predominantly medium grain. End of core @20.0ft below ground surface.	
20–25						

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Soil Boring Log

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EB-53-C

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273035.68** Easting: **198893.202**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/08/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0					0-0.7ft: ASPHALT. Gray, dry, gravel (fine to coarse, angular).	0
1					0.7-14.1ft: POORLY GRADED SAND (SP). Brown, moist, medium, dense, 90% sand (fine to medium, poorly graded), 5% fines (silt), 5% gravel (fine, subrounded), grains are brown and tan.	1
2	72	0.0	EB-49-15-17			2
3						3
4						4
5			EB-49-18-20		@5.7-5.9ft: Lens, anthropogenic, material (concrete-like, light gray, sand to fine gravel, angular).	5
6						6
7		0.0				7
8	81		EB-53-2-4		@8.9-9.5ft: Grades to black, anthropogenic material (red, brick-like, fine to coarse gravel, subangular).	8
9						9
10		0.0			@10.7-11.0ft: Same as above @8.9ft.	10
11						11
12	81				@12.5-13.0ft: Same as above @8.9ft.	12
13		0.0				13
14						14
15			EB-53-5-7		14.1-18.3ft: SILTY SAND (SM). Brown to gray, wet, loose, 80% sand (fine to medium, poorly graded), 20% fines (silt), standing water.	15
16					@14.1ft: Pocket, anthropogenic material (red, brick-like gravel, fine to coarse, angular).	16
17	96	0.0				17
18						18
19					18.3-20.0ft: POORLY GRADED SAND (SP). Dark gray, 95% sand (fine to medium, poorly graded), 5% gravel (fine, subangular), grains red, white, and blue gray.	19
20					End of core @20.0ft below ground surface.	20
21						21
22						22
23						23
24						24
25						25

Soil Description
Samples and descriptions are in recovered depths.
Classification scheme: USCS

Notes:

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Soil Boring Log

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EB-55

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272840.241** Easting: **199532.629**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/08/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0–2	65	0.0	EB-53-8-10		0-0.5ft: ASPHALT. Gray, gravel, fine, angular. 0.5-3.0ft: CONCRETE. Anthropogenic material, light gray to white, dry, loose, 85% sand size (fine to medium), 15% gravel size (fine, angular), mix of concrete-like and fire-brick-like debris.	0–2
3–5					3.0-7.9ft: POORLY GRADED SAND (SP). Dark brown, damp to moist, medium dense, 95% sand (fine to medium, predominantly medium, poorly graded), 5% fines (silt), grains are red, white, and orange.	3–5
5–8	82	0.0	EB-53-15-17			5–8
8–10			EB-103-15-17		7.9-10.0ft: SILT (ML). Gray, firm, moist, 95% fines (clay/silt, predominantly silt), 5% sand (fine to medium, predominantly fine, poorly graded).	8–10
10–12	96	0.0			10.0-12.3ft: SILTY SAND (SM). Gray, brown, wet, loose, 65% sand (fine to medium, poorly graded, predominantly fine), 35% fines (silt), standing water.	10–12
12–13					12.3-13.1ft: SILT (ML). Same as above @ 7.9ft.	12–13
13–20	96	0.0			13.1-20.0ft: SILTY SAND (SM). Gray, loose, wet, 70% sand (fine to medium, predominantly fine, poorly graded), 30% fines (still), standing water. End of core @20.0ft below ground surface.	13–20
20–25						20–25

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Notes:

Soil Boring Log

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EB-56

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272584.265** Easting: **198874.851**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **12/08/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Geoprobe, 2.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Depth (ft)
0					Samples and descriptions are in recovered depths. Classification scheme: USCS	
0–5	61	0.0	EB-55-3-5		0-1.0ft: POORLY GRADED GRAVEL WITH SAND (GW). Dark gray to black, damp, medium dense, 65% sand (fine to medium, poorly graded), 30% gravel (fine to coarse, angular), 5% fines (silt).	
					1.0-1.5ft: LEAN CLAY WITH SAND (CL). Light brown with red-brown mottling, dry, stiff, 85% fines (silt/clay, predominantly clay, holds shape, can be remolded, medium plasticity), 15% sand (fine to medium, predominantly fine).	
					@1.5-4.5ft: Nodules of same as above @1.0ft.	
					@5.0ft: Grades to predominantly fine sand.	
5–10	75	0.0	EB-55-5-7		1.5-6.9ft: POORLY GRADED SAND (SP). Dark brown, damp, dense, 95% sand (fine to medium, predominantly medium, poorly graded), 5% fines (silt), grains red, white, and gray, organic (root-like fibers).	
			EB-55-8-10		6.9-12.2ft: SILTY SAND (SM). Same as above at 5.0ft with interbedded SILTY SAND (SM), gray with red-brown mottling, wet, firm, 80% sand (fine to medium, predominantly fine), 20% fines (silt), organics (root-like fibers), predominantly SILTY SAND (SM).	
10–15	92	0.0	EB-56-2-4		12.2-20.0ft: POORLY GRADED SAND (SP). Dark brown, wet, dense, 100% sand (fine to medium, predominantly medium, poorly graded, grains red and white).	
					@12.4-13.3ft: Same as above @12.2 in, but dark brown to red-brown, potential oxidation. @13.3ft: Organics (wood fragments>.5x1.5 in)	
					Same as above @12.2 but moist.	
			EB-56-5-7		@18.6ft: Grades to predominantly fine sand.	
15–20	88	0.0			@19.0-19.1ft: Lens, gray, firm, damp, 80% fines (silt), 20% sand (fine to medium, poorly graded, predominantly fine).	
					End of core @20.0ft below ground surface.	
20–25						

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Notes:

Well Installation Log

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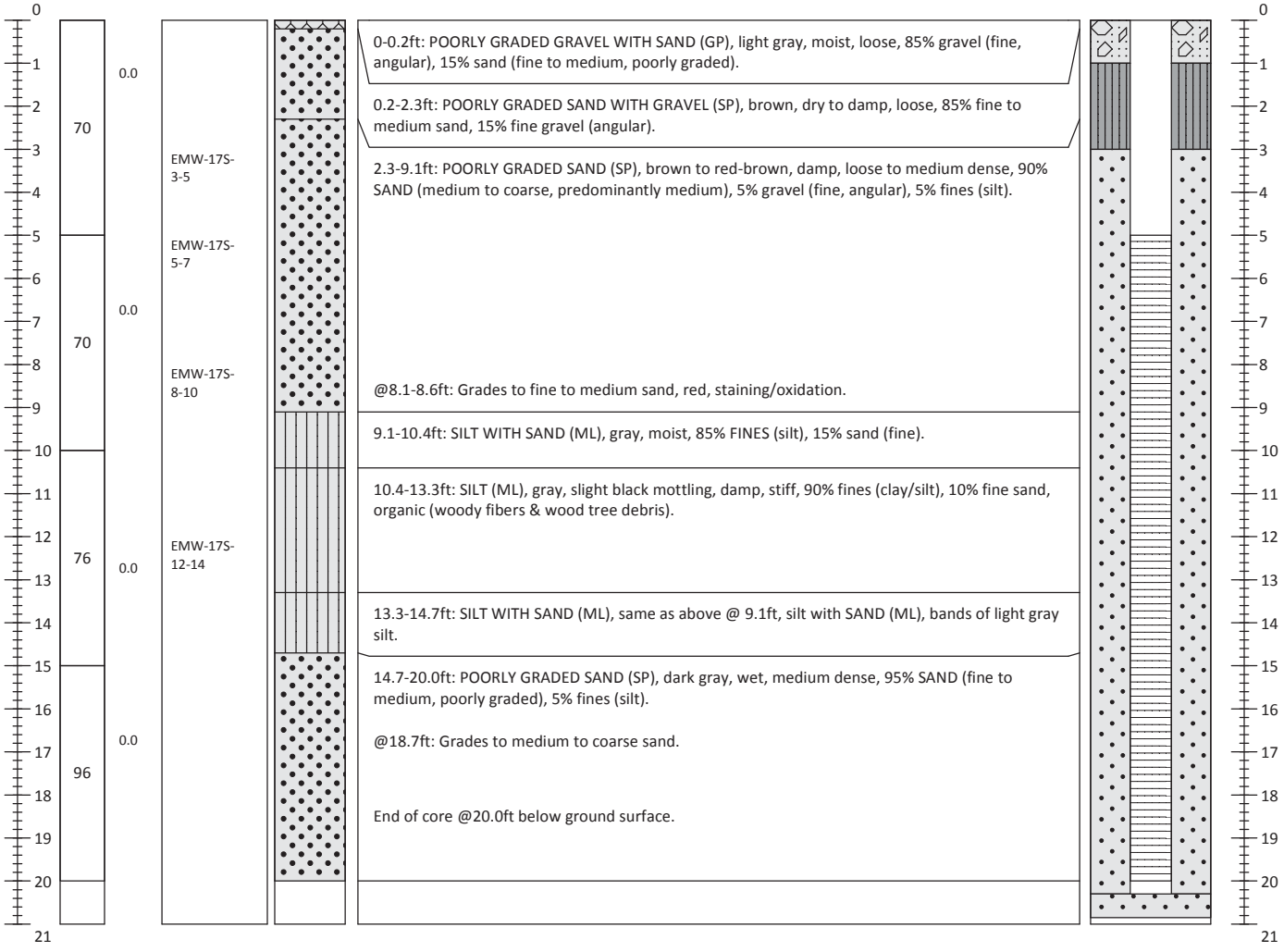
EMW-17S

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272611.79** Easting: **199365.38**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/26/2014** Logged By: **LH**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**



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Notes:

Well Installation Log

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EMW-18S

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272603.63** Easting: **199134.8**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/26/2014** Logged By: **LH/CF**	Total Depth (ft): **20**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Well Details	Depth (ft)
0							0
1					0-0.5ft: POORLY GRADED GRAVEL WITH SAND (GP), light gray, moist, loose, 85% gravel (fine, angular), 15% sand (medium to coarse, poorly graded).		1
2		0.0			0.5-2.4ft: ORGANIC SOIL WITH GRAVEL (OL/OH), brown, damp, loose, 75% organic soil, 15% gravel (fine, angular to subangular), 10% sand (fine to medium, poorly graded), organics (wood fragments).		2
3	66		EMW-18S-2.5-4.5		@1.1ft: Anthropogenic debris (red brick-like, 1/2 in wide).		3
4							4
5			EMW-18S-5-6.5		2.4-6.7ft: POORLY GRADED SAND (SP), brown to gray, damp, loose, 95% sand (fine to medium, predominantly medium, poorly graded), 5% fines (silt).		5
6							6
7		0.0			6.7-9.7ft: SILTY SAND (SM), brown with laminated (thin, 1-2mm) red-brown iron oxidized, damp, 85% SAND (fine, well graded), 15% fines (silt/clay), organics (wood debris, red-brown) 0.3-3.5 in, lens, gray, 80% FINES (silt/clay), 20% sand (fine).		7
8	76		EMW-18S-8-10				8
9							9
10					9.7-14.0ft: POORLY GRADED SAND (SP), gray, 90% POORLY GRADED SAND (SP) (fine to medium, predominantly fine), 10% fines (silt), with interbedded light gray SILT-CLAY (CL-ML), wet, firm, low plasticity, holds shape, can be rerolled, 85% FINES (silt/clay), 15% sand (fine to medium).		10
11			EMW-18S-11-13				11
12		0.0					12
13	84						13
14							14
15					14.0-20.0ft: POORLY GRADED SAND (SP), dark gray, wet, medium dense, 95% SAND (medium to coarse, poorly graded), 5% fines (silt). Grains red, gray, and white.		15
16							16
17		0.0					17
18	92				End of core @20.0ft below ground surface.		18
19							19
20							20
21							21

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Notes:

Well Installation Log

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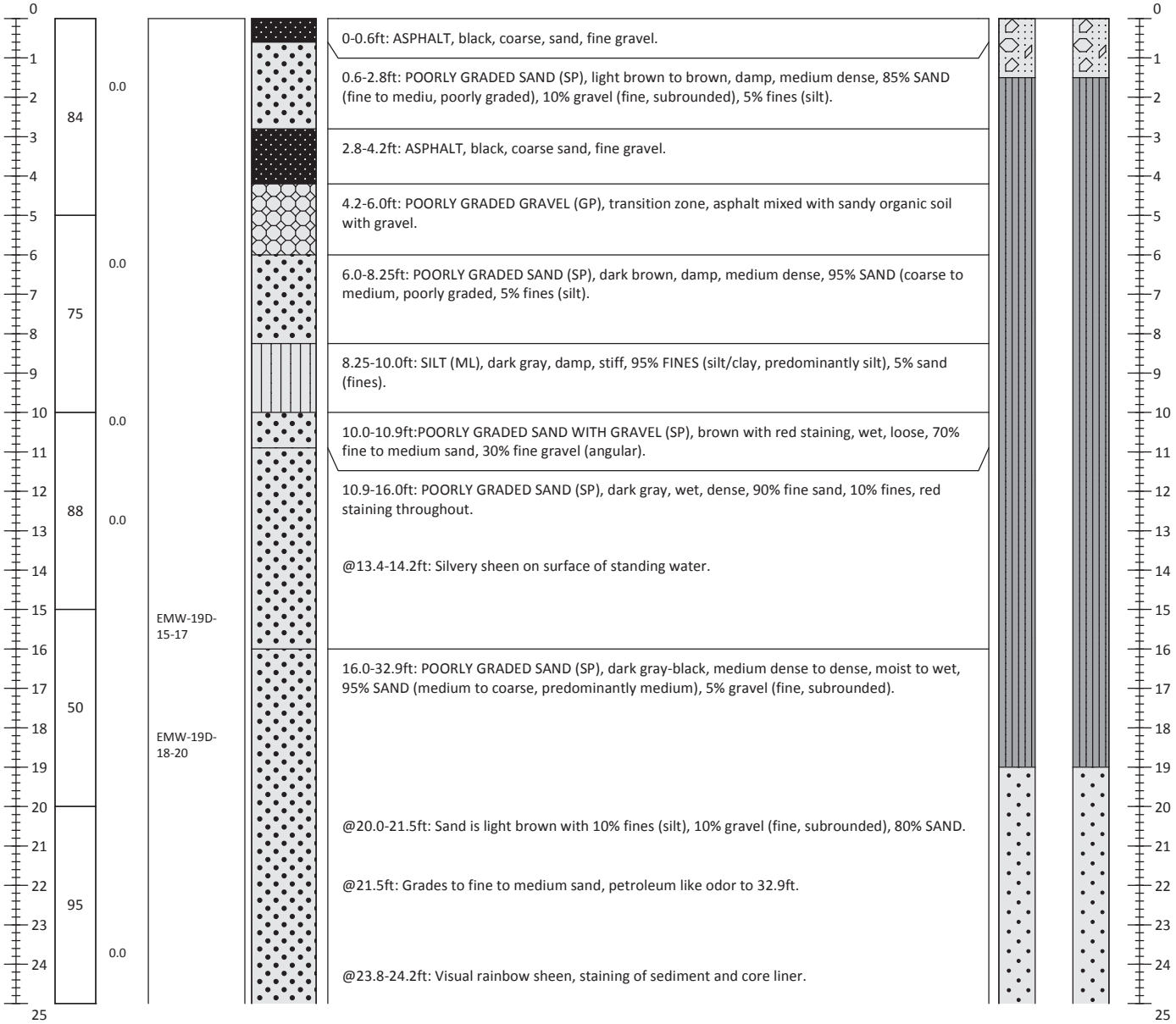
EMW-19D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272736.04** Easting: **199097.59**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/25/2014, 12/5/2014** Logged By: **LH/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**



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Notes:

1: Samples logged continuously and collected via Geoprobe from 0-50ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 50-80ft.

Well Installation Log

Sheet 2 of 4

EMW-19D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272736.04** Easting: **199097.59**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/25/2014, 12/5/2014** Logged By: **LH/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Well Details	Depth (ft)
25							25
26	96	0.0	EMW-19D-26-28		@25.0-28.0ft: Rainbow sheen on surface.		26
27		0.0					27
28							28
29					@29.15-29.2ft: Red-brown organics (wood debris).		29
30							30
31							31
32	76				@31.5-31.8ft: Pocket rainbow sheen. @32.1ft: Organic (wood debris 1x2 in).		32
33							33
34					32.9-35.0ft: SILTY SAND (SM), dark, gray, dense, damp, 75% SAND (fine, well graded), 25% fines (silt).		34
35							35
36					35.0-36.3ft: POORLY GRADED SAND (SP), dark gray-black, dense, moist, 100% S fine to medium sand.		36
37	77	0.0			36.3-36.8ft: SILTY SAND (SM), bed, dark gray, damp, 75% SAND (fine well graded), 25% fines (silt).		37
38			EMW-19D-38-40		36.8-48.9ft: POORLY GRADED SAND (SP), same as above @ 35.0ft.		38
39							39
40							40
41					@40.0-43.5ft: Sand is wet, standing water.		41
42	62	0.0					42
43							43
44							44
45							45
46							46
47	82		EMW-19D-47-49				47
48							48
49		0.0			48.9-50.0ft: SILTY SAND (SM). Interbedded layers of SILTY SAND (SM) (3 in) thick with POORLY GRADED SAND (SP), 1.5 in SM 75% SAND (fine), 25% FINES (silt), SP 95% SAND (fine), 5% FINES		49
50							50

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Notes:

1: Samples logged continuously and collected via Geoprobe from 0-50ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 50-80ft.

Well Installation Log

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EMW-19D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272736.04** Easting: **199097.59**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/25/2014, 12/5/2014** Logged By: **LH/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description Samples and descriptions are in recovered depths. Classification scheme: USCS	Well Details	Depth (ft)
50–75	NA				(silt).		
58	100		EMW-19D-58-59.5		58.0-80.0ft: POORLY GRADED SAND (SP). Black, wet (SP), 95% medium to fine sand, <5% fines, white and red sand grains.		
68	100		EMW-19D-68-69.5		@68.6ft: Layer of wood, organic material.		
74	NA						

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Notes:

1: Samples logged continuously and collected via Geoprobe from 0-50ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 50-80ft.

Well Installation Log

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EMW-19D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272736.04** Easting: **199097.59**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/25/2014, 12/5/2014** Logged By: **LH/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description Samples and descriptions are in recovered depths. Classification scheme: USCS	Well Details	Depth (ft)
75–81	100 NA		EMW-19D-78-79.5		End of core @80.0ft below ground surface.		75–81

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206-287-9130

Notes:

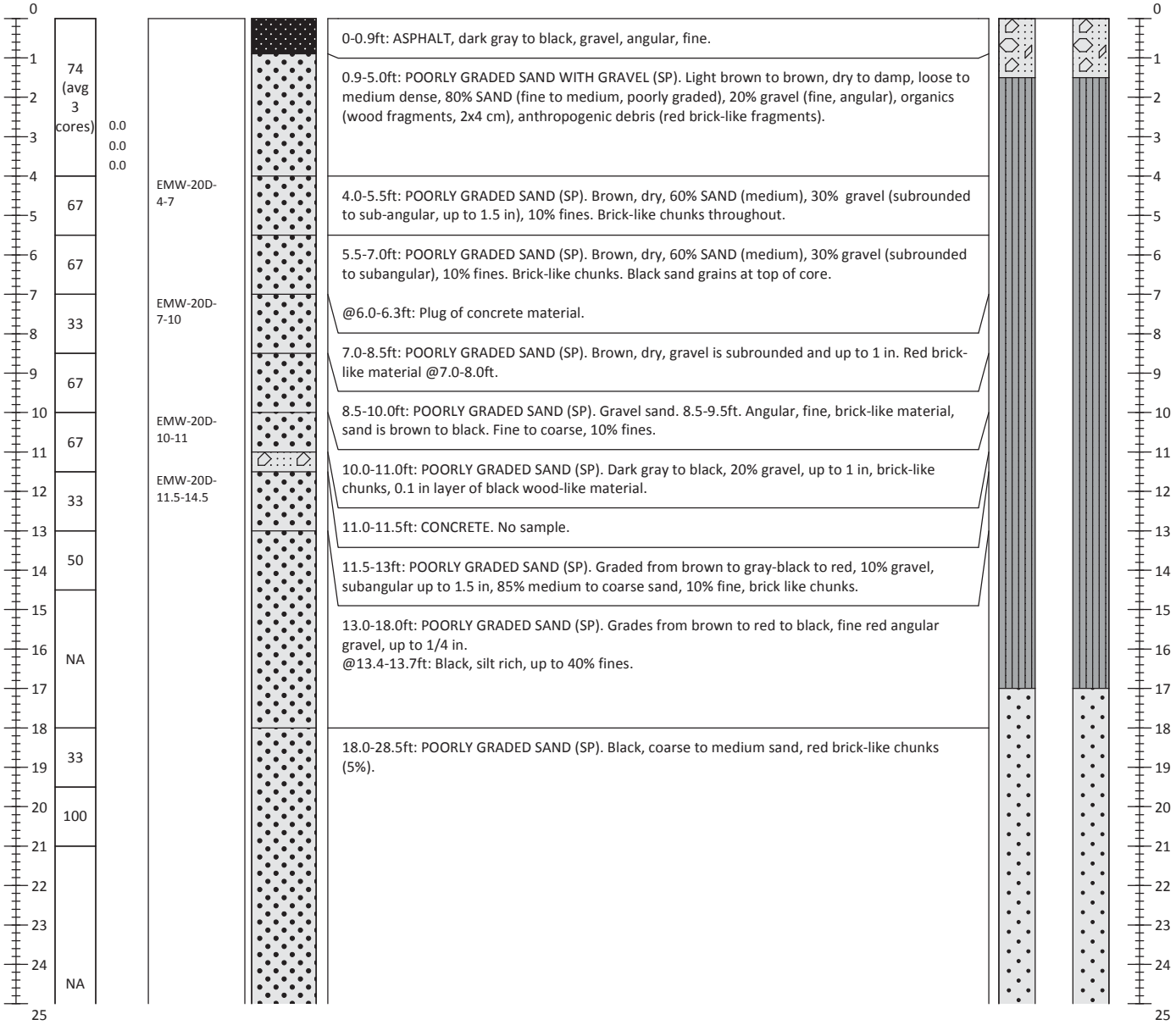
1: Samples logged continuously and collected via Geoprobe from 0-50ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 50-80ft.

Well Installation Log

Sheet 1 of 4

EMW-20D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273160.44** Easting: **198935.67**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/24/2014, 12/4/2014** Logged By: **LH/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**



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Notes:

1: Samples logged continuously and collected via Geoprobe from 0-5ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 5-80ft.

Well Installation Log

Sheet 2 of 4

EMW-20D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273160.44** Easting: **198935.67**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/24/2014, 12/4/2014** Logged By: **LH/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description Samples and descriptions are in recovered depths. Classification scheme: USCS	Well Details	Depth (ft)
25–28							25–28
28–29	67				28.5-38.0ft: POORLY GRADED SAND (SP). Same as above. Some dark fibrous material.		28–29
29–38	NA						29–38
38–39	100				38.0-48.0ft: POORLY GRADED SAND (SP). Black, wet, coarse to medium sand.		38–39
39–48	NA				@39.3ft: Layer of fine brown organic material.		39–48
48–49	100				48.0-68.0ft: POORLY GRADED SAND (SP). Black, wet, coarse, fine sand, white and red sand grains, 95% sand, <5% fines, fines occur in small (<1 cubic mm) pockets.		48–49
49–50					@48.1ft: Fibrous wood.		49–50

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Notes:

1: Samples logged continuously and collected via Geoprobe from 0-5ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 5-80ft.

Well Installation Log

Sheet 3 of 4

EMW-20D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273160.44** Easting: **198935.67**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/24/2014, 12/4/2014** Logged By: **LH/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description Samples and descriptions are in recovered depths. Classification scheme: USCS	Well Details	Depth (ft)
50–75	NA				@58.2-58.6ft: Interval with no coarse sand, fine sand and fines split. 80% fines, 20% fine sand.		
58–59	100						
59–68	NA						
68–69	33				68.0-78.0ft: POORLY GRADED SAND (SP). Black, wet, white and red sand grains, very few fines (<5%). @68.3ft: pocket of silt (ML)		
69–75	NA						

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Notes:

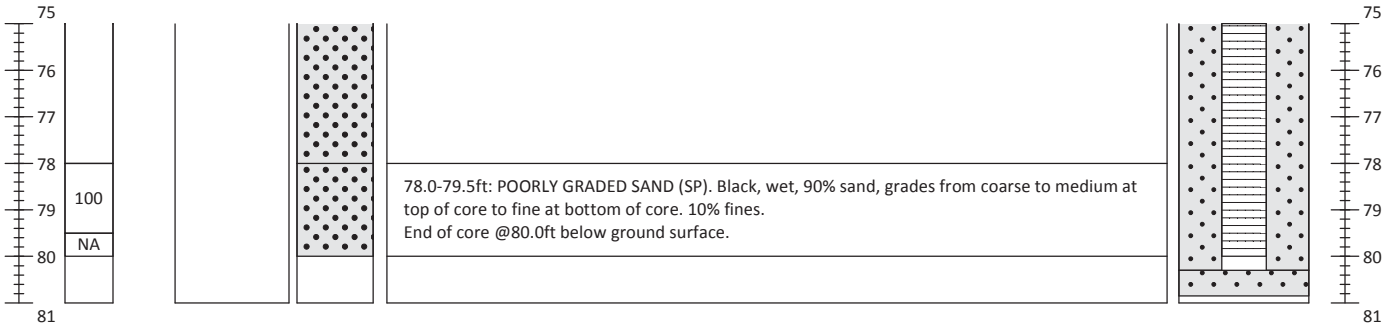
1: Samples logged continuously and collected via Geoprobe from 0-5ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 5-80ft.

Well Installation Log

Sheet 4 of 4

EMW-20D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273160.44** Easting: **198935.67**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/24/2014, 12/4/2014** Logged By: **LH/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**



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Notes:

1: Samples logged continuously and collected via Geoprobe from 0-5ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 5-80ft.

Well Installation Log

Sheet 1 of 4

EMW-21D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272751.52** Easting: **198668.25**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/24/2014, 12/3/2014** Logged By: **LH/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Well Details	Depth (ft)
0							0
1		0.0			0-0.8ft: ASPHALT, black, coarse, angular, fine.		1
2	63		EMW-21D-2-4		0.8-1.5ft: POORLY GRADED SAND WITH GRAVEL (SP), light gray, dry, medium dense, 70% sand (fine to medium, poorly graded), 30% gravel (fine, angular).		2
3					1.5-6.0ft: POORLY GRADED SAND (SP), brown, damp, dense, 95% SAND (fine to medium), 5% gravel (fine).		3
4							4
5			EMW-21D-5-7				5
6					6.0-7.3ft: POORLY GRADED GRAVEL WITH SAND (GP), concrete-like, white to light gray, dry, medium dense, rip-rap-like, angular debris, white rock-like powder, 85% gravel (fine to coarse, angular), 15% sand (fine to medium, poorly graded) (concrete-pad).		6
7	48						7
8		0.0	EMW-21D-8-10		7.3-11.10ft: SILTY SAND WITH GRAVEL (SM), brown, moist, medium dense to dense, 50% fine to medium sand, 30% fine gravel (angular), 20% fines.		8
9							9
10	100						10
11					11.0-14.0ft: SILTY GRAVEL (GM), gravel up to 1 in, subangular, rip rap, 40% silt, brown, moist, 10% fine sand. Pulverized rock.		11
12	33						12
13	NA						13
14	50		EMW-21D-14-14.7		14.0-15.0ft: SILTY SAND WITH GRAVEL (SM), gray, moist, 20% gravel up to 1 in, subrounded, 65% fine sand, 15% fines, brick-like chunks.		14
15			EMW-21D-15-15.4		15.0-17.0ft: POORLY GRADED SAND (SP), wet to moist, gray, 90% sand with white and red grains, 10% fines, some fibers, brick like chunks.		15
16	67						16
17							17
18	50		EMW-21D-17-17.7		17.0-18.5ft: POORLY GRADED GRAVEL WITH SAND (GP), 50% Gravel, subangular to angular, light in color (riprap-like), 45% coarse to fine sand, 5% fines, light-dark gray, wet, some organic-like fibers.		18
19	70						19
20					18.5-28.0ft: POORLY GRADED SAND (SP), gray, wet, 95% sand, red and white grains, organic fibers, <5% fines, sand coarse to medium.		20
21							21
22							22
23							23
24	NA						24
25							25

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Notes:

1: Samples logged continuously and collected via Geoprobe from 0-11ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 11-80ft.

Well Installation Log

Sheet 2 of 4

EMW-21D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272751.52** Easting: **198668.25**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/24/2014, 12/3/2014** Logged By: **LH/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description Samples and descriptions are in recovered depths. Classification scheme: USCS	Well Details	Depth (ft)
28	50				28.0-38.0ft: POORLY GRADED SAND (SP), wet, gray, 95% sand, red and white grains, <5% fines, sand is coarse to medium.		
38	60				38.0-48.0ft: POORLY GRADED SAND (SP), wet, gray, 95% coarse, medium sand, red and white grains, 5% fines, 2 mm thick silt pocket @38.5ft, organic fibers.		
48	100				48.0-48.5ft: POORLY GRADED SAND (SP), wet, gray, 95% coarse to medium sand, 5% fines, red and white sand grains. 48.5-58.0ft: POORLY GRADED SAND (SP), 75% fine sand, 25% fine, gray, wet, sand with silt.		

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Notes:

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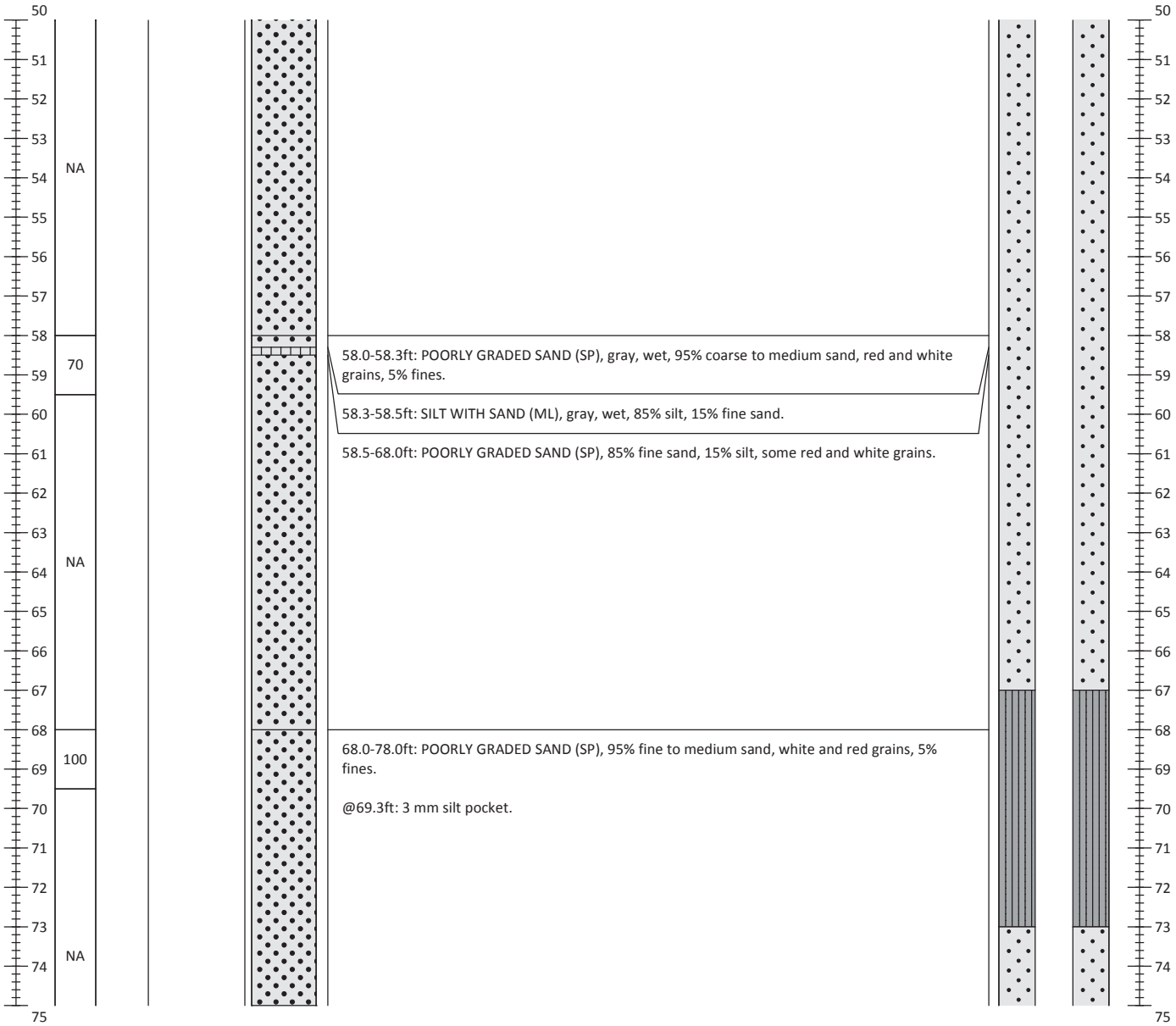
Well Installation Log

Sheet 3 of 4

EMW-21D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272751.52** Easting: **198668.25**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/24/2014, 12/3/2014** Logged By: **LH/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Well Details	Depth (ft)
50–75	NA / 70 / NA / 100 / NA				Samples and descriptions are in recovered depths. Classification scheme: USCS		



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Notes:

1: Samples logged continuously and collected via Geoprobe from 0-11ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 11-80ft.

Well Installation Log

Sheet 4 of 4

EMW-21D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1272751.52** Easting: **198668.25**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/24/2014, 12/3/2014** Logged By: **LH/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Well Details	Depth (ft)
75							75
76							76
77							77
78	100				78.0-80.0ft: POORLY GRADED SAND (SP), gray, wet, 95% medium to fine sand, some white and red grains, 5% fines, small (2 square mm), silt pockets.		78
79					@79.4-79.5ft: Grades to 50% fine sand, 50% fines.		79
80	NA				End of core @80.0ft below ground surface.		80
81							81

Soil Description
Samples and descriptions are in recovered depths.
Classification scheme: USCS

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Notes:

1: Samples logged continuously and collected via Geoprobe from 0-11ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 11-80ft.

Well Installation Log

Sheet 1 of 4

EMW-22D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273360.73** Easting: **199366.13**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/24/2014, 12/2/2014** Logged By: **LH/NB/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Well Details	Depth (ft)
0–5	68	0.0	EMW-22D-2-4		0-0.2ft: ASPHALT, dark gray, gravel, coarse, angular. 0.2-1.2ft: SANDY ORGANIC SOIL (OL/OH), dark brown, damp, medium dense, 60% organic soil, 35% sand (fine to medium, poorly graded), 5% gravel (fine, angular), organics (wood fragments, burnt 4x5 cm). 1.2-6.9ft: POORLY GRADED SAND (SP), light brown to brown, damp, dense, 95% SAND (fine to medium, poorly graded), 5% gravel (fine, angular).		0–5
5–7			EMW-22D-5-7				5–7
7–10	58		EMW-22D-8-10		6.9-11.2ft: POORLY GRADED SAND WITH GRAVEL (SP). Dark gray to brown, damp, medium dense, 80% SAND (medium to coarse, poorly graded), 20% gravel (fine, subangular). @8.4ft: Grades to 30% gravel (fine to coarse, subangular).		7–10
10–12	59	0.0	EMW-22D-12.5-14.5		11.2-12.5ft: SILTY GRAVEL WITH SAND (GM). Dark red-brown, moist, medium dense, 45% gravel (coarse, subangular), 30% fines (silt, does not hold shape), 25% sand (medium to coarse, poorly graded). @12.5-14.6ft: Petroluem-like odor, rainbow sheen on water surface. Native contact. 12.5-15.0ft: POORLY GRADED SAND (SP). Dark gray, moist to wetm 90% SAND (fine to medium, poorly graded), 10% fines (silt).		10–12
12–15							12–15
15–20	86	0.0			15.0-35.0ft: POORLY GRADED SAND (SP). Dark gray, moist to wet, 100% SAND (medium to coarse, predominantly medium, angular). @20.0-22.0ft: Sand grains predominantly red.		15–20
20–25	68						20–25

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Notes:

1: Samples logged continuously and collected via Geoprobe from 0-55ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 55-80ft.

Well Installation Log

Sheet 2 of 4

EMW-22D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273360.73** Easting: **199366.13**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/24/2014, 12/2/2014** Logged By: **LH/NB/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Well Details	Depth (ft)
25–50	81	0.0			@25.1-25.5ft: Organics (twig/wood debris). @27.6-27.9ft: Organics (wood debris), grades to fine to medium sand @27.6ft.		
	76				@31.7ft: Sand grades black to medium to coarse to grained.		
	97	0.0			35.0-36.2ft: SILTY SAND (SM). Dark gray, wet, medium dense to dense. 60% SAND (fine sand, some medium grains, poorly graded), 40% fines (silt). 36.2-38.4ft: SILTY SAND (SM). Grades from SILTY SAND (SM) to POORLY GRADED SAND (SP). 38.4-40.0ft: POORLY GRADED SAND (SP). Dark gray, wet, medium dense to dense, 95% SAND (fine), 5% fines (silt).		
	84	0.0			40.0-41.0ft: SILT WITH SAND (ML). Dark gray, wet, stiff, 80% fines (silt/clay, predomiantly silt), 20% sand (fine), holds shape, low plasticity, low toughness. 41.0-42.6ft: POORLY GRADED SAND (SP). Same as above @38.4ft. 42.6-43.9ft: SILT WITH SAND (ML). Same as above @40.0ft.		
	78	0.0			43.9-55.0ft: POORLY GRADED SAND (SP). Dark gray, wet, dense, 95% SAND (fine), 5% fines (silt).		

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Notes:

1: Samples logged continuously and collected via Geoprobe from 0-55ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 55-80ft.

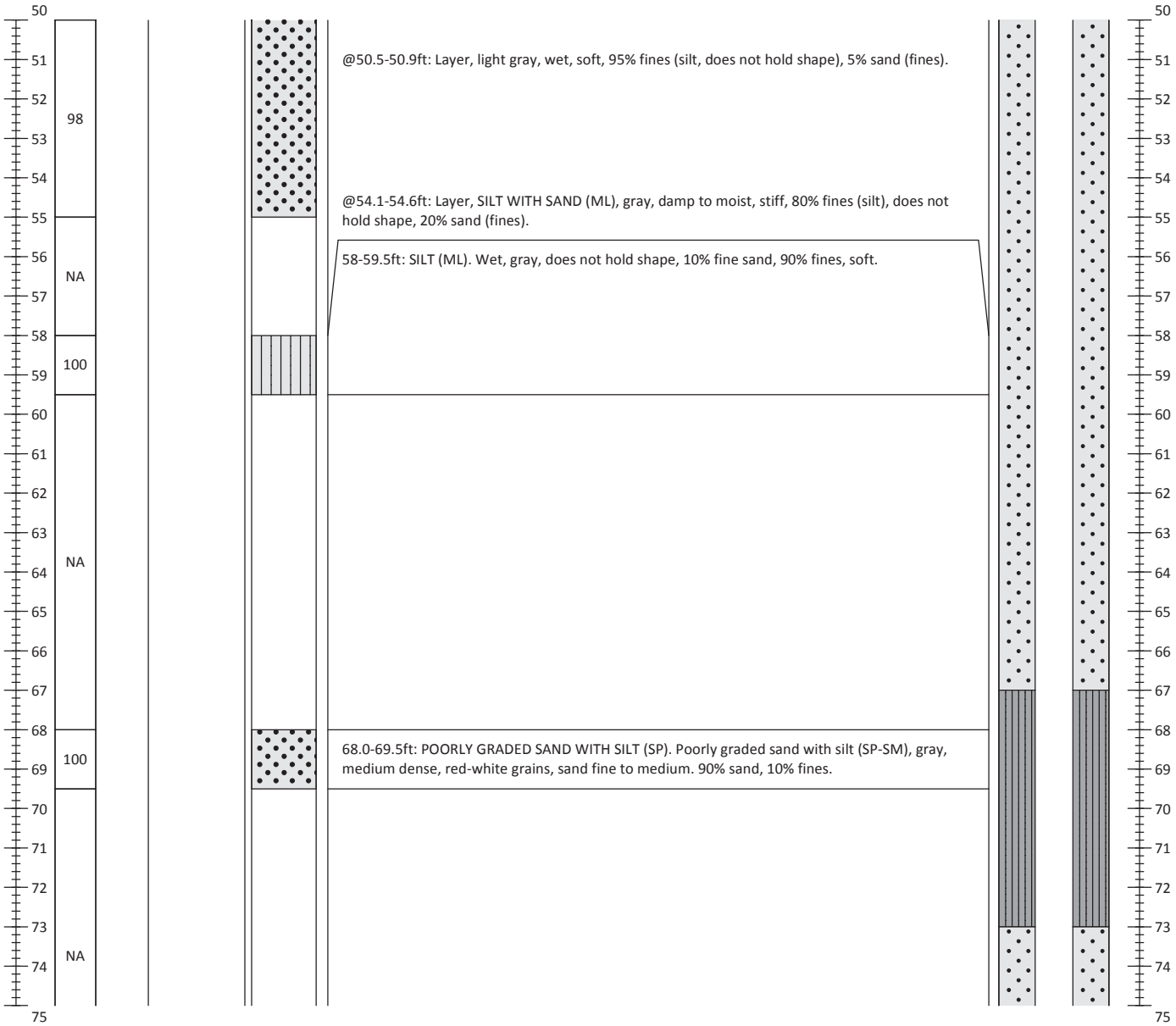
Well Installation Log

Sheet 3 of 4

EMW-22D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273360.73** Easting: **199366.13**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/24/2014, 12/2/2014** Logged By: **LH/NB/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description	Well Details	Depth (ft)
50–75	98 / NA / 100 / NA / 100 / NA				Samples and descriptions are in recovered depths. Classification scheme: USCS		



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206-287-9130

Notes:

1: Samples logged continuously and collected via Geoprobe from 0-55ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 55-80ft.

Well Installation Log

Sheet 4 of 4

EMW-22D

Project: **Draft RI Report - 8th Avenue Terminals, Inc. Site**	Location: **7400 8th Avenue S., Seattle WA 98108**
Project #: **131044-01**	Northing: **1273360.73** Easting: **199366.13**
Client: **DeNovo Seattle, LLC**	Horizontal Datum: **NAD83 WA State Plane North Feet**
Collection Date: **11/24/2014, 12/2/2014** Logged By: **LH/NB/JBW**	Total Depth (ft): **80**
Contractor: **Holt Services, Inc.**	Method: **Hollow Stem Auger, 4.25" diameter**

Depth (ft)	Sample Recovery (%)	PID (ppm)	Sample Name	Graphic Log	Soil Description Samples and descriptions are in recovered depths. Classification scheme: USCS	Well Details	Depth (ft)
75							75
76							76
77							77
78	100				78.0-79.0ft: POORLY GRADED SAND (SP). Gray with red-white grains, sand is medium to fine, 95% sand, 5% fines.			78
79	NA				End of core @80.0ft below ground surface.		79
80							80
81							81

ANCHOR QEA
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206-287-9130

Notes:

1: Samples logged continuously and collected via Geoprobe from 0-55ft, samples logged in discontinuous intervals and collected via Hollow Stem Auger from 55-80ft.

SLR
22118 20th Ave. SE, Suite G-202
Bothell, Washington 98021
Telephone: 425.402.8800
Fax: 425.402.8488

BORING NUMBER EB-5

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/18/13 **COMPLETED** 6/18/13
GROUND ELEVATION 11.97' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 7.0 ft
LOGGED BY G. Lish/A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							**SAND AND GRAVEL (FILL)**, light brown, fine to coarse sand, fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining.	
			EB-5-1.0*				@ 1.0 feet: Becomes dark brown; little fines.	0.0
		GP	EB-5-2.5	90			1.8	
					SP		**SAND (FILL)**, brown, fine-grained, few fines, moist, no hydrocarbon-like odors or staining.	
5								0.0
			EB-5-5.0*					0.0
								0.0
							▼ @ 6.5 feet: Becomes gray.	
		GP	EB-5-7.5	90			@ 7.0 feet: Becomes wet.	0.0
							7.5	
							SILTY SAND (FILL), gray, fine-grained, some fines, wet, no hydrocarbon-like odors or staining.	0.0
10								0.0
			EB-5-10.0*					0.0
					SM			0.0
		GP	EB-5-12.5	100				0.0
								0.0
15								0.0
							15.2	
							SAND, gray, fine- to medium-grained, trace fines, wet, no hydrocarbon-like odors or staining.	0.0
		GP		100	SP			0.0
								0.0
								0.0
20								0.0
							20.0	
							Boring completed at 20.0 feet.	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-93-10.0' collected over the same interval as sample EB-5-10.0'.
▽ Water level at time of drilling.

SLR SB LOG CROWLEY RIFS BORINGS.GPJ GINT US.GDT 1/16/14

SLR
22118 20th Ave. SE, Suite G-202
Bothell, Washington 98021
Telephone: 425.402.8800
Fax: 425.402.8488

BORING NUMBER EB-14

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/17/13 **COMPLETED** 6/17/13
GROUND ELEVATION 15.59' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 11.2 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
							0.7 **ASPHALT**.	0.0
			EB-14-1.0*		SP		**SAND (FILL)**, brown, fine-grained, few fine gravel, moist, no hydrocarbon-like odors or staining.	0.0
							2.0 From 1.3 to 1.5 feet: Red brick.	
		GP	EB-14-2.5	95			@ 1.8 feet: Cobble fragments in sampler.	0.0
							GRAVELLY SAND (FILL), dark gray, fine-grained, little to some gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0
5					SP		@ 4.0 feet: Weak hydrocarbon-like odor.	0.6
							@ 4.5 feet: Becomes brown.	0.0
			EB-14-5.0*					0.0
							6.8	
					SP		7.2 **SAND (FILL)**, gray, fine- to medium-grained, moist, no hydrocarbon-like odors or staining.	0.0
		GP	EB-14-7.5	95			**SILTY SAND (FILL)**, brown, fine-grained, little to some fines, few wood fragments, moist, no hydrocarbon-like odors or staining.	0.0
10								0.0
			EB-14-10.0*					0.0
							▼ @ 11.2 feet: Becomes wet.	0.0
		GP	EB-14-12.5	90	SM		From 12.0 to 12.2 feet: Wood fragments.	0.0
								0.0
15								0.0
								0.0
		GP					17.0	0.0
							SAND, brownish-gray, fine-grained, trace fines, wet, no hydrocarbon-like odors or staining.	0.0
					SP			0.0
20							20.0	0.0
							Boring completed at 20.0 feet.	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

SLR SB LOG CROWLEY RIFS BORINGS.GPJ GINT US.GDT 1/16/14

SLR
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BORING NUMBER EB-16

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/19/13 **COMPLETED** 6/19/13
GROUND ELEVATION 14.64' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9.5 ft
LOGGED BY C. Lee **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							**CONCRETE**.	
							1.0	
							1.5 **ASPHALT**.	
		GP	EB-16-2.5*	100	GP		**SANDY GRAVEL (FILL)**, brown, fine, some fine-grained sand, damp, no hydrocarbon-like odors or staining.	0.0
							3.0	
					SP		**SAND (FILL)**, brown, fine- to medium-grained, damp, no hydrocarbon-like odors or staining.	0.0
5			EB-16-5.0*					0.0
		GP		100				
			EB-16-7.5				6.5	
					ML		**SANDY SILT (FILL)**, brown, some fine-grained sand, moist, no hydrocarbon-like odors or staining.	0.0
							9.5 ▼	0.0
10		GP	EB-16-10.0*	--			**SAND**, brownish-gray, fine-grained, few fines, wet, no hydrocarbon-like odors or staining.	
								0.0
			EB-16-12.5					0.0
		GP		100	SP			
15			EB-16-15.0					0.0
								0.0
		GP		100				
							@ 18.5 feet: Becomes fine- to medium-grained, no fines.	0.0
20							19.5	
			EB-16-20.0		SP		**SAND**, dark brown, fine- to medium-grained, wet, no hydrocarbon-like odors or staining.	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

(Continued Next Page)

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BORING NUMBER EB-16

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
		GP		100	SP		**SAND**, dark brown, fine- to medium-grained, wet, no hydrocarbon-like odors or staining. *(continued)*	0.0
								0.0
25		GP	EB-16-25.0	100				0.0
								0.0
30		GP	EB-16-30.0	100				0.0
								0.0
35		GP	EB-16-35.0	100				0.0
		GP		100				0.0
40								0.0
		GP	EB-16-40.0	100				0.0
			EB-16-44.0				44.0 Boring completed at 44.0 feet due to refusal.	0.0

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER EB-17

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/17/13 **COMPLETED** 6/17/13
GROUND ELEVATION 15.35' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING 11.0 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.4 **ASPHALT**.	0.0
			EB-17-1.0*		SP		1.0 **GRAVELLY SAND (FILL)**, brown, fine-grained, some fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0
					SP		2.0 **SAND (FILL)**, tan, fine-grained, few to little fine to coarse gravel, few fines, few brick fragments, moist, no hydrocarbon-like odors or staining.	0.0
		GP	EB-17-2.5	90	ML		3.0 **SANDY SILT (FILL)**, brown, some fine-grained sand, little fine gravel, moist, no hydrocarbon-like odors or staining.	0.0
5					SP		**SAND (FILL)**, brown to dark brown, fine- to medium-grained, trace fine gravel, moist, no hydrocarbon-like odors or staining. From 4.5 feet to 5.75 feet: No recovery.	0.0
			EB-17-5.75*					0.0
		GP	EB-17-7.5				7.6	0.0
10					SM		**SILTY SAND (FILL)**, gray, fine-grained, some fines, moist to wet, no hydrocarbon-like odors or staining.	0.0
			EB-17-10.0*					0.0
							▼ @ 11.0 feet: Becomes wet.	0.0
		GP					12.5	0.0
15					SP		**SAND**, gray, fine-grained, few to little fines, wet, no hydrocarbon-like odors or staining. @ 15.2 feet: Trace fines.	
		GP		100				
20							20.0	
							Boring completed at 20.0 feet.	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER EB-24

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/17/13 **COMPLETED** 6/17/13
GROUND ELEVATION 16.84' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 12.0 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**.	
			EB-24-1.0*		GP		1.0 **SANDY GRAVEL (FILL)**, brown, fine to coarse, trace fines, dry to moist, no hydrocarbon-like odors or staining.	0.0
		GP	EB-24-2.5	95	SP		**SAND (FILL)**, brown, fine- to medium-grained, few fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0
								0.0
5								0.0
								2.7
			EB-24-5.0*				@ 4.8 feet: Moderate hydrocarbon-like odors.	41.3
							@ 5.2 feet: No hydrocarbon-like odors or staining.	2.7
								0.0
							7.0	0.0
		GP	EB-24-7.5	100	SP		**SAND (FILL)**, gray, fine- to medium-grained, trace fine gravel, moist, no hydrocarbon-like odors or staining.	0.0
							9.0	0.0
10							**SAND (FILL)**, gray, fine-grained, few fines, moist, no hydrocarbon-like odors or staining.	0.0
			EB-24-10.0*					0.0
					SP			0.0
		GP	EB-24-12.5				▼ @ 12.0 feet: Becomes wet.	0.0
								0.0
							13.5	
					SM		**SILTY SAND (FILL)**, gray, fine-grained, little to some fines, wet, no hydrocarbon-like odors or staining.	0.0
15							14.8	
							SAND, gray, fine- to medium-grained, trace fines, trace wood fragments, wet, no hydrocarbon-like odors or staining.	0.0
								0.0
		GP			SP			0.0
								0.0
								0.0
20							20.0	0.0
							Boring completed at 20.0 feet.	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER EB-28

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/10/13 **COMPLETED** 6/10/13
GROUND ELEVATION 16.93' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 12.0 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.3 **ASPHALT**.	0.0
		GP	EB-28-1.0*		GP		**SANDY GRAVEL (FILL)**, brown, fine to coarse, some fine-grained sand, damp, no hydrocarbon-like odors or staining. 1.5	0.0
					SP		2.0 **SAND (FILL)**, brown, fine- to medium-grained, damp, no hydrocarbon-like odors or staining.	0.0
		GP	EB-28-2.5	100			**SAND (FILL)**, dark brown to black, very fine- to fine-grained, some fine gravel, damp, weak hydrocarbon-like odor.	2.9
5								3.5
			EB-28-5.0*		SP			0.2
		GP	EB-28-7.5*	90				1.8
								0.0
							8.0 From 7.5 to 7.7 feet: Red brick.	0.0
					CL		9.0 **SILTY CLAY (FILL)**, black, few pieces of charred wood, trace ash, moist, no hydrocarbon-like odors or staining.	0.0
					SP		From 8.5 feet to 9.0 feet: Wood debris.	0.0
10							10.0 **SAND (FILL)**, brown, very fine- to fine-grained, damp, no hydrocarbon-like odors or staining.	0.0
			EB-28-10.0*				@ 9.8 feet: Becomes fine- to medium-grained.	0.0
		GP	EB-28-12.5	100	SM		**SILTY SAND (FILL)**, brown, very fine- to fine-grained, some fines, damp, no hydrocarbon-like odors or staining. ▼ @ 12.0 feet: Becomes wet.	0.0
								0.0
15							14.5	0.0
			EB-28-15.0		SP		**SAND**, gray, fine- to medium-grained, wet, weak hydrogen sulfide-like odor.	0.0
		GP						0.0
								0.0
								0.0
								0.0
20			EB-28-20.0				20.0 Boring completed at 20.0 feet.	0.0

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER EB-32

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/14/13 **COMPLETED** 6/14/13
GROUND ELEVATION 16.88' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 11.0 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.3 **ASPHALT**.	0.0
					SP		0.8 **GRAVELLY SAND (FILL)**, brown, fine-grained, fine to coarse gravel, moist, no hydrocarbon-like odors or staining.	0.0
		GP	EB-32-1.0*	100	SP		**SAND (FILL)**, brown, fine- to medium-grained, trace to few fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0
			EB-32-2.5					0.0
								0.0
5							4.5	
			EB-32-5.0*		SP		**SAND (FILL)**, gray, fine- to medium-grained, trace fine gravel, moist, weak hydrocarbon-like odor. @ 5.0 feet: Black staining.	0.5
		GP		100			6.2 @ 6.0 feet: Cobble fragments in sampler.	16.4
					SP		7.2 **SAND (FILL)**, brown, fine- to medium-grained, moist, no hydrocarbon-like odors or staining.	0.0
			EB-32-7.5				**SAND (FILL)**, brownish-gray, fine-grained, few to little fines, moist, mottled, no hydrocarbon-like odors or staining.	0.0
								0.0
10		GP	EB-32-10.0*	100			@ 9.0 feet: Becomes brown. @ 9.5 feet: Becomes fine- to medium-grained.	0.0
							▼ @ 11.0 feet: Becomes wet.	0.0
			EB-32-12.5*		SP			0.0
		GP		50			@ 14.0 feet to 17.5 feet: No recovery.	0.0
15								
		GP					17.5 **SAND**, gray, fine- to medium-grained, trace fine gravel, moist, no hydrocarbon-like odors or staining.	
					SP			
20			EB-32-20.0				20.0 Boring completed at 20.0 feet.	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER EB-38

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/17/13 **COMPLETED** 6/17/13
GROUND ELEVATION 16.91' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 11.2 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.3 **ASPHALT**.	0.0
		GP	EB-38-1.0*	100	SP		**SAND (FILL)**, brown, fine- to medium-grained, little fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0
			EB-38-2.5				@ 1.5 feet: Cobble fragments in sampler.	0.0
							3.2	0.0
5							**SAND (FILL)**, dark gray to black, fine- to medium-grained, trace fine gravel, trace fines, moist, weak hydrocarbon-like odor.	0.5
		GP	EB-38-5.0*	100	SP			5.2
			EB-38-7.5					5.7
								1.3
							8.5	1.5
10							**SILTY SAND (FILL)**, grayish-brown, fine-grained, little to some fines, moist, no hydrocarbon-like odors or staining.	0.4
		GP	EB-38-10.0*	100	SM		▼	0.0
			EB-38-12.5*					0.0
								0.0
								0.0
							14.5	0.0
15							**SAND**, gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining.	0.0
		GP		100	SP			0.0
								0.0
								0.0
								0.0
20							20.0	0.0
							Boring completed at 20.0 feet.	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER EB-40

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/10/13 **COMPLETED** 6/10/13
GROUND ELEVATION 17.03' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 12.0 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.3 **ASPHALT**.	0.0
			EB-40-1.0*		GP		1.0 **GRAVEL (FILL)**, gray, dry, no hydrocarbon-like odors or staining.	0.0
					GP		**SANDY GRAVEL (FILL)**, brown, fine to coarse, some fine-grained sand, damp, no hydrocarbon-like odors or staining.	0.0
		GP	EB-40-2.5	95			2.5	
					SP		**SAND (FILL)**, brown, fine- to medium-grained, trace fine gravel, damp, no hydrocarbon-like odors or staining. @ 3.0 feet: Becomes black.	0.0
5							4.8 @ 4.5 feet: Becomes dark brown.	0.0
			EB-40-5.0*		SP		5.0 **ASPHALT**.	0.0
							6.0 **SAND (FILL)**, brown, fine- to medium-grained, damp, no hydrocarbon-like odors or staining.	0.0
		GP	EB-40-7.5	95	SP		**SAND (FILL)**, brown, fine-grained, trace to few fines, damp, no odors or staining.	0.0
10								0.0
			EB-40-10.0*					0.0
		GP	EB-40-12.5	100	SP		11.0 **SAND (FILL)**, black, fine-grained, damp, no odors or staining. ▼ 12.5	0.0
					ML		**SANDY SILT (FILL)**, brown, some fine-grained sand, wet, no odors or staining. 14.0	0.0
15							**SAND**, gray, fine- to medium-grained, wet, no odors or staining.	0.0
		GP		100	SP			0.0
20							20.0	0.0
							Boring completed at 20.0 feet.	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER EB-41

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/14/13 **COMPLETED** 6/14/13
GROUND ELEVATION 16.88' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 11.8 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.4 **ASPHALT**.	0.0
		GP	EB-41-1.0*	95	SP		**SAND (FILL)**, brown, fine- to medium-grained, moist, no hydrocarbon-like odors or staining.	0.0
			EB-41-2.5		SP		2.0 **SAND (FILL)**, brown to dark brown, fine-grained, few cobbles, moist, no hydrocarbon-like odors or staining.	0.2
					SP		3.0 **SAND (FILL)**, brown, fine- to medium-grained, moist, no hydrocarbon-like odors or staining. 3.8	0.0
5		GP	EB-41-5.0*	100	SP		**SAND (FILL)**, dark brown, fine-grained, trace fine gravel, moist, no hydrocarbon-like odors or staining. @ 4.8 feet: Weak hydrocarbon-like odors. @ 5.2 feet: Becomes brown, few fine gravel, no hydrocarbon-like odors or staining.	0.0 0.5 0.0
			EB-41-7.5		SP		7.0 @ 6.8 feet: Cobble fragments in sampler. **SAND (FILL)**, grayish-brown to brown, fine-grained, trace to few fines, moist, no hydrocarbon-like odors or staining. 9.0	0.2 0.0
10		GP	EB-41-10.0*	100	SP		**SAND (FILL)**, brown, fine-grained, trace fines, moist, no hydrocarbon-like odors or staining. @ 10.0 feet: Becomes fine- to medium-grained. ▼ @ 11.8 feet: Becomes wet.	0.0 0.0 0.0 0.0
		GP	EB-41-12.5	90			14.2	0.0
15			EB-41-15.0*		SM		15.2 **SILTY SAND (FILL)**, brownish-gray, fine-grained, some fines, trace fine gravel, wet, no hydrocarbon-like odors or staining.	0.0
					SP		16.5 **SAND**, dark brown, fine- to medium-grained, trace fines, wet, no hydrocarbon-like odors or staining.	0.0
		GP		90	SW		**SAND**, gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining.	0.0 0.0 0.0
20			EB-41-20.0				20.0 Boring completed at 20.0 feet.	0.0

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-91-10.0' was collected over the same interval as sample EB-41-10.0'.
▽ Water level at time of drilling.

SLR SB LOG CROWLEY RIFS BORINGS.GPJ GINT US.GDT 1/16/14

SLR
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BORING NUMBER EB-45

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/10/13 **COMPLETED** 6/10/13
GROUND ELEVATION 16.67' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 12.5 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.3 **ASPHALT**.	0.0
		GP	EB-45-1.0*		GP		**SANDY GRAVEL (FILL)**, brown, fine to coarse, some fine-grained sand, damp, no hydrocarbon-like odors or staining. 1.5	0.0
		GP	EB-45-2.5	90	SP		**SAND (FILL)**, brown, fine-grained, trace fine gravel, trace fines, damp, no hydrocarbon-like odors or staining.	0.0
								0.0
5							4.5 @ 4.0 feet: Becomes fine- to medium-grained.	0.0
			EB-45-5.0*		SP		**SAND (FILL)**, black, fine-grained, few fine gravel, trace fines, damp, no hydrocarbon-like odors or staining.	0.0
		GP	EB-45-7.5*	80	SP		6.0 **SAND (FILL)**, brown, very fine- to fine-grained, trace to few fine gravel, trace fines, damp, no hydrocarbon-like odors or staining.	0.0
							From 7.8 to 7.9 feet: Brick fragments.	0.0
10							@ 8.0 feet: Charred wood fragments.	0.0
			EB-45-10.0*					0.0
		GP	EB-45-12.5*	100			@ 11.0 feet: Few fines.	0.0
							▼ @ 12.0 feet: Becomes fine- to medium-grained. @ 12.5 feet: Becomes wet.	0.0
							14.0	0.0
15					SM		15.0 **SILTY SAND (FILL)**, gray, very fine- to fine-grained, little to some fines, wet, no hydrocarbon-like odors or staining.	0.0
		GP			SP		**SAND**, gray, fine- to medium-grained, trace to few fine gravel, wet, no hydrocarbon-like odors or staining.	0.0
								0.0
								0.0
20							20.0	0.0
							Boring completed at 20.0 feet.	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

SLR SB LOG CROWLEY RIFS BORINGS.GPJ GINT US.GDT 1/16/14

SLR
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BORING NUMBER EB-46

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/14/13 **COMPLETED** 6/14/13
GROUND ELEVATION 16.89' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING 11.0 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.4 **ASPHALT**.	0.3
		GP	EB-46-1.0*	100	SP		**SAND (FILL)**, brown, fine- to medium-grained, trace to few fine gravel, moist, no hydrocarbon-like odors or staining. 1.5	0.0
		GP	EB-46-2.5*		SP		**SAND (FILL)**, dark gray to black, fine-grained, trace fines, trace brick fragments, moist, weak hydrocarbon-like odor.	12.5
								8.1
5		GP		0	SP		From 4.0 to 8.0 feet: No recovery.	
		GP	EB-46-8.0*	80	SP		9.0	0.0
10		GP	EB-46-10.0*		SP		**SAND (FILL)**, brown, fine-grained, trace fines, moist, mottled, no hydrocarbon-like odors or staining. 10.8	0.0
					SM		**SILTY SAND (FILL)**, gray, fine-grained, moist, no hydrocarbon-like odors or staining. @ 11.0 feet: Becomes wet. 12.0	0.0
		GP	EB-46-12.5	100	SP		**SAND**, gray, fine- to medium-grained, trace to few fines, wet, no hydrocarbon-like odors or staining.	0.0
15								0.0
							16.0	0.0
							Boring completed at 16.0 feet.	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

SLR SB LOG CROWLEY RIFS BORINGS.GPJ GINT US.GDT 1/16/14

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BORING NUMBER EB-47

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/10/13 **COMPLETED** 6/10/13
GROUND ELEVATION 16.90' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 11.8 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.4 **ASPHALT**.	0.0
			EB-47-1.0*		SP		**GRAVELLY SAND (FILL)**, brown, some fine to coarse gravel, trace fines, damp, no hydrocarbon-like odors or staining.	0.0
		GP	EB-47-2.5	90			2.5	0.0
					SP		3.5 **SAND (FILL)**, brown, fine- to medium-grained, trace fine gravel, trace fines, damp, no hydrocarbon-like odors or staining.	0.0
5					SM		**SILTY SAND (FILL)**, dark gray, very fine- to fine-grained, some fines, damp, weak hydrocarbon-like odors.	0.0
			EB-47-5.0*					0.2
		GP	EB-47-7.5	100			6.5	0.2
					SP		7.5 **SAND (FILL)**, brown, fine-grained, damp, no hydrocarbon-like odors or staining.	0.2
					SP		**SAND (FILL)**, brown, very fine- to fine-grained, damp, no hydrocarbon-like odors or staining.	0.0
10							9.5	0.0
			EB-47-10.0*		SM		**SILTY SAND (FILL)**, brownish-gray, very fine- to fine-grained, some fines, damp, no hydrocarbon-like odors or staining.	0.0
		GP	EB-47.12.5	100			@ 11.0 feet: Becomes brown, very-fine grained. ▼ @ 11.8 feet: Becomes wet.	0.0
							13.0	0.0
					SP		13.5 **SAND**, dark brown, fine- to medium-grained, wet, no hydrocarbon-like odors or staining.	0.0
					SP		**SAND**, grayish-brown, very fine-grained, wet, no hydrocarbon-like odors or staining.	0.0
15							14.5	
			EB-47-15.0		SP		**SAND**, dark gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining.	0.0
		GP						0.0
								0.0
								0.0
20			EB-47-20.0				20.0	0.0
							Boring completed at 20.0 feet.	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-81-2.5' collected at interval of sample EB-47-2.5'.
▽ Water level at time of drilling.

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BORING NUMBER EB-50

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/14/13 **COMPLETED** 6/14/13
GROUND ELEVATION 16.83' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING N/A
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.4 **ASPHALT**.	0.0
					SP		1.0 **GRAVELLY SAND (FILL)**, brown, fine-grained, some fine to coarse gravel, moist, no hydrocarbon-like odors or staining.	0.0
		GP	EB-50-1.0*	100			**SAND (FILL)**, brown, fine- to medium-grained, few fine gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0
			EB-50-2.5'		SP			0.0
								0.0
							4.5	
5							**GRAVELLY SAND (FILL)**, brown, fine-grained, little to some fine to coarse gravel, moist, no hydrocarbon-like odors or staining.	0.0
		GP	EB-50-5.0*				@ 5.8 feet: Becomes gray, trace fines.	0.4
					SP		@ 6.0 feet: Becomes black, weak hydrocarbon-like odor.	
							@ 6.5 feet: No hydrocarbon-like odors or staining.	0.0
			EB-50-7.5*				@ 7.2 feet: Wood fragments.	0.0
							9.0	0.5
		GP		90			**CONCRETE DEBRIS**.	0.0
10							10.0	

Boring completed at 10.0 feet due to refusal.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER EB-51

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/13/13 **COMPLETED** 6/13/13
GROUND ELEVATION 16.71' **HOLE SIZE** 2.125-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING N/A
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.3 **ASPHALT**.	0.1
			EB-51-1.0*		SP		**GRAVELLY SAND (FILL)**, brown, fine-grained, some fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0
							2.0	
		GP	EB-51-2.5	95			**SAND (FILL)**, brown, fine-grained, trace fines, trace fine gravel, moist, no hydrocarbon-like odors or staining.	0.0
								0.0
								0.0
5					SP		From 4.5 to 4.7 feet: Becomes black, weak hydrocarbon-like odors.	3.3
			EB-51-5.0*					5.6
								4.0
							7.0 @ 6.5 feet: Brick fragments.	
		GP	EB-51-7.5*		CL-ML		**SILTY CLAY (FILL)**, gray to black, few fine-grained sand in layers, moist, strong hydrocarbon-like odors.	31.6
								547.7
							9.0	
10					SP		**SAND (FILL)**, grayish-brown to black, fine-grained, trace fines, trace fine gravel, moist, moderate hydrocarbon-like odors.	18.2
			EB-51-10.0*				10.0	37.0
							Boring completed at 10.0 feet due to refusal.	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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WELL NUMBER EMW-1S

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/12/13 **COMPLETED** 6/12/13
GROUND ELEVATION 16.65' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 13.5 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0					GP		0.5 **GRAVEL**.		Concrete
		GP	EMW-1S-2.5*	50	SP		**GRAVELLY SAND (FILL)**, brown, fine-grained, some fine gravel, moist, no hydrocarbon-like odors or staining.	0.0	Hydrated bentonite chips
							@ 3.0 feet: Cobble fragments in sampler.	0.0	
							4.0 From 3.8 to 4.0 feet: Brick fragments.	0.0	2"-diameter Sch. 40 PVC blank riser
5							**GRAVELLY SAND**, brown, fine- to medium-grained, little to some fine gravel, moist, no hydrocarbon-like odors or staining.	0.0	
			EMW-1S-5.0*		SP		@ 5.0 feet: Becomes fine-grained.	0.2	
		GP	EMW-1S-7.5	60			7.0	0.3	
					SP		**SAND**, dark brown, fine- to medium-grained, trace fine gravel, moist, no hydrocarbon-like odors or staining.	0.2	10x20 silica sand pack
10							8.8	0.2	
			EMW-1S-10.0*				**SILTY SAND**, gray, very fine- to fine-grained, moist, no hydrocarbon-like odors or staining.		
		GP		25	SM		From 10.0 feet to 13.0 feet: No recovery.		2"-diameter Sch. 40 PVC 0.010"-slotted screen
							▼	0.0	
15								0.0	
			EMW-1S-15.0				From 15.0 feet to 19.0 feet: No recovery.		
		GP						0.0	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
▼ Perched groundwater level at time of drilling.

(Continued Next Page)

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WELL NUMBER EMW-1S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20					SM		**SILTY SAND**, gray, very fine- to fine-grained, moist, no hydrocarbon-like odors or staining. *(continued)*		
							20.0 Boring completed at 20.0 feet.		2"-diameter Sch. 40 PVC end cap

WELL COMPLETION DETAILS:

0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 1.0 feet: Concrete.
1.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-2S

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/17/13 **COMPLETED** 6/17/13
GROUND ELEVATION 12.92' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 12.0 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							**CONCRETE**. 0.5		Concrete
		GP	EMW-2S-2.5*	90	GP		**SANDY GRAVEL (FILL)**, fine to coarse, some fine-grained sand, moist, no hydrocarbon-like odors or staining. 2.0	0.0	Hydrated bentonite chips
5					SP		**SAND (FILL)**, brown, fine-grained, trace fines, moist, no hydrocarbon-like odors or staining.	0.0	2"-diameter Sch. 40 PVC blank riser
		GP	EMW-2S-5.0*	80				0.0	
			EMW-2S-7.0				@ 6.5 feet: Becomes wet. 7.0	0.0	
10					SM		**SILTY SAND (FILL)**, brown, fine-grained, some fines, few wood fragments, moist, no hydrocarbon-like odors or staining. From 8.0 to 9.8 feet: No recovery.	0.0	10x20 silica sand pack
		GP	EMW-2S-10.0*	95			@ 10.8 feet: Becomes brownish-gray. ▼ 12.8	0.0	
			EMW-2S-12.5					0.0	
15					SP		**SAND**, brownish-gray to gray, fine-grained, few to little fines, wet, no hydrocarbon-like odors or staining.	0.0	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-2S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
		GP			SP		**SAND**, brownish-gray to gray, fine-grained, few to little fines, wet, no hydrocarbon-like odors or staining. *(continued)*	0.0	
								0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen
							18.2	0.0	
					SP		**SAND**, gray, fine- to medium-grained, trace fines, wet, no hydrocarbon-like odors or staining.	0.0	
20							20.0	0.0	2"-diameter Sch. 40 PVC end cap
							Boring completed at 20.0 feet.		

WELL COMPLETION DETAILS:

0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
4.8 to 19.6 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
19.86 to 19.8 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 1.0 feet: Concrete.
1.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-3S

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/11/13 **COMPLETED** 6/11/13
GROUND ELEVATION 16.92' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 13.8 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0			EMW-3S-1.0*		SP		**GRAVELLY SAND (FILL)**, brown, fine-grained, some fine to coarse gravel, trace fines, dry to moist, no hydrocarbon-like odors or staining.	0.0
		GP	EMW-3S-2.5	100				0.0
5			EMW-3S-5.0*				2.0 **SAND (FILL)**, brown, fine-grained, trace fine gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0
		GP	EMW-3S-7.5	80	SP			0.0
10			EMW-3S-10.0*				6.0 **GRAVELLY SAND (FILL)**, brown, very fine-grained, some fine to coarse gravel, moist, no hydrocarbon-like odors or staining.	0.0
		GP	EMW-3S-12.5	50	SP			0.0
15			EMW-3S-15.0*				8.5 **SAND (FILL)**, brown, very fine-grained, few fines, trace charred wood fragments, moist, no hydrocarbon-like odors or staining.	0.0
							From 11.0 to 11.5 feet: Wood fragments.	
							From 12.5 feet to 15.0 feet: No recovery.	0.0
							13.5 ▼ **SILTY SAND (FILL)**, gray, fine-grained, some fines, wet, hydrogen sulfide-like odor.	0.0
					SM			0.0

WELL DIAGRAM: Concrete; Hydrated bentonite chips; 2"-diameter Sch. 40 PVC blank riser; 10x20 silica sand pack; 2"-diameter Sch. 40 PVC 0.010"-slotted screen

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-3S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
		GP		100	SM		**SILTY SAND (FILL)**, gray, fine-grained, some fines, wet, hydrogen sulfide-like odor. *(continued)*	0.0 0.0 0.0 0.0	
20			EMW-3S-20.0				20.0 Boring completed at 20.0 feet.	0.0	2"-diameter Sch. 40 PVC end cap

WELL COMPLETION DETAILS:

0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 1.0 feet: Concrete.
1.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.

▼ Perched groundwater level at time of drilling.

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Bothell, Washington 98021
Telephone: 425.402.8800
Fax: 425.402.8488

WELL NUMBER EMW-4D

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/17/13 **COMPLETED** 6/17/13
GROUND ELEVATION 17.01' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 15.0 ft
LOGGED BY C. Lee/A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							**CONCRETE**.	0.0	Concrete
		GP	EMW-4D-2.5*	100	GP		1.5 **SANDY GRAVEL (FILL)**, brown, fine to coarse, little fine- to coarse-grained sand, very moist, no hydrocarbon-like odors or staining.	0.0	
							2.5 **SAND (FILL)**, light brown, fine-grained, moist, no hydrocarbon-like odors or staining.	0.0	
								0.0	
5			EMW-4D-5.0*		SP			0.0	
		GP		50				0.0	
			EMW-4D-7.5*				7.5	0.0	
							GRAVEL (FILL), gray, fine, few fine- to coarse-grained sand, moist, no hydrocarbon-like odors or staining. From 8.0 to 12.0 feet: Rock fragments and gravel blocked sampler.	0.0	
10		GP		0	GP				
			EMW-4D-12.5					0.0	
		GP		100			14.0	0.0	Hydrated bentonite chips
15			EMW-4D-15.0		SP		**SAND (FILL)**, dark brown to dark gray, fine-grained, moist to wet, trace wood fragments, weak hydrocarbon-like odors. ▼	0.0	
							15.5		
					ML			3.2	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-4D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
		GP		100	ML		**SANDY SILT**, dark gray, wet, trace wood fragments, weak hydrocarbon-like odors. *(continued)*	0.0	
							18.0	0.0	
		GP		100	SW		**SAND**, dark gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining	0.0	
20			EMW-4D-20.0					0.0	
		GP		100				0.0	
								0.0	
								0.0	
25			EMW-4D-25.0					0.0	2"-diameter Sch. 40 PVC blank riser
		GP		100				0.0	
							26.5	0.0	
					SP		**SAND**, dark gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining.	0.0	
								0.0	
30		GP	EMW-4D-30.0	100				0.0	
								0.0	
								0.0	

REMARKS

PID = Photoionization detector.
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GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-4D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
		GP		100			**SAND**, dark gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining. *(continued)*	0.0	
								0.0	
35			EMW-4D-35.0				@ 35.0 feet: Refusal with direct push drilling method; remaining depth logged from hollow-stem auger cuttings at time of well installation.	0.0	
40					SP				10x20 silica sand pack
45									2"-diameter Sch. 40 PVC 0.010"-slotted screen

REMARKS

PID = Photoionization detector.
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GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.

▼ Perched groundwater level at time of drilling.

SLR MW LOG CROWLEY RIFS WELLS.GPJ GINT US.GDT 1/16/14

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WELL NUMBER EMW-4D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
50					SP		**SAND**, dark gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining. *(continued)*		
							50.0 Boring completed at 50.0 feet.		2"-diameter Sch. 40 PVC end cap

WELL COMPLETION DETAILS:

0.3 to 40.0 feet: 2"-diameter Sch. 40 PVC blank riser.
40.0 to 49.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
49.8 to 50.0 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 2.0 feet: Concrete.
2.0 to 38.0 feet: Hydrated bentonite chips.
38.0 to 50.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-5S

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/13/13 **COMPLETED** 6/13/13
GROUND ELEVATION 17.00' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 12.2 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							0.3 **ASPHALT**.	0.3	Concrete
		GP	EMW-5S-1.0*		GP		**SANDY GRAVEL (FILL)**, brown, fine to coarse, some fine-grained sand, trace to few fines, moist, no hydrocarbon-like odors or staining.	0.0	
							2.0		
		GP	EMW-5S-2.5	60	SP		**GRAVELLY SAND (FILL)**, brown, fine-grained, some fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0	Hydrated bentonite chips
							2.8		
							SAND (FILL), brown, fine- to medium-grained, trace fines, moist, no hydrocarbon-like odors or staining. From 3.0 feet to 6.5 feet: No recovery.	0.0	
5					SP				2"-diameter Sch. 40 PVC blank riser
			EMW-5S-6.5				From 6.5 feet to 6.8 feet: Brick and charred wood fragments and ash.	0.0	
		GP	EMW-5S-7.5*	70			7.2 @ 6.8 feet: Cobble fragments in sampler.	0.0	
					SP		**SAND (FILL)**, brown, fine- to medium-grained, moist, no hydrocarbon-like odors or staining. @ 8.0 feet: Becomes fine-grained; becomes brownish-gray.	0.0	10x20 silica sand pack
								0.0	
10							9.5		
			EMW-5S-10.0*		SM		**SILTY SAND (FILL)**, brownish-gray, fine-grained, some fines, moist, no hydrocarbon-like odors or staining.	0.0	
								0.0	
		GP	EMW-5S-12.5	100			12.0 ▼ **SAND**, gray, fine- to medium-grained, moist to wet, mottled, no hydrocarbon-like odors or staining. @ 12.2 feet: Becomes wet.	0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen
					SP			0.0	
15							@ 14.5 feet: Few fines.	0.0	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-5S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP		100	SP		**SAND**, gray, fine- to medium-grained, moist to wet, mottled, no hydrocarbon-like odors or staining. *(continued)*	0.0 0.0 0.0 0.0 0.0	2"-diameter Sch. 40 PVC end cap
							20.0 Boring completed at 20.0 feet.		

WELL COMPLETION DETAILS:

0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 1.0 feet: Concrete.
1.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-6S

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/12/13 **COMPLETED** 6/12/13
GROUND ELEVATION 16.70' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 11.5 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							0.4 **ASPHALT**.	0.4	Concrete
		GP	EMW-6S-1.0*	95	SP		**GRAVELLY SAND (FILL)**, brown, fine-grained, some fine to coarse gravel, moist, no hydrocarbon-like odors or staining.	0.3	
			EMW-6S-2.5				@ 2.8 feet: Cobble fragments in sampler. From 3.2 to 3.5 feet: Brick fragments.	0.3	Hydrated bentonite chips
5							4.5	0.0	2"-diameter Sch. 40 PVC blank riser
		GP	EMW-6S-5.0*	90	SP		**SAND (FILL)**, dark brown, fine- to medium-grained, moist, no hydrocarbon-like odors or staining. @ 4.8 feet: Charred wood fragments.	0.0	
			EMW-6S-7.5				9.0	0.0	10x20 silica sand pack
10							**SILTY SAND**, gray, fine-grained, some fines, moist to wet, thin laminations of fine- to medium-grained sand, no hydrocarbon-like odors or staining.	0.0	
		GP	EMW-6S-10.0*		SM		▼ @ 11.5 feet: Becomes wet.	0.0	
			EMW-6S-12.5				@ 12.5 feet: Wood fragments.	0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen
15								0.0	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
▼ Perched groundwater level at time of drilling.

(Continued Next Page)

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WELL NUMBER EMW-6S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
		GP		100	SM		**SILTY SAND**, gray, fine-grained, some fines, moist to wet, thin laminations of fine- to medium-grained sand, no hydrocarbon-like odors or staining. *(continued)*	0.0 0.0 0.0	
							18.5		
					SP		**SAND**, gray, fine- to medium-grained, trace fines, wet, no hydrocarbon-like odors or staining.	0.0	
20							20.0	0.0	2"-diameter Sch. 40 PVC end cap
							Boring completed at 20.0 feet.		

WELL COMPLETION DETAILS:

0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 1.0 feet: Concrete.
1.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-7S

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/13/13 **COMPLETED** 6/13/13
GROUND ELEVATION 17.12' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 12.5 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							0.3 **ASPHALT**.		Concrete
		GP	EMW-7S-1.0*	95	SP		**GRAVELLY SAND (FILL)**, fine-grained, some fine to coarse gravel, moist, weak hydrocarbon-like odors.	0.7	
							@ 2.2 feet to 3.0 feet: Cobbles.	2.7	Hydrated bentonite chips
							3.5	0.0	
5					SP		**SAND**, brown, fine- to medium-grained, moist, no hydrocarbon-like odors or staining.	0.0	2"-diameter Sch. 40 PVC blank riser
		GP	EMW-7S-5.0*	100				0.0	
			EMW-7S-7.5					0.0	
								0.0	10x20 silica sand pack
10							9.8	0.0	
		GP	EMW-7S-10.0*		SP		**SAND**, gray, fine- to medium-grained, trace to few fines, moist, no hydrocarbon-like odors or staining.	0.0	
			EMW-7S-12.5				12.2	0.0	
					SM		▼ **SILTY SAND**, brownish-gray, fine-grained, some fines, moist to wet, no hydrocarbon-like odors or staining. @ 12.5 feet: Becomes wet.	0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen
15								0.0	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-7S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
		GP			SM		**SILTY SAND**, brownish-gray, fine-grained, some fines, moist to wet, no hydrocarbon-like odors or staining. *(continued)*	0.0	
								0.0	
							17.5		
					SP		**SAND**, dark gray, fine- to medium-grained, trace fine gravel, wet, no hydrocarbon-like odors or staining.	0.0	
								0.0	
20							20.0	0.0	2"-diameter Sch. 40 PVC end cap
							Boring completed at 20.0 feet.		

WELL COMPLETION DETAILS:

0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 1.0 feet: Concrete.
1.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-8S

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/12/13 **COMPLETED** 6/12/13
GROUND ELEVATION 16.97' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 12.0 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							0.3 **ASPHALT**.	0.0	Concrete
			EMW-8S-1.0*		SP		**GRAVELLY SAND (FILL)**, brown, fine-grained, some fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining. 1.5	0.0	
		GP	EMW-8S-2.5	90	SP		**SAND (FILL)**, brown, fine- to medium-grained, few fine to coarse gravel, moist, no hydrocarbon-like odors or staining.	0.0	Hydrated bentonite chips
							4.5	0.0	2"-diameter Sch. 40 PVC blank riser
5					SP		5.0 **SAND**, dark gray to black, very fine-grained, moist, weak hydrocarbon-like odor.	0.0	
			EMW-8S-5.0*		SP		**SAND**, dark gray, fine- to medium-grained, trace fines, moist, weak hydrocarbon-like odor.	0.0	
		GP	EMW-8S-7.5	100				0.0	10x20 silica sand pack
							9.0	0.0	
10							**SILTY SAND**, gray, fine-grained, some fines, moist, no hydrocarbon-like odors or staining.	0.0	
			EMW-8S-10.0*		SM				
		GP	EMW-8S-12.5	80			▼ @ 12.0 feet: Becomes wet.	0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen
							14.2	0.0	
15					SP		**SAND**, dark gray, fine- to medium-grained, trace fines, wet, no hydrocarbon-like odors or staining.	0.0	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-8S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP		--	SP		**SAND**, dark gray, fine- to medium-grained, trace fines, wet, no hydrocarbon-like odors or staining. *(continued)*	0.0 0.0 0.0 0.0 0.0	2"-diameter Sch. 40 PVC end cap
							20.0 Boring completed at 20.0 feet.		

WELL COMPLETION DETAILS:

0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 1.0 feet: Concrete.
1.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-9S

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/13/13 **COMPLETED** 6/13/13
GROUND ELEVATION 16.94' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 12.0 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**.	
			EMW-9S-1.0*		SP		**GRAVELLY SAND (FILL)**, brown, fine-grained, fine to coarse gravel, moist, no odors or staining.	0.1
							2.0	
		GP	EMW-9S-2.5		SP		**SAND (FILL)**, brown, fine- to medium-grained, few fine gravel, trace fines, moist, no hydrocarbon-like odors or staining.	1.2
							@ 2.5 feet: Becomes black, weak hydrocarbon-like odor; trace brick fragments.	0.0
							@ 3.0 feet: No hydrocarbon-like odors or staining.	
							@ 4.0 feet: Becomes brown.	0.0
5							5.0 @ 4.8 feet: Becomes gray.	1.6
			EMW-9S-5.0*		SM		**SILTY SAND (FILL)**, black, very fine-grained, little fines, moist, weak hydrocarbon-like odor.	6.7
							@ 5.1 feet: Becomes brown; no hydrocarbon-like odors or staining.	
							@ 6.0 feet: Becomes black; weak hydrocarbon-like odor.	
		GP	EMW-9S-7.5	100			7.2 @ 6.5 feet: Cobble fragments in sampler.	0.7
					SP		**SAND**, brown, fine- to medium-grained, trace to few fines, moist, no hydrocarbon-like odors or staining.	0.2
							@ 8.8 feet: Becomes fine-grained, mottled.	0.3
10							@ 9.0 feet: Becomes brownish-gray.	0.0
			EMW-9S-10.0*					0.0
							11.0	
					SM		**SILTY SAND**, brownish-gray, fine-grained, little to some fines, moist, no hydrocarbon-like odors or staining.	0.0
		GP	EMW-9S-12.5				▼ @ 12.0 feet: Becomes wet.	0.0
								0.0
15								0.0
								0.0

WELL DIAGRAM: Concrete; Hydrated bentonite chips; 2"-diameter Sch. 40 PVC blank riser; 10x20 silica sand pack; 2"-diameter Sch. 40 PVC 0.010"-slotted screen

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
▼ Perched groundwater level at time of drilling.

(Continued Next Page)

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Fax: 425.402.8488

WELL NUMBER EMW-9S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
					SM		**SILTY SAND**, brownish-gray, fine-grained, little to some fines, moist, no hydrocarbon-like odors or staining. *(continued)*	0.0	
							17.0		
		GP		100	SP		**SAND**, gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining.	0.0	
								0.0	
20							20.0	0.0	2"-diameter Sch. 40 PVC end cap
							Boring completed at 20.0 feet.		

WELL COMPLETION DETAILS:

0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 1.0 feet: Concrete.
1.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-10D

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/19/13 **COMPLETED** 6/19/13
GROUND ELEVATION 17.06' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 12.0 ft
LOGGED BY C. Lee **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							0.5 **ASPHALT**.		
		GP	EMW-10D-1.0*	90	GP		**GRAVEL (FILL)**, gray, fine to coarse, few fine-grained sand, damp, no hydrocarbon-like odors or staining. 2.0	0.0	Concrete
			EMW-10D-2.5		SP		**SAND**, brown, fine-grained, few fine gravel, thin layers of dark brown sand, damp, no hydrocarbon-like odors or staining.	0.9	
5		GP	EMW-10-5.0*	100			@ 4.5 feet: Becomes dark brown; moderate creosote-like odor.	1.2	
								4.4	
			EMW-10D-7.5				@ 6.5 feet: Creosote-like odor becomes weaker.	1.1	
								2.5	
							8.5		
10		GP	EMW-10D-10.0*	100	ML		**SANDY SILT**, grayish brown, little fine-grained sand, moist, weak to no creosote-like odors. 11.0	2.5	
								4.6	
					SM		**SILTY SAND**, brown, fine-grained, little fines, moist to wet, no hydrocarbon-like odors.	1.3	
							12.0 ▼	2.5	
			EMW-10D-12.5		SP		**SAND**, brown, fine-grained, few fines, wet, weak creosote-like odor.	1.6	
		GP		100			@ 13.5 feet: Becomes grayish-brown. 14.0	2.1	Hydrated bentonite chips
15					ML		**SANDY SILT**, gray, some very fine-grained sand, wet, weak creosote-like odor. 15.0	1.9	
			EMW-10D-15.0*		SP		**SAND**, dark gray, fine- to medium-grained, wet, weak creosote-like odor.	1.0	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
▼ Perched groundwater level at time of drilling.

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Fax: 425.402.8488

WELL NUMBER EMW-10D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
		GP		100	SP		**SAND**, dark gray, fine- to medium-grained, wet, weak creosote-like odor. *(continued)*	3.0	
								4.2	
								1.9	
20							From 19.0 feet to 21.0 feet: Sheen on soil; moderate creosote-like odor.	4.1	
			EMW-10D-20.0					5.0	
		GP		100				4.0	
								1.9	
							@ 23.0 feet: Sheen on soil; moderate creosote-like odor.	2.4	
							From 24.0 to 50.0 feet: Strong creosote-like odor; brown staining (product) on sample liners and equipment; oily coating on soil.	4.0	
25			EMW-10D-25.0						2"-diameter Sch. 40 PVC blank riser
		GP		100				6.8	
								3.9	
								6.1	
								6.5	
30		GP	EMW-10D-30.0	100				3.8	
								4.1	
								4.0	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-10D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
							SAND, dark gray, fine- to medium-grained, wet, weak creosote-like odor. *(continued)*	3.1	
								2.6	
		GP		100				4.9	
35			EMW-10D-35.0*					12.6	
								6.8	
		GP		100				11.3	
								4.1	
			EMW-10D-40.0					5.9	
40					SP		From 40.0 to 42.0 feet: Sample tube was stuck in sampler; driller shook soil out of sampler.		
		GP		--					10x20 silica sand pack
								3.6	
								1.9	
		GP		100				2.4	
45									2"-diameter Sch. 40 PVC 0.010"-slotted screen
								3.6	
								3.9	
								4.1	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-10D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
50		GP	EMW-10D-50.0	100	SP		**SAND**, dark gray, fine- to medium-grained, wet, weak creosote-like odor. *(continued)*	2.9	2"-diameter Sch. 40 PVC end cap
							50.0 Boring completed at 50.0 feet.		

WELL COMPLETION DETAILS:

0.3 to 40.0 feet: 2"-diameter Sch. 40 PVC blank riser.
40.0 to 49.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
49.8 to 50.0 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 2.0 feet: Concrete.
2.0 to 38.0 feet: Hydrated bentonite chips.
38.0 to 50.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
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GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-11S

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/12/13 **COMPLETED** 6/12/13
GROUND ELEVATION 17.07' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 12.2 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							0.4 **ASPHALT**.	0.1	Concrete
		GP	EMW-11S-1.0*	90	SP		**GRAVELLY SAND (FILL)**, brown, fine to coarse, some fine-grained sand, trace fines, moist, no hydrocarbon-like odors or staining.	0.0	
							2.0		
			EMW-11S-2.5		SP		**SAND (FILL)**, brown, fine- to medium-grained, trace fine gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0	Hydrated bentonite chips
								0.0	
							4.2	0.0	2"-diameter Sch. 40 PVC blank riser
5					SP		**GRAVELLY SAND (FILL)**, brown, very fine-grained, little to some gravel, few fines, moist, no hydrocarbon-like odors or staining.	0.1	
							5.5		
		GP	EMW-11S-5.0*	100	SP		**SAND**, brown, fine- to medium-grained, trace fine to coarse gravel, trace fines, moist, no hydrocarbon-like odors or staining.	0.0	
							@ 6.5 feet: Becomes dark brown, fine- to medium-grained, no gravel, no fines.	0.0	
			EMW-11S-7.5				@ 8.0 feet: Becomes brown, fine-grained, little fines.	0.0	10x20 silica sand pack
10							@ 9.5 feet: Becomes dark brown, fine- to medium-grained, no fines.	0.0	
			EMW-11S-10.0*				@ 10.8 feet: Becomes fine-grained, few fine gravel.	0.0	
							12.0	0.0	
		GP	EMW-11S-12.5	100	SM		▼ **SILTY SAND**, gray, fine-grained, some fines, moist to wet, mottled, no hydrocarbon-like odors or staining. @ 12.2 feet: Becomes wet.	0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen
							14.2	0.0	
15					SP		**SAND**, brownish-gray, fine- to medium-grained, wet, mottled, no hydrocarbon-like odors or staining.	0.0	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
▼ Perched groundwater level at time of drilling.

(Continued Next Page)

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WELL NUMBER EMW-11S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
		GP		90	SP		**SAND**, brownish-gray, fine- to medium-grained, wet, mottled, no hydrocarbon-like odors or staining. *(continued)*	0.0 0.0 0.0 0.0	
20							20.0 Boring completed at 20.0 feet.	0.0	2"-diameter Sch. 40 PVC end cap

WELL COMPLETION DETAILS:

0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 1.0 feet: Concrete.
1.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-12S

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/11/13 **COMPLETED** 6/11/13
GROUND ELEVATION 17.12' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 12.2 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							0.5 **ASPHALT**.	0.0	Concrete
		GP	EMW-12S-1.0*		GP		1.5 **SANDY GRAVEL (FILL)**, brown, fine to coarse, some fine-grained sand, trace fines, moist, no hydrocarbon-like odors or staining.	0.0	
		GP	EMW-12S-2.5	100	SP		**SAND (FILL)**, brown, fine-grained, trace fines, moist, no hydrocarbon-like odors or staining.	0.0	Hydrated bentonite chips
							3.5	0.0	
					SM		4.0 **SILTY SAND (FILL)**, dark gray, fine-grained, some fines, few fine gravel, few brick fragments, moist, weak hydrocarbon-like odors.	0.7	2"-diameter Sch. 40 PVC blank riser
					SP		4.5 **SANDY GRAVEL (FILL)**, gray, fine to coarse, some fine-grained sand, moist, no hydrocarbon-like odors or staining.		
5					SM		**SILTY SAND (FILL)**, dark gray, fine-grained, some fines, few fine gravel, some asphalt fragments, moist, weak hydrocarbon-like odors.	13.2	
							6.5	0.4	
		GP	EMW-12S-5.0*		SP		**SAND**, brown, fine- to medium-grained, trace fine gravel, moist, no hydrocarbon-like odors or staining.	0.0	
		GP	EMW-12S-7.5	100			8.0	0.0	10x20 silica sand pack
					SP		**SAND**, brown, very fine-grained, little fines, moist, no odors or staining.	0.0	
10								0.0	
		GP	EMW-12S-10.0*					0.0	
		GP	EMW-12S-12.5	100			▼ @ 12.2 feet: Becomes wet.	0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen
							13.0	0.0	
					SP		**SAND**, dark gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining.	0.0	
15								0.0	
			EMW-12S-15.0*						

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
▼ Perched groundwater level at time of drilling.

(Continued Next Page)

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WELL NUMBER EMW-12S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
		GP		100	SP		**SAND**, dark gray, fine- to medium-grained, wet, no hydrocarbon-like odors or staining. *(continued)*	0.0 0.0 0.0 0.0	
20			EMW-12S-20.0				20.0 Boring completed at 20.0 feet.	0.0	2"-diameter Sch. 40 PVC end cap

WELL COMPLETION DETAILS:

0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 1.0 feet: Concrete.
1.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-13S

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/11/13 **COMPLETED** 6/11/13
GROUND ELEVATION 16.79' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 12.5 ft
LOGGED BY A. Meugniot **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							0.5 **ASPHALT**.	0.0	Concrete
		GP	EMW-13S-1.0*		GP		**SANDY GRAVEL (FILL)**, brown, fine to coarse, some fine-grained sand, moist, no hydrocarbon-like odors or staining. 2.0	0.0	
		GP	EMW-13S-2.5	100	SP		**SAND (FILL)**, brown, fine-grained, few fine gravel and cobbles, moist, no hydrocarbon-like odors or staining.	0.0	Hydrated bentonite chips
5								0.0	2"-diameter Sch. 40 PVC blank riser
		GP	EMW-13S-5.0*				@ 6.0 feet: Becomes fine- to medium-grained.	0.0	
		GP	EMW-13S-7.5*	100			7.5	0.0	
					SM		**SILTY SAND (FILL)**, gray to dark gray, very fine- to fine-grained, few fine gravel, few brick fragments, moist, weak hydrocarbon-like odor. 8.8	0.0	10x20 silica sand pack
10					GP		9.0 **GRAVEL (FILL)**, brown, fine to coarse, few fine-grained sand, moist, no hydrocarbon-like odors or staining.	0.0	
							BRICK DEBRIS, moist, no hydrocarbon-like odors or staining.	0.0	
		GP	EMW-13S-12.5*	80			12.0	0.0	
					SP		▼ **SAND (FILL)**, brown, fine-grained, some fine gravel, few red brick fragments, moist, no hydrocarbon-like odors or staining. @ 12.5 feet: Becomes fine- to medium-grained, wet. 13.5	0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen
15					SP		**SAND**, gray, fine-grained, some fines, few fine gravel, wet, no hydrocarbon-like odors or staining.	0.0	
							16.0	0.0	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.
▼ Perched groundwater level at time of drilling.

(Continued Next Page)

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WELL NUMBER EMW-13S

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
		GP		90	SP		**GRAVELLY SAND**, gray, fine-grained, fine to coarse gravel, wet, no hydrocarbon-like odors or staining.	0.0 0.0	
							18.0		
					SM		**SILTY SAND**, gray, fine-grained, wet, no hydrocarbon-like odors or staining.	0.0 0.0	
20							20.0	0.0	2"-diameter Sch. 40 PVC end cap
							Boring completed at 20.0 feet.		

WELL COMPLETION DETAILS:

0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
5.0 to 19.8 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
19.8 to 20.0 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 1.0 feet: Concrete.
1.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 20.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-14D

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/17/13 **COMPLETED** 6/17/13
GROUND ELEVATION 16.74' **HOLE SIZE** 8-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 8.0 ft
LOGGED BY C. Lee **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							0.5 **ASPHALT**.	0.0	Concrete
		GP	EMW-14D-1.0*	100	GP		**GRAVEL (FILL)**, gray, fine to coarse, few fines, dry, no hydrocarbon-like odors or staining.	0.0	
							2.0		
			EMW-14D-2.5		SP		**SAND (FILL)**, brown, fine-grained, few fine gravel, damp, no hydrocarbon-like odors or staining.	0.0	
								0.0	
5							5.0	0.0	
		GP	EMW-14D-5.0*	60	SP		**GRAVELLY SAND (FILL)**, brown, fine-grained, some fine gravel, damp, no hydrocarbon-like odors or staining.	0.0	
			EMW-14D-7.5				▼ @ 8.0 feet: Becomes wet.	0.0	
								0.0	
10		GP	EMW-14D-10.0*	75			10.0	0.0	
					SM		**SILTY SAND (FILL)**, brownish-gray, fine-grained, some fines, wet, no hydrocarbon-like odors or staining.		
							11.0		
					GP		**GRAVEL (FILL)**, gray, coarse, wet, no hydrocarbon-like odors or staining.	0.0	
			EMW-14D-12.5						
		GP		80			13.5	0.0	Hydrated bentonite chips
					SP		**GRAVELLY SAND**, dark brown to reddish-brown, fine-grained, little fine gravel, wet, no hydrocarbon-like odors or staining.		
15			EMW-14D-15.0*				15.0		
					SP		**SAND**, reddish-brown, fine-grained, wet, no hydrocarbon-like odors or staining.	0.0	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.
▼ Perched groundwater level at time of drilling.

(Continued Next Page)

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WELL NUMBER EMW-14D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
					SP		16.5		
		GP		100			**SAND**, gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining.	0.0	
20								0.0	
		GP	EMW-14D-20.0	100				0.0	
								0.0	
25		GP	EMW-14D-25.0	100	SW			0.0	2"-diameter Sch. 40 PVC blank riser
								0.0	
30		GP	EMW-14D-30.0	100				0.0	

REMARKS

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GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-14D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
35		GP	EMW-14D-35.0	100	SW		**SAND**, gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining. *(continued)*	0.0	
		GP		100				0.0	
40		GP	EMW-14D-40.0	100				0.0	
		GP		100				0.0	10x20 silica sand pack
45		GP	EMW-14D-45.0	--				0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen
								0.0	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.
▼ Perched groundwater level at time of drilling.

(Continued Next Page)

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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
50		GP	EMW-14D-50.0	100	SW		**SAND**, gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining. *(continued)*	0.0	
							50.0 Boring completed at 50.0 feet.		

2"-diameter Sch. 40 PVC end cap
Native material (heave).

WELL COMPLETION DETAILS:

0.3 to 39.5 feet: 2"-diameter Sch. 40 PVC blank riser.
39.5 to 49.5 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
49.5 to 49.7 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 1.5 feet: Concrete.
1.5 to 37.5 feet: Hydrated bentonite chips.
37.5 to 49.7 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-15D

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/18/13 **COMPLETED** 6/18/13
GROUND ELEVATION 16.43' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 7.5 ft
LOGGED BY C. Lee **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0								0.5 **ASPHALT**.		Concrete
		GP	EMW-15D-1.0*	90		GP		**SANDY GRAVEL (FILL)**, brown, fine to coarse, trace fines, damp, no hydrocarbon-like odors or staining. 2.0	0.0	
			EMW-15D-2.5			SP		**SAND (FILL)**, brown, fine-grained, few fine gravel, damp, no hydrocarbon-like odors or staining. 6.5	0.0	
5		GP	EMW-15D-5.0*	50		ML		**SANDY SILT**, brown, some fine-grained sand, moist to wet, no odors or staining. ▼ @ 7.5 feet: No recovery. 9.0	0.0	
10		GP	EMW-15D-10.0*	90		SP		**SAND (FILL)**, black, fine-grained, few fine-gravel, wet, no hydrocarbon-like odors or staining. 11.0	0.0	
						GP		**GRAVEL (FILL)**, gray, coarse, wet, no hydrocarbon-like odors or staining. 12.0	0.0	
		GP	EMW-15D-12.5	100		SP		**SAND (FILL)**, brown, fine-grained, few fine gravel, wet, no hydrocarbon-like odors or staining. 15.5	0.0	Hydrated bentonite chips
15			EMW-15D-15.0*			GP			0.0	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.
▼ Perched groundwater level at time of drilling.

(Continued Next Page)

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WELL NUMBER EMW-15D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
		GP		100		GP		**GRAVEL (FILL)**, gray, coarse, wet, no hydrocarbon-like odors or staining. *(continued)*	0.0	
								17.0 **SAND**, black, fine-grained, wet, no hydrocarbon-like odors or staining.		
								@ 18.0 feet: Brick fragments in sampler.	0.0	
20		SS	EMW-15D-20.0	100	50/5"			@ 20.0 feet: Refusal with Geoprobe.	0.0	
								@ 22.5 feet: Becomes dark gray; becomes fine- to medium-grained (auger cuttings).		
25		SS	EMW-15D-25.0	100	47	SP			0.0	2"-diameter Sch. 40 PVC blank riser
30								@ 30.0 feet: Unable to drive split-spoon sampler due to heave in augers.		

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.

▼ Perched groundwater level at time of drilling.

(Continued Next Page)

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WELL NUMBER EMW-15D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
								SAND, black, fine-grained, wet, no hydrocarbon-like odors or staining. *(continued)*		
35								@ 35.0 feet: Unable to drive split-spoon sampler due to heave in augers.		
40						SP		@ 40.0 feet: Unable to drive split-spoon sampler due to heave in augers.		10x20 silica sand pack
45								@ 45.0 feet: Unable to drive split-spoon sampler due to heave in augers.		2"-diameter Sch. 40 PVC 0.010"-slotted screen

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.

▼ Perched groundwater level at time of drilling.

(Continued Next Page)

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WELL NUMBER EMW-15D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
50						SP		**SAND**, black, fine-grained, wet, no hydrocarbon-like odors or staining. *(continued)*		
								50.0 @ 50.0 feet: Unable to drive split-spoon sampler due to heave in augers. Boring completed at 50.0 feet.		2"-diameter Sch. 40 PVC end cap

WELL COMPLETION DETAILS:

0.3 to 39.5 feet: 2"-diameter Sch. 40 PVC blank riser.
39.5 to 49.5 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
49.5 to 49.7 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 1.5 feet: Concrete.
1.5 to 37.5 feet: Hydrated bentonite chips.
37.5 to 49.7 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/20/13.

▼ Perched groundwater level at time of drilling.

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WELL NUMBER EMW-16D

CLIENT Crowley Marine Services
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00030
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 6/18/13 **COMPLETED** 6/18/13
GROUND ELEVATION 16.99' **HOLE SIZE** 8-inch diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 9.0 ft
LOGGED BY C. Lee **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							0.5 **ASPHALT**.		
		GP	EMW-16D-1.0*	80	GP		**SANDY GRAVEL (FILL)**, brown, fine to coarse, some fine-grained sand, damp, no hydrocarbon-like odors or staining. 2.0	0.0	Concrete
							CONCRETE DEBRIS. 4.0	0.0	
5		GP	EMW-16D-5.0*	100	SP		**SAND (FILL)**, brown, fine-grained, damp, no hydrocarbon-like odors or staining. 6.0	0.0	
				100	GP		**GRAVEL (FILL)**, coarse, few fine-grained sand, damp, no hydrocarbon-like odors or staining. 7.0		
			EMW-16D-7.5		SP		**SAND (FILL)**, brown, fine-grained, trace fine gravel, damp, no hydrocarbon-like odors or staining. ▼ @ 9.0 feet: Becomes wet. 10.5	0.0	
10		GP	EMW-16D-10.0*	100	SM		**SILTY SAND (FILL)**, brown, very fine-grained, some fines, wet, no hydrocarbon-like odors or staining. 13.5	0.0	
		GP	EMW-16D-12.5		SP		**SAND (FILL)**, brown, fine-grained, wet, no hydrocarbon-like odors or staining. 15.0	0.0 100	Hydrated bentonite chips
15			EMW-16D-15.0		SW		**SAND**, dark gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining.	0.0	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
▼ Perched groundwater level at time of drilling.

(Continued Next Page)

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WELL NUMBER EMW-16D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
20		GP		100	SW		**SAND**, dark gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining. *(continued)*	0.0	
		GP	EMW-16D-20.0	100				0.0	
25		GP	EMW-16D-25.0	100				0.0	
		GP		100				0.0	
30		GP	EMW-16D-30.0	100				0.0	
								0.0	2"-diameter Sch. 40 PVC blank riser

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.

▼ Perched groundwater level at time of drilling.

(Continued Next Page)

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CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
35		GP	EMW-16D-35.0	100	SW		**SAND**, dark gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining. *(continued)*	0.0	
		GP		100				0.0	
40		GP	EMW-16D-40.0					0.0	
								0.0	10x20 silica sand pack
45		GP	EMW-16D-45.0	100				0.0	
								0.0	2"-diameter Sch. 40 PVC 0.010"-slotted screen

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.

▼ Perched groundwater level at time of drilling.

(Continued Next Page)

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WELL NUMBER EMW-16D

CLIENT Crowley Marine Services **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00030 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
50					SW		**SAND**, dark gray, fine- to coarse-grained, wet, no hydrocarbon-like odors or staining. *(continued)* Geoprobe boring completed at 48.0 feet.		
							50.0 Boring completed at 50.0 feet.		2"-diameter Sch. 40 PVC end cap Native material (heave)

WELL COMPLETION DETAILS:

0.3 to 39.5 feet: 2"-diameter Sch. 40 PVC blank riser.
39.5 to 49.3 feet: 2"-diameter Sch. 40 PVC 0.010"-slotted screen.
49.3 to 49.5 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 1.5 feet: Concrete.
1.5 to 37.5 feet: Hydrated bentonite chips.
37.5 to 49.5 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Well installed after Geoprobe boring by using a hollow-stem auger drill rig on 6/21/13.
▼ Perched groundwater level at time of drilling.

Key to Exploration Logs

Sample Descriptions

Classification of soils in this report is based on visual field and laboratory observations which include density/consistency, moisture condition, grain size, and plasticity estimates and should not be construed to imply field nor laboratory testing unless presented herein. Visual-manual classification methods of ASTM D 2488 were used as an identification guide.

Soil descriptions consist of the following:
Density/consistency, moisture, color, minor constituents, MAJOR CONSTITUENT, additional remarks.

Density/Consistency

Soil density/consistency in borings is related primarily to the Standard Penetration Resistance. Soil density/consistency in test pits is estimated based on visual observation and is presented parenthetically on the test pit logs.

SAND or GRAVEL Density	Standard Penetration Resistance in Blows/Foot	SILT or CLAY Consistency	Standard Penetration Resistance in Blows/Foot	Approximate Shear Strength in TSF
Very loose	0 - 4	Very soft	0 - 2	<0.125
Loose	4 - 10	Soft	2 - 4	0.125 - 0.25
Medium dense	10 - 30	Medium stiff	4 - 8	0.25 - 0.5
Dense	30 - 50	Stiff	8 - 15	0.5 - 1.0
Very dense	>50	Very stiff	15 - 30	1.0 - 2.0
		Hard	>30	>2.0

Moisture

Dry	Little perceptible moisture
Damp	Some perceptible moisture, probably below optimum
Moist	Probably near optimum moisture content
Wet	Much perceptible moisture, probably above optimum

Minor Constituents

	Estimated Percentage
Not identified in description	0 - 5
Slightly (clayey, silty, etc.)	5 - 12
Clayey, silty, sandy, gravelly	12 - 30
Very (clayey, silty, etc.)	30 - 50

Legends

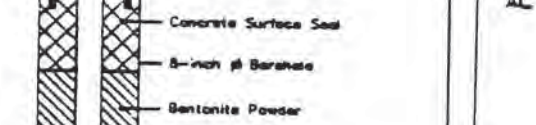
Sampling

BORING SAMPLES

⊠	Split Spoon
⊘	Shelby Tube
▥	Cuttings
⊞	Core Run
*	No Sample Recovery
P	Tube Pushed, Not Driven

Test Symbols

GS	Grain Size Classification
CN	Consolidation
TUU	Triaxial Unconsolidated Undrained
TCU	Triaxial Consolidated Undrained
TCD	Triaxial Consolidated Drained
QU	Unconfined Compression
DS	Direct Shear
K	Permeability
PP	Pocket Penetrometer Approximate Compressive Strength in TSF
TV	Torvane Approximate Shear Strength in TSF
CBR	California Bearing Ratio
MD	Moisture Density Relationship
AL	Atterberg Limits



Ground Water Observations

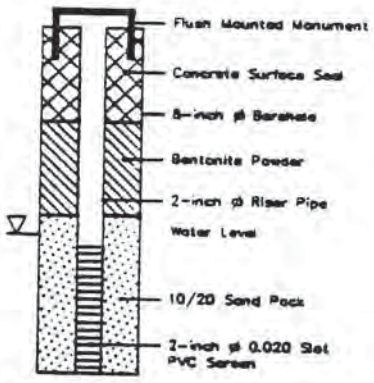


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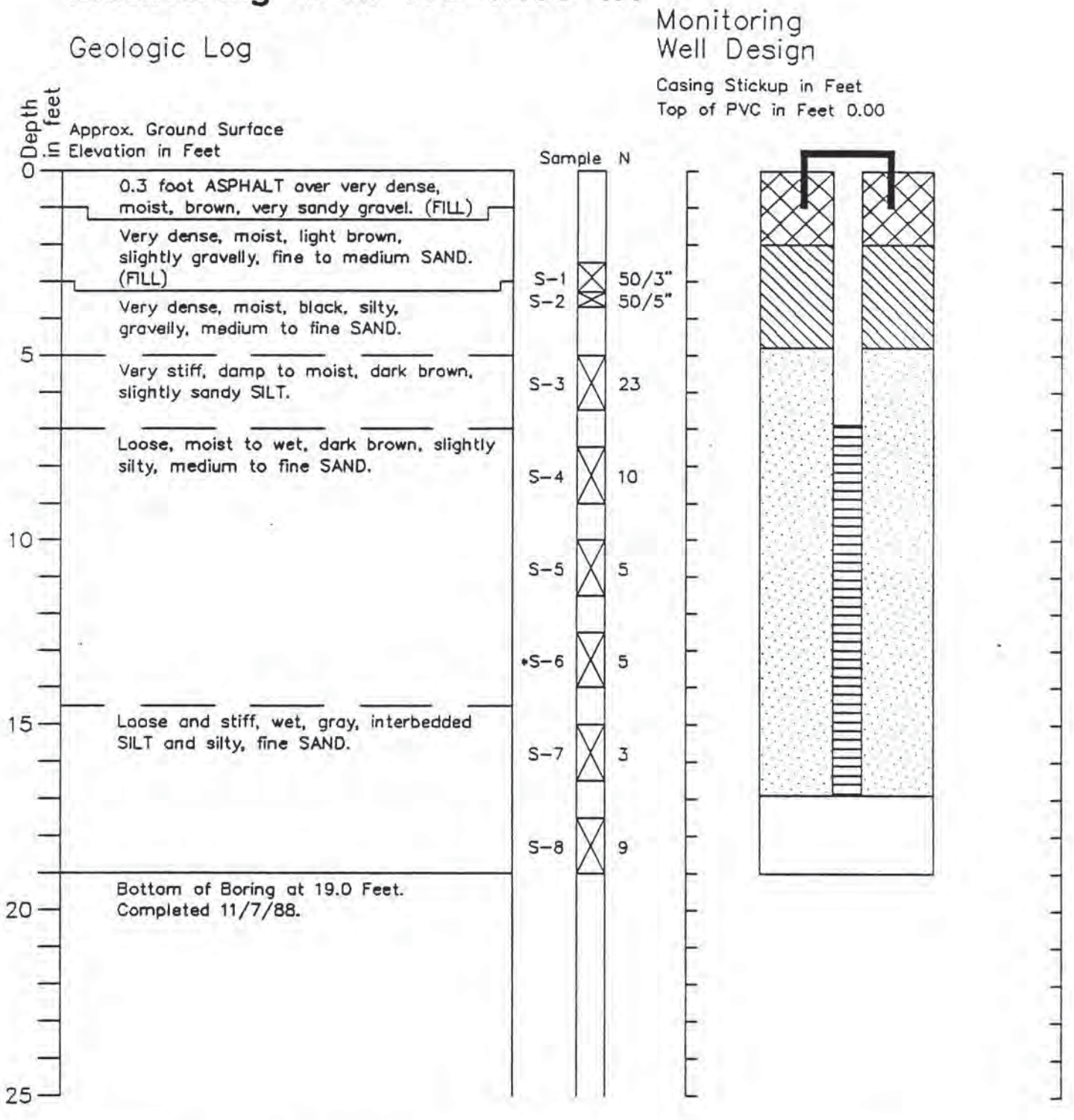
Figure A-1

Boring Log and Construction Data for Monitoring Well HC-1/HC-1A



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

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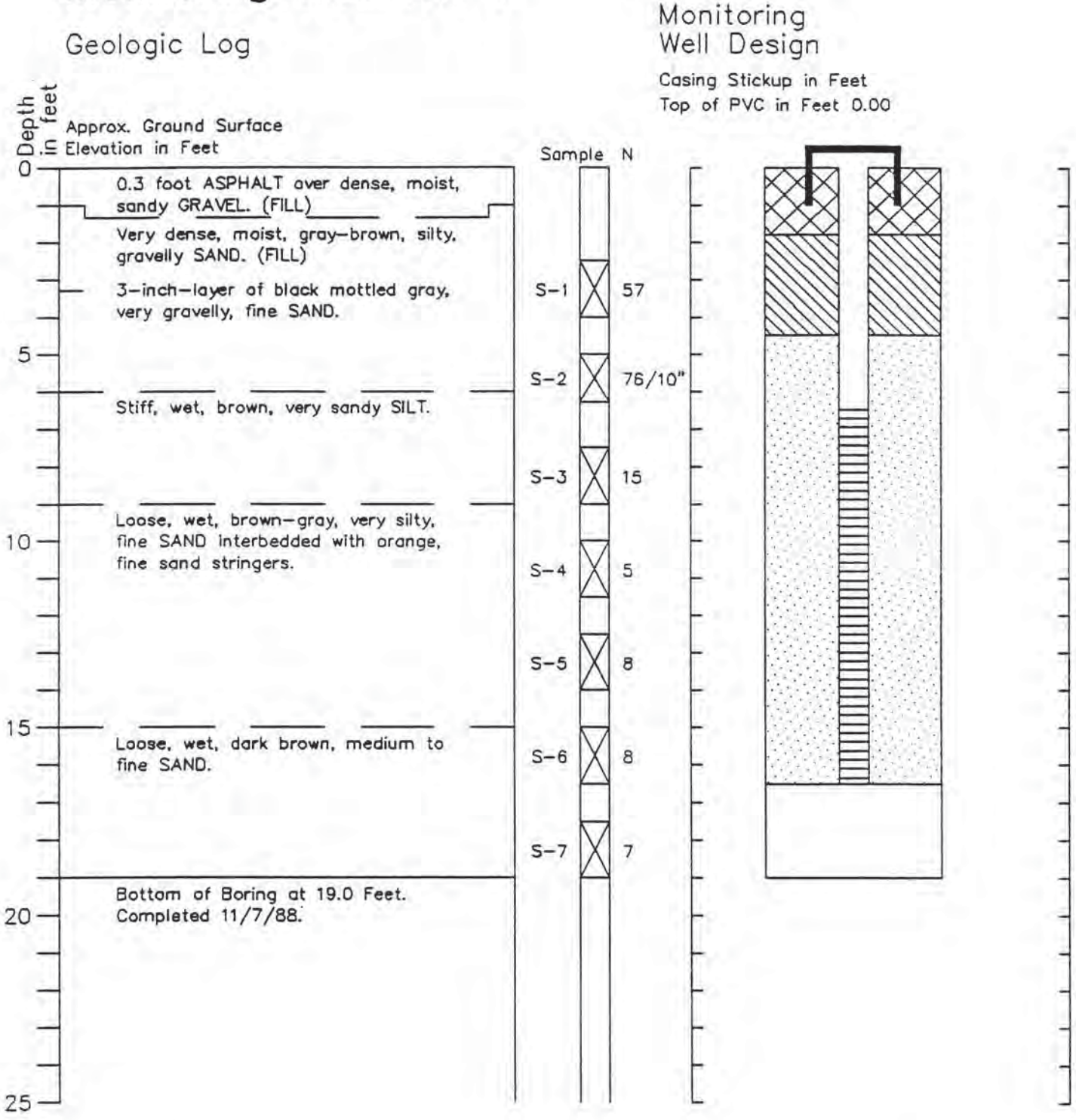
Figure A-2

Boring Log and Construction Data for Monitoring Well HC-4



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

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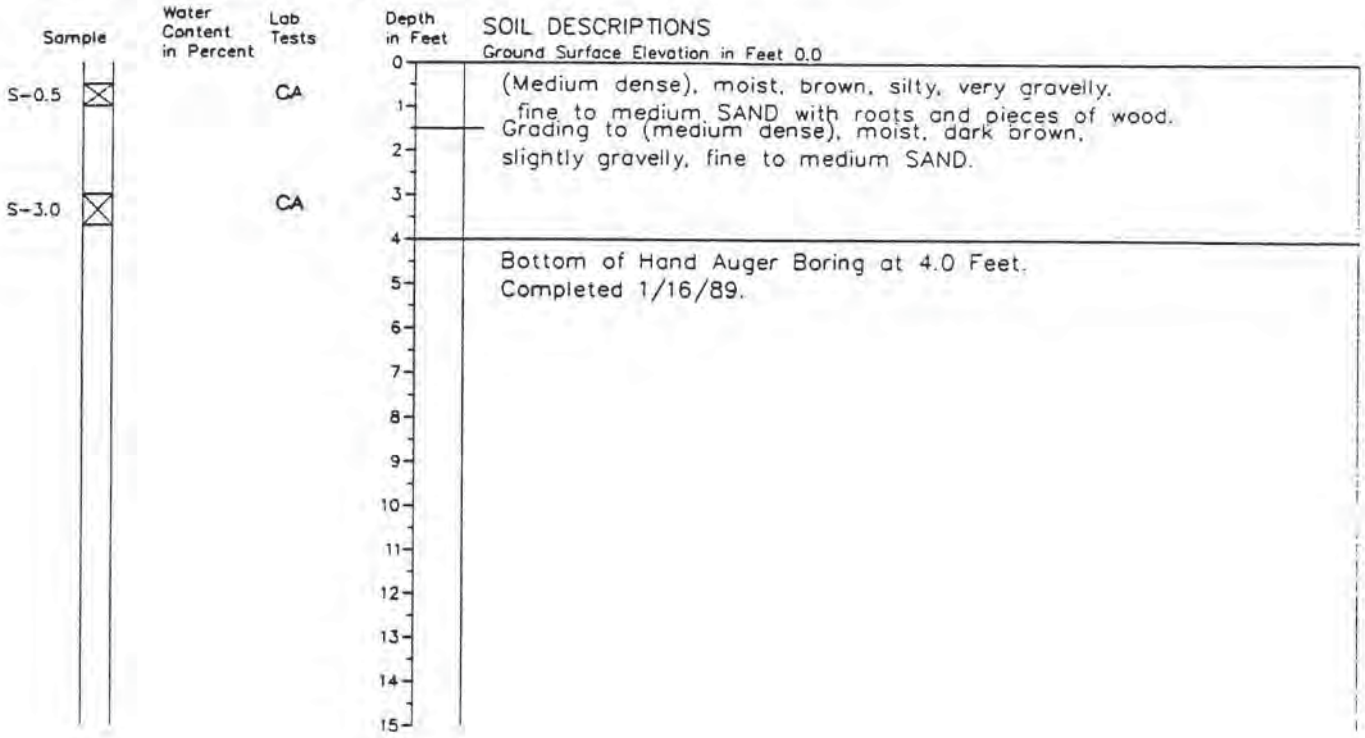
Figure A-3

Test Pit Log HC-5



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater conditions, if indicated, are at time of excavation. Conditions may vary with time.
4. CA = Chemical Analysis

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Figure A-4

Boring Log HC-6

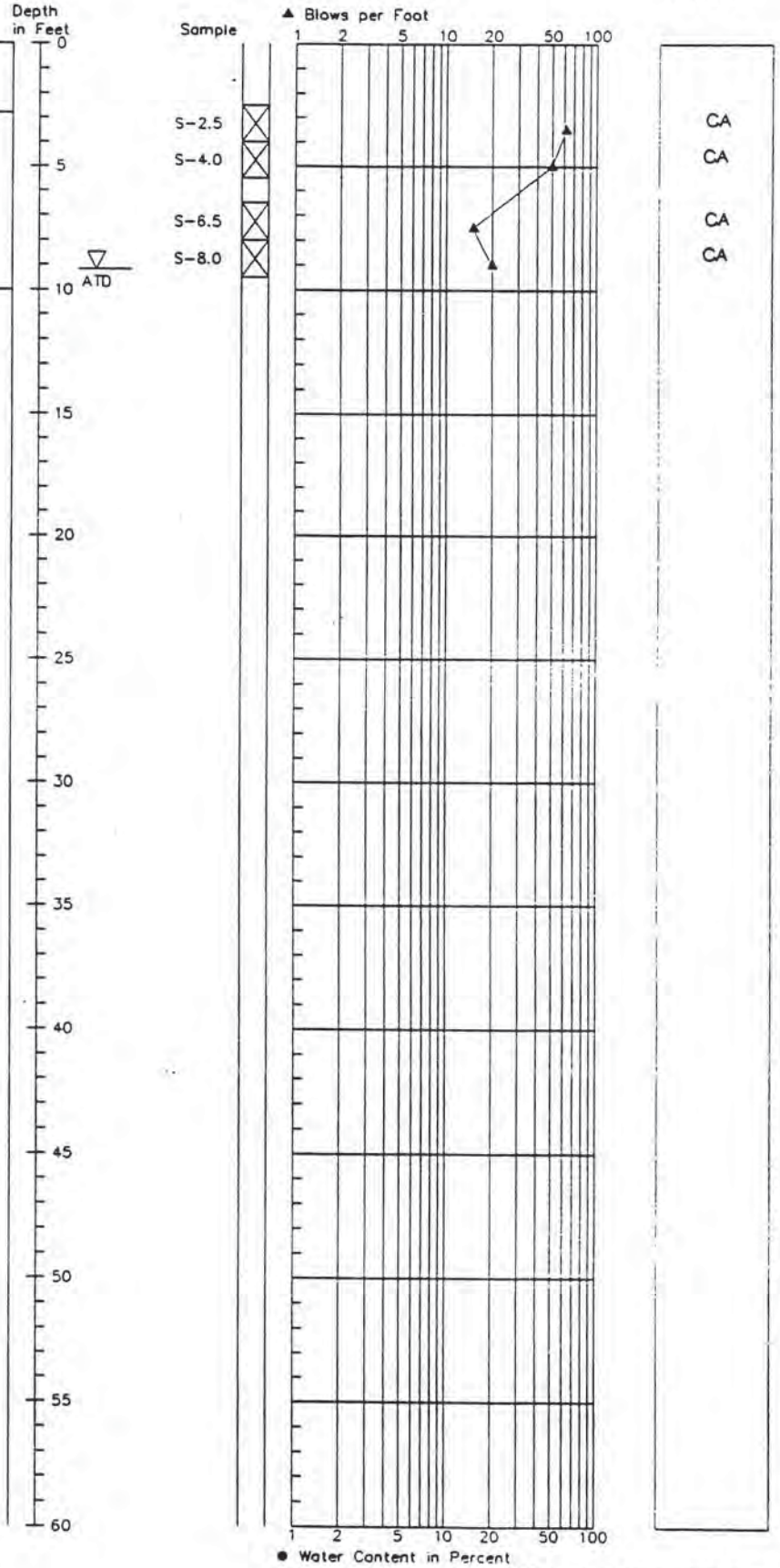
Soil Descriptions

Ground Surface Elevation in Feet 0.0

3 inches of ASPHALT over loose, moist, brown, very gravelly, fine SAND. (FILL)

Loose, moist, brown, fine to medium SAND. (FILL)

Bottom of Boring at 10.0 Feet.
Completed 1/17/89.



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. CA = Chemical Analysis

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Figure A-5 1/1

Boring Log HC-7

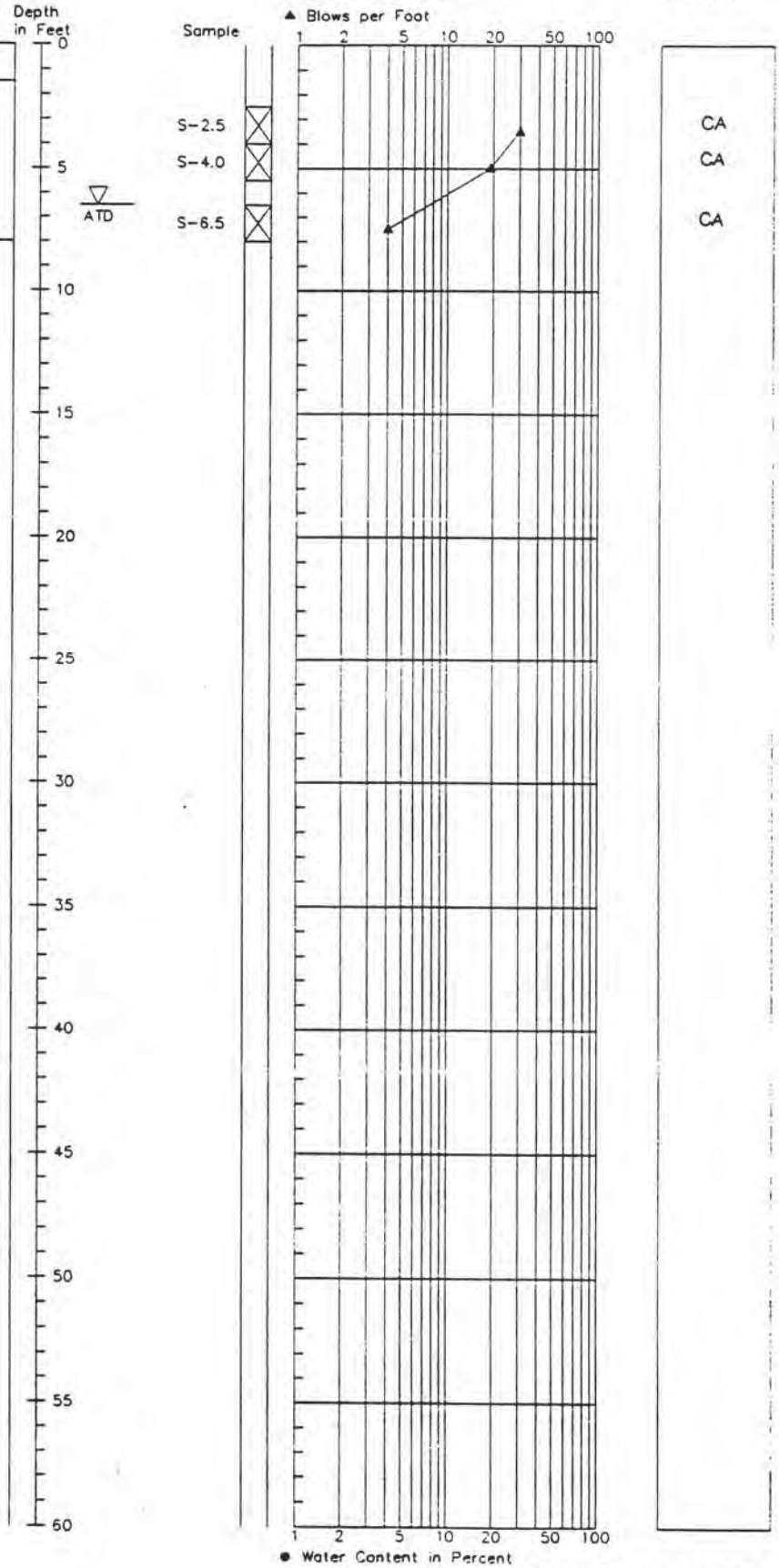
Soil Descriptions

Ground Surface Elevation in Feet 0.0

3 inches of ASPHALT over loose, damp, brown, sandy GRAVEL. (FILL)

Medium dense, moist, brown, fine to medium SAND grading to loose, wet, brown, fine to medium SAND.

Bottom of Boring at 8.0 Feet.
Completed 1/17/89.



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. CA = Chemical Analysis

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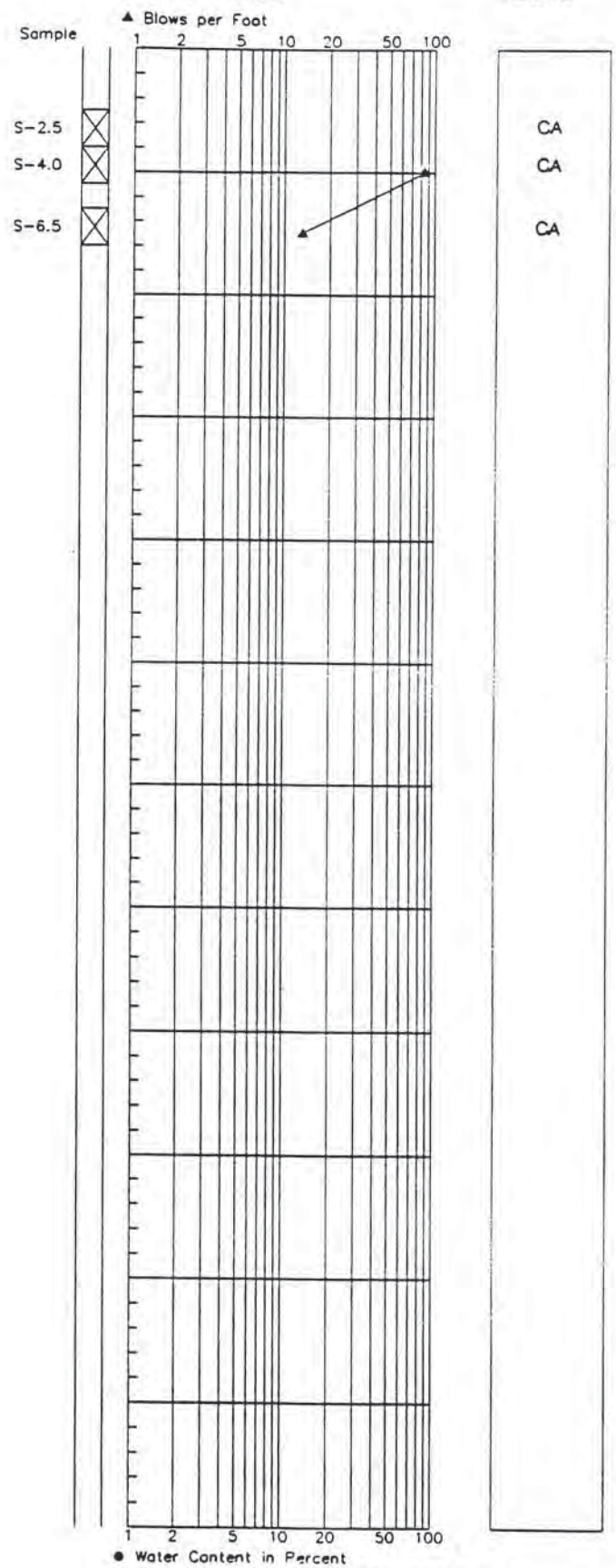
Figure A-6 1/1

Boring Log HC-8

Soil Descriptions

Ground Surface Elevation in Feet 0.0

Depth in Feet	Soil Description
0	4 inches of ASPHALT over medium dense, damp, brown, sandy GRAVEL. (FILL)
	Dense, damp, black, gravelly SAND. (FILL)
5	Dense, damp, brown, fine to medium SAND grading to loose, moist, brown, fine to medium SAND.
10	Bottom of Boring at 8.0 Feet. Completed 1/18/89.
15	
20	
25	
30	
35	
40	
45	
50	
55	
60	



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. CA = Chemical Analysis

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Figure A-7 1/1

Boring Log HC-9

Soil Descriptions

Ground Surface Elevation in Feet 0.0

Depth in Feet	Soil Description	Sample	Standard Penetration Resistance (▲ Blows per Foot)	Lab Tests
0	3 inches of ASPHALT over medium dense, damp, brown, sandy GRAVEL. (FILL)			
	Medium dense, damp, brown, gravelly SAND containing brick fragments. (FILL)	S-2.5		CA
5	Medium dense, moist, brown, fine to medium SAND.	S-4.0		CA
		*		
10	Bottom of Boring at 8.0 Feet. Completed 1/17/89.			
15				
20				
25				
30				
35				
40				
45				
50				
55				
60				

Standard Penetration Resistance: ▲ Blows per Foot — 1, 2, 5, 10, 20, 50, 100

● Water Content in Percent — 1, 2, 5, 10, 20, 50, 100

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. CA = Chemical Analysis

HARTCROWSER

J-2183-09 1/89

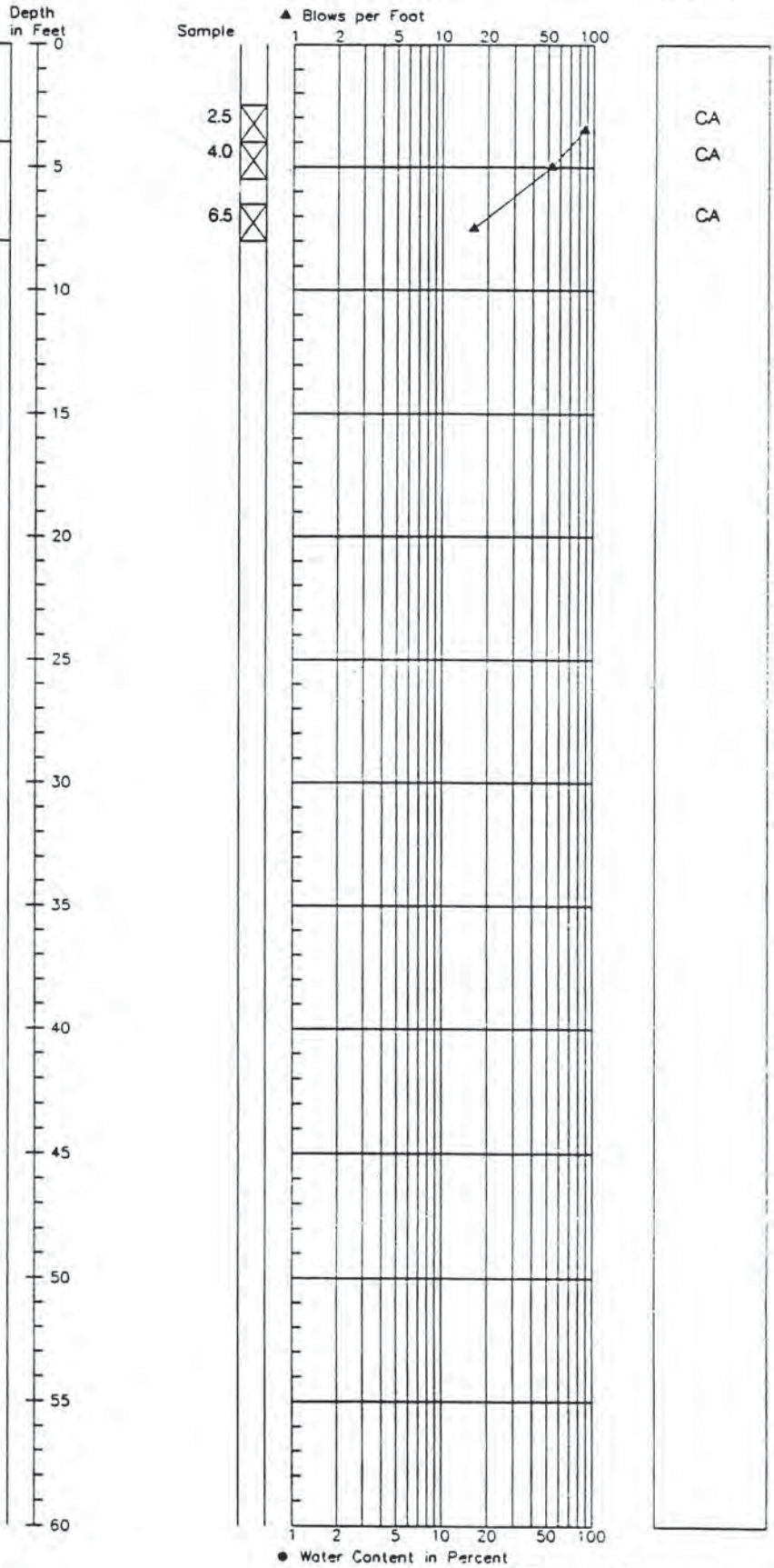
Figure A-8 1/1

Boring Log HC-10

Soil Descriptions

Ground Surface Elevation in Feet 0.0

4 inches of ASPHALT over medium dense, damp, black–brown, sandy GRAVEL. (FILL)
Medium dense, moist, brown, fine to medium SAND grading to loose, moist, brown, fine to medium SAND.
Bottom of Boring at 8.0 Feet. Completed 1/18/89.



1. Refer to Figure A–1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. CA = Chemical Analysis

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Figure A-9 1/1

Boring Log HC-11

Soil Descriptions

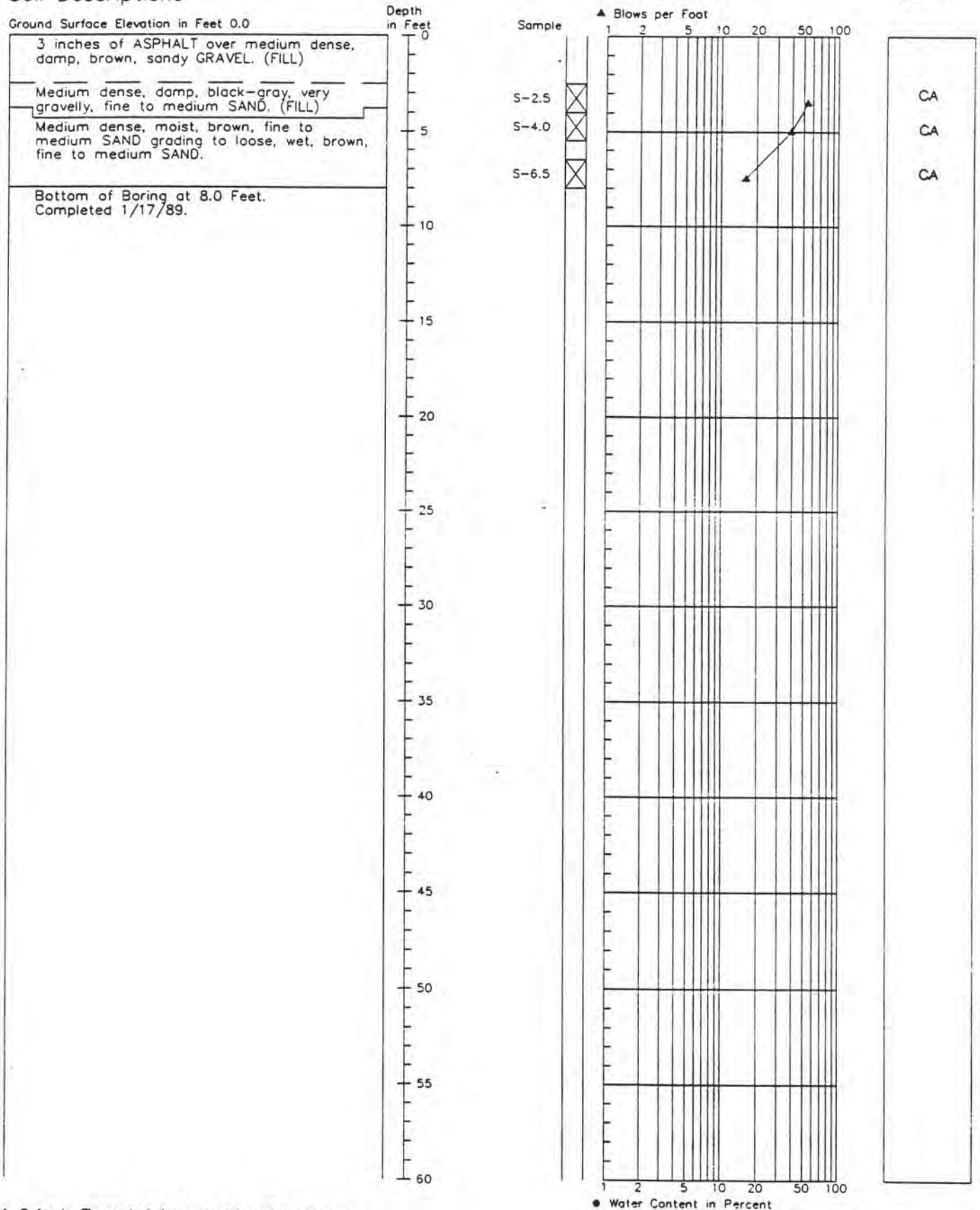
Ground Surface Elevation in Feet 0.0

3 inches of ASPHALT over medium dense, damp, brown, sandy GRAVEL. (FILL)

Medium dense, damp, black-gray, very gravelly, fine to medium SAND. (FILL)

Medium dense, moist, brown, fine to medium SAND grading to loose, wet, brown, fine to medium SAND.

Bottom of Boring at 8.0 Feet.
Completed 1/17/89.



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. CA = Chemical Analysis

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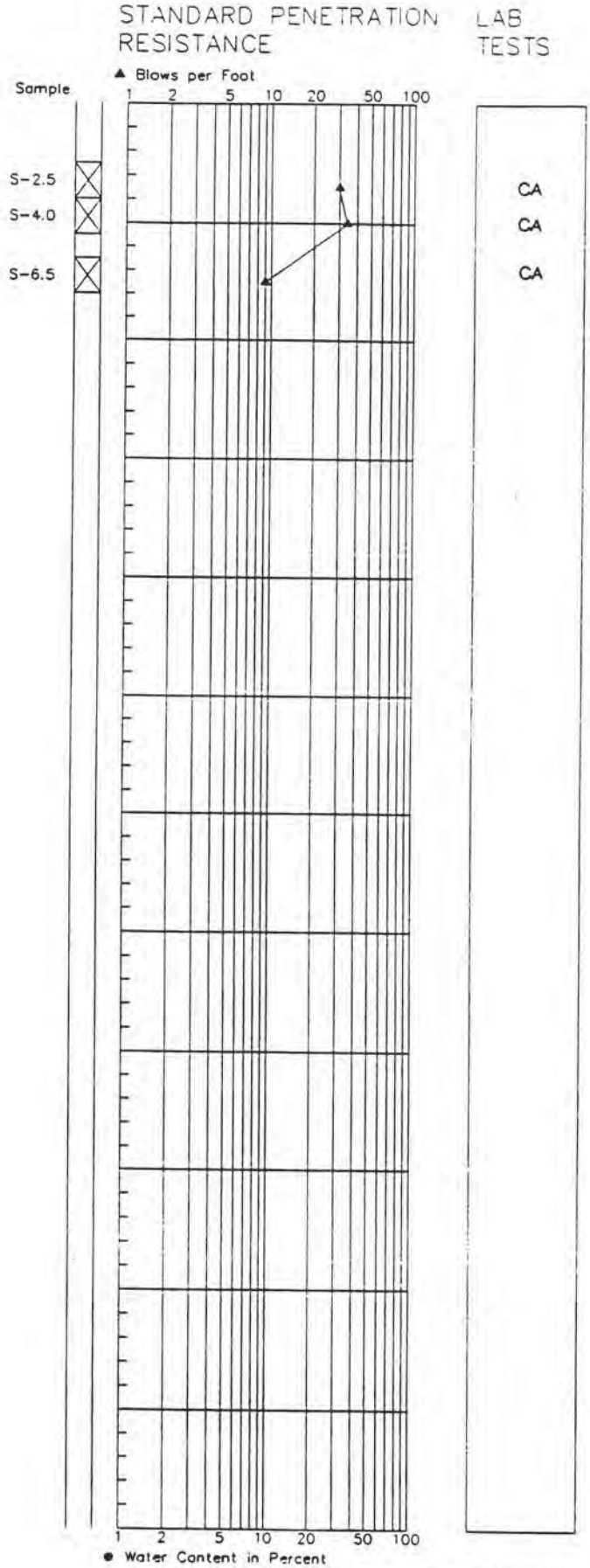
Figure A-10 1/1

Boring Log HC-12

Soil Descriptions

Ground Surface Elevation in Feet 0.0

Depth in Feet	Soil Description
0	3 inches of ASPHALT over medium dense, damp, brown, sandy GRAVEL. (FILL)
	Very stiff, moist, black–gray, slightly gravelly, sandy SILT with wood fragments.
5	Medium dense, moist, brown, fine to medium SAND grading to loose, moist, brown, fine to medium SAND.
	Bottom of Boring at 8.0 Feet. Completed 1/17/89.
10	
15	
20	
25	
30	
35	
40	
45	
50	
55	
60	



1. Refer to Figure A–1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

4 CA = Chemical Analysis

HARTCROWSER

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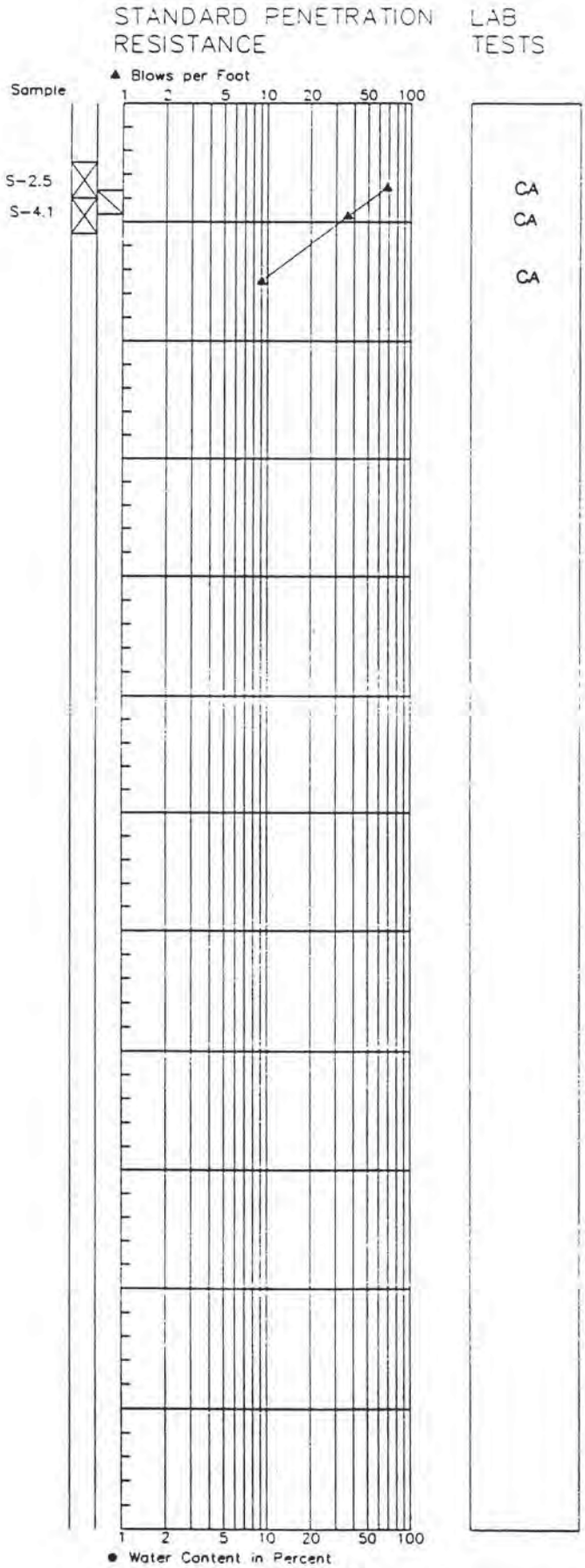
Figure A-11 1/1

Boring Log HC-13

Soil Descriptions

Ground Surface Elevation in Feet 0.0

Depth in Feet	Soil Description
0	4 inches of ASPHALT over medium dense, damp, brown, sandy GRAVEL. (FILL)
	Medium dense, moist, brown, slightly silty, fine to medium SAND.
	Wood fragments interbedded.
5	Medium dense, moist, brown, slightly gravelly, silty SAND grading to loose, moist, brown, fine to medium SAND.
	Bottom of Boring at 8.0 Feet. Completed 1/17/89.
10	
15	
20	
25	
30	
35	
40	
45	
50	
55	
60	



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.

4 CA = Chemical Analysis

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Figure A-12 1/1

Boring Log HC-14A

Soil Descriptions

Ground Surface Elevation in Feet 0.0

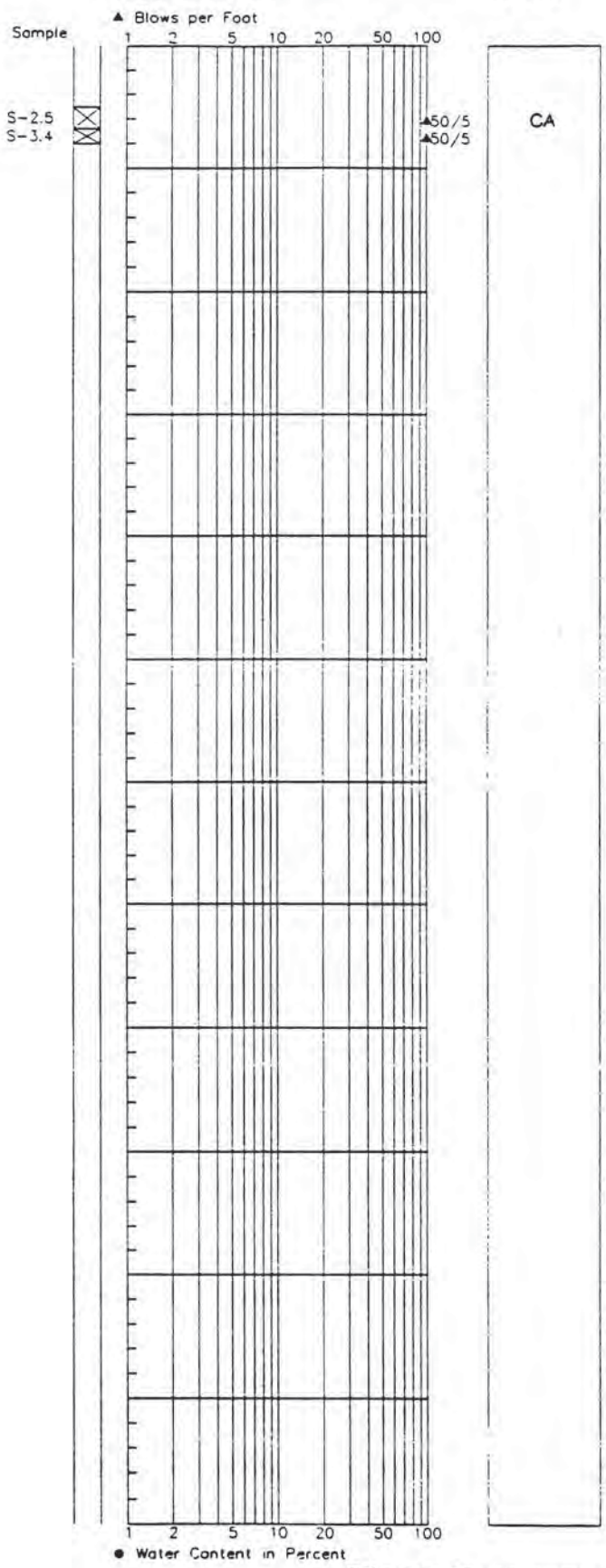
Depth in Feet

3 inches of ASPHALT over medium dense, damp, brown, sandy GRAVEL. (FILL)

Very dense, moist, brown, slightly gravelly, fine to medium SAND.

Very dense, moist, brown, slightly silty SAND with wood fragments.

Bottom of Boring at 6.0 Feet.
Completed 2/13/89.



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. CA = Chemical Analysis

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Figure A-13 1/1

Boring Log HC-15A

Soil Descriptions

Ground Surface Elevation in Feet 0.0

3 inches of ASPHALT over medium dense, damp, brown, sandy GRAVEL. (FILL)

Very dense, damp, brown, slightly gravelly, fine to medium SAND.

Very dense, damp, gray–brown, slightly gravelly, fine to medium SAND grading to dense, damp, black, silty, fine to medium SAND.

Bottom of Boring at 5.0 Feet.
Completed 2/13/89.

Depth in Feet: 0, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60

STANDARD PENETRATION RESISTANCE

▲ Blows per Foot

1 2 5 10 20 50 100

Sample

S–X
S–X
S–1

▲50/6
▲50/6

LAB TESTS

CA

1 2 5 10 20 50 100

● Water Content in Percent

1. Refer to Figure A–1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. CA = Chemical Analysis

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Figure A-14 1/1

Boring Log HC-16

Soil Descriptions

Ground Surface Elevation in Feet 0.0

Depth in Feet

3 inches of ASPHALT over medium dense, damp, brown, sandy GRAVEL. (FILL)

Very dense, damp, brown, slightly silty, slightly gravelly, fine to medium SAND.

Very dense, damp, black, slighlty gravelly, silty SAND with wood fragments.

Very dense, damp, brown, slightly gravelly, silty SAND.

Bottom of Boring at 5.0 Feet.
Completed 2/13/89.

0 5 10 15 20 25 30 35 40 45 50 55 60

STANDARD PENETRATION RESISTANCE

LAB TESTS

Sample

▲ Blows per Foot

1 2 5 10 20 50 100

S-1

▲91/8
▲50/2
▲50/4

CA

1 2 5 10 20 50 100

● Water Content in Percent

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4 CA = Chemical Analysis

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Figure A-15 1/1

Boring Log HC-17

Soil Descriptions

Ground Surface Elevation in Feet 0.0

Depth in Feet

3 inches of ASPHALT over medium dense, damp, brown, sandy GRAVEL. (FILL)

Very dense, damp, brown, slightly silty, fine to medium SAND.

Very dense, damp, black, slightly silty SAND with rock fragments.

Bottom of Boring at 4.3 Feet.
Completed 2/13/89.

STANDARD PENETRATION RESISTANCE

LAB TESTS

Sample

▲ Blows per Foot

1 2 5 10 20 50 100

S-1
S-2

50/4

CA

1 2 5 10 20 50 100

● Water Content in Percent

1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. CA = Chemical Analysis

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Figure A-16 1/1

Boring Log HC-18

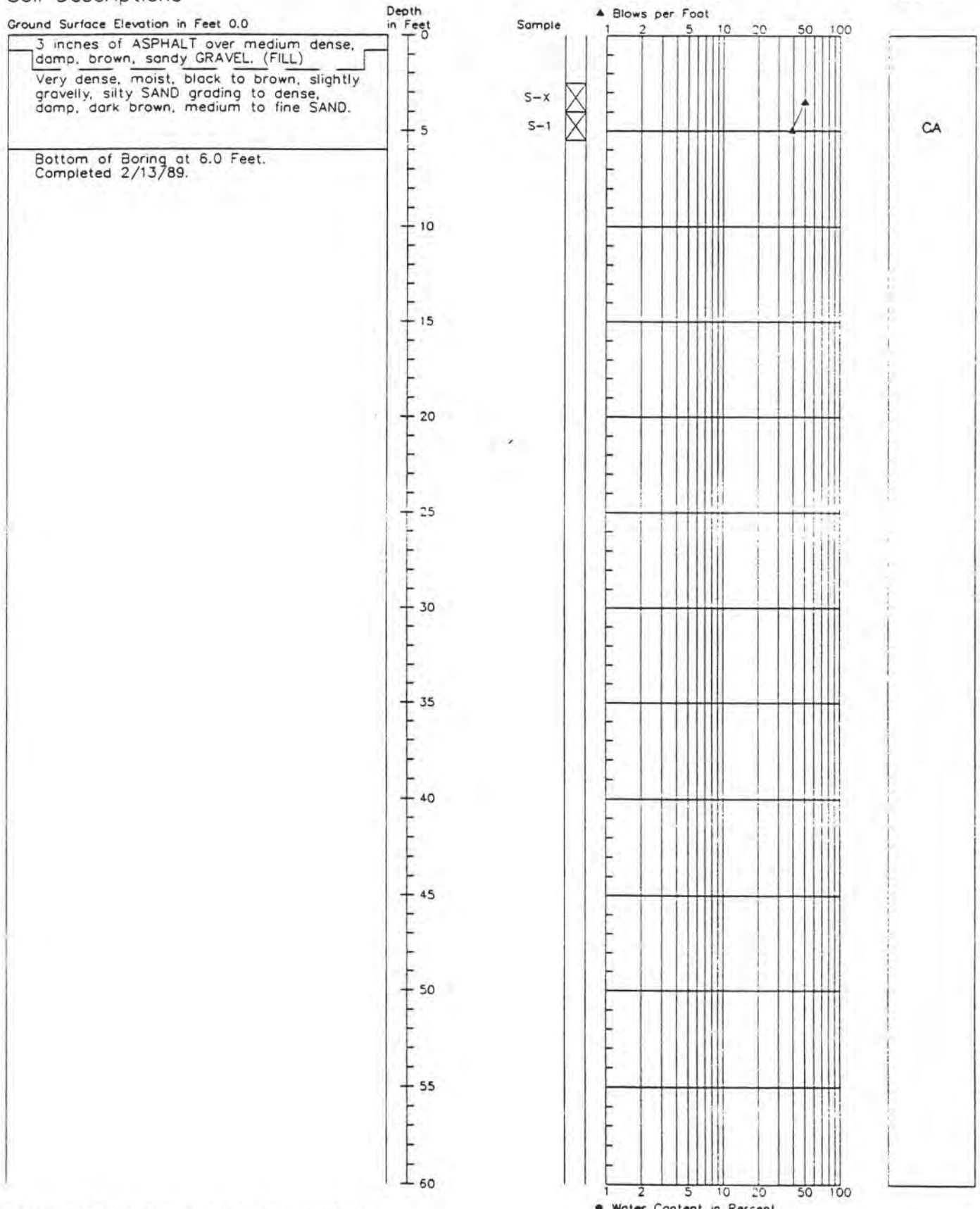
Soil Descriptions

Ground Surface Elevation in Feet 0.0

3 inches of ASPHALT over medium dense, damp, brown, sandy GRAVEL. (FILL)

Very dense, moist, black to brown, slightly gravelly, silty SAND grading to dense, damp, dark brown, medium to fine SAND.

Bottom of Boring at 6.0 Feet.
Completed 2/13/89.



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Groundwater level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. CA = Chemical Analysis

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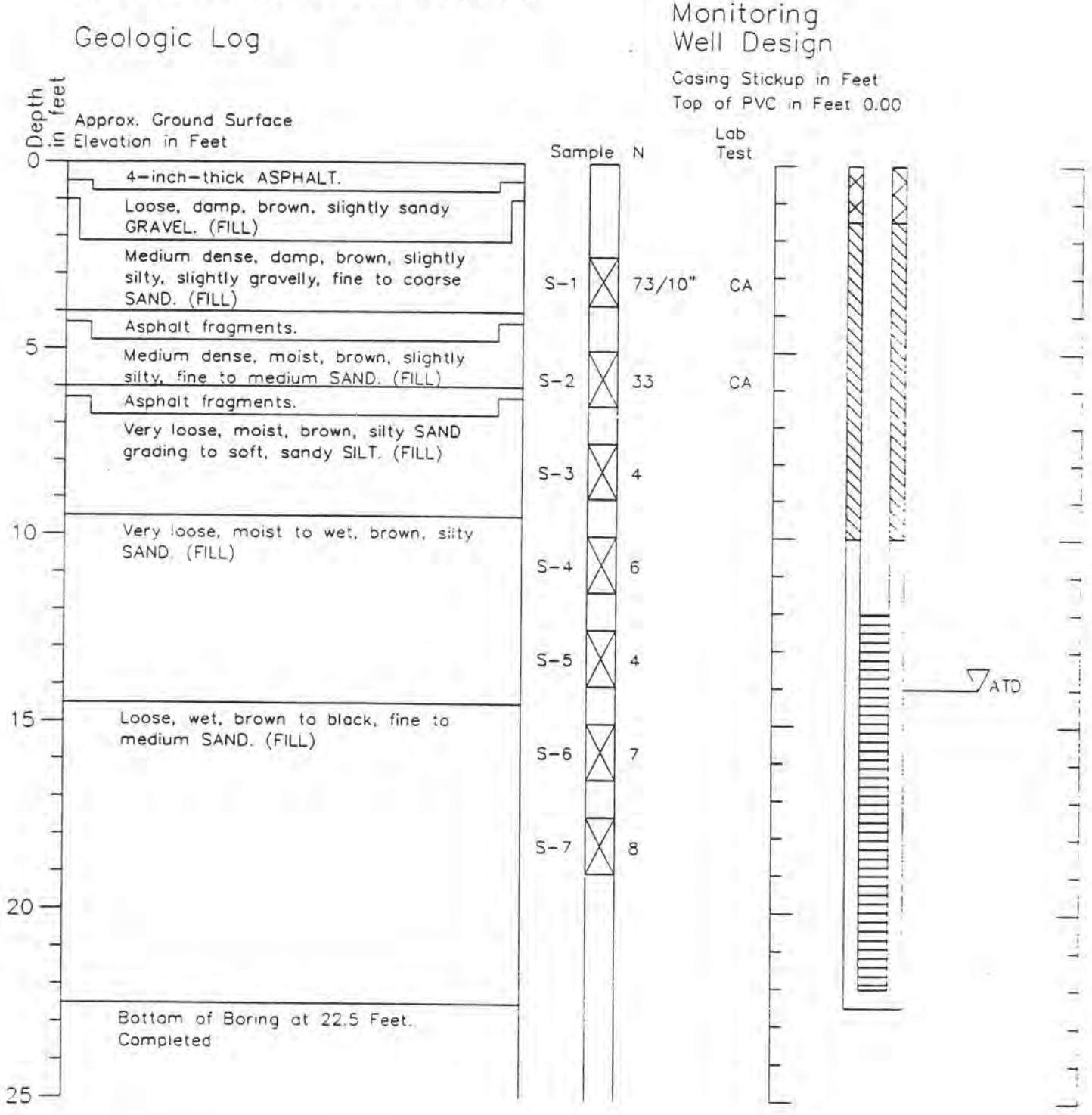
Figure A-17 1/1

Boring Log and Construction Data for Monitoring Well HC-19



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. CA = Chemical Analysis.

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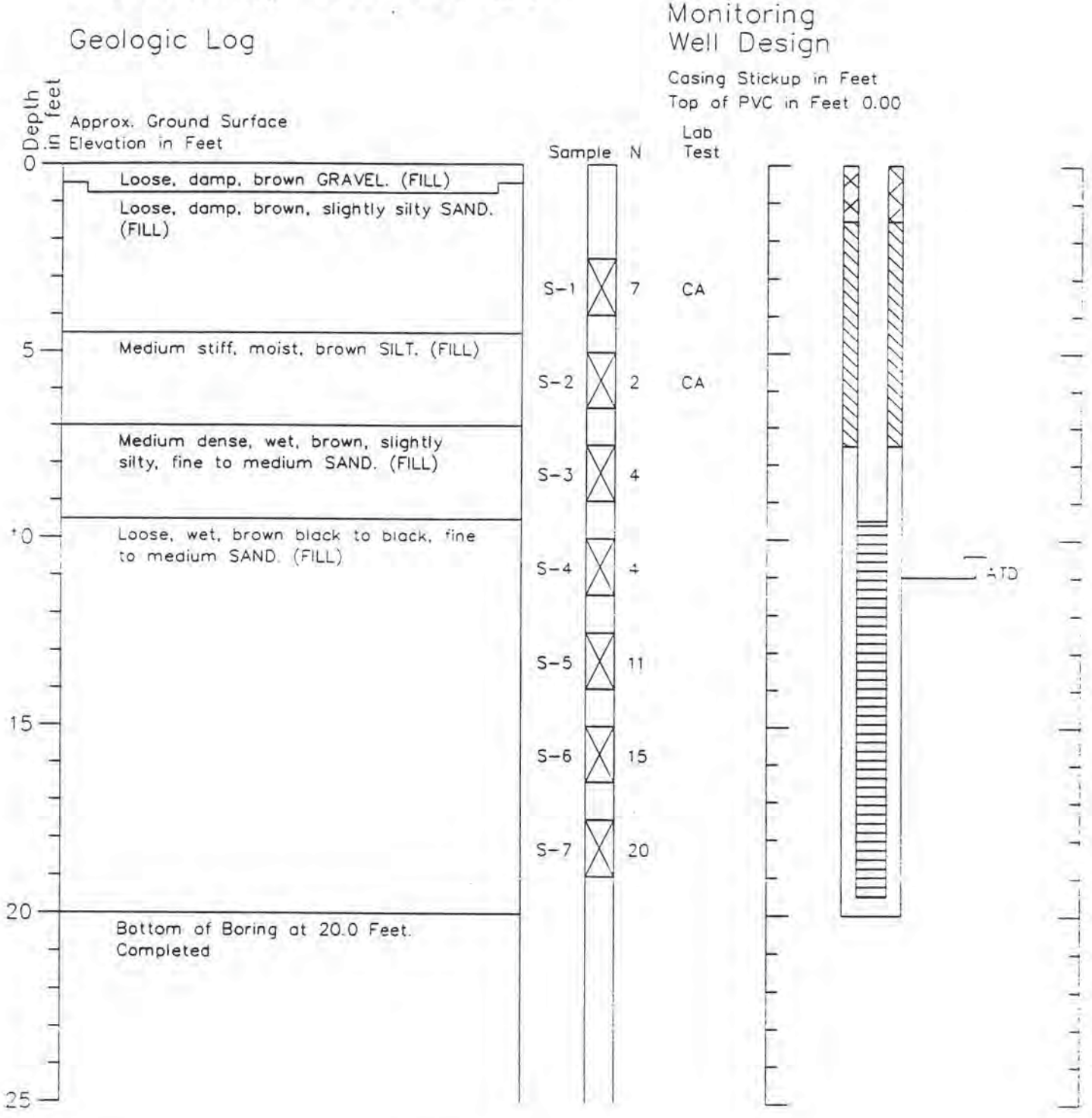
Figure A-18

Boring Log and Construction Data for Monitoring Well HC-20



1. Refer to Figure A-1 for explanation of descriptions and symbols.
2. Soil descriptions and stratum lines are interpretive and actual changes may be gradual.
3. Ground water level, if indicated, is at time of drilling (ATD) or for date specified. Level may vary with time.
4. CA = Chemical Analysis.

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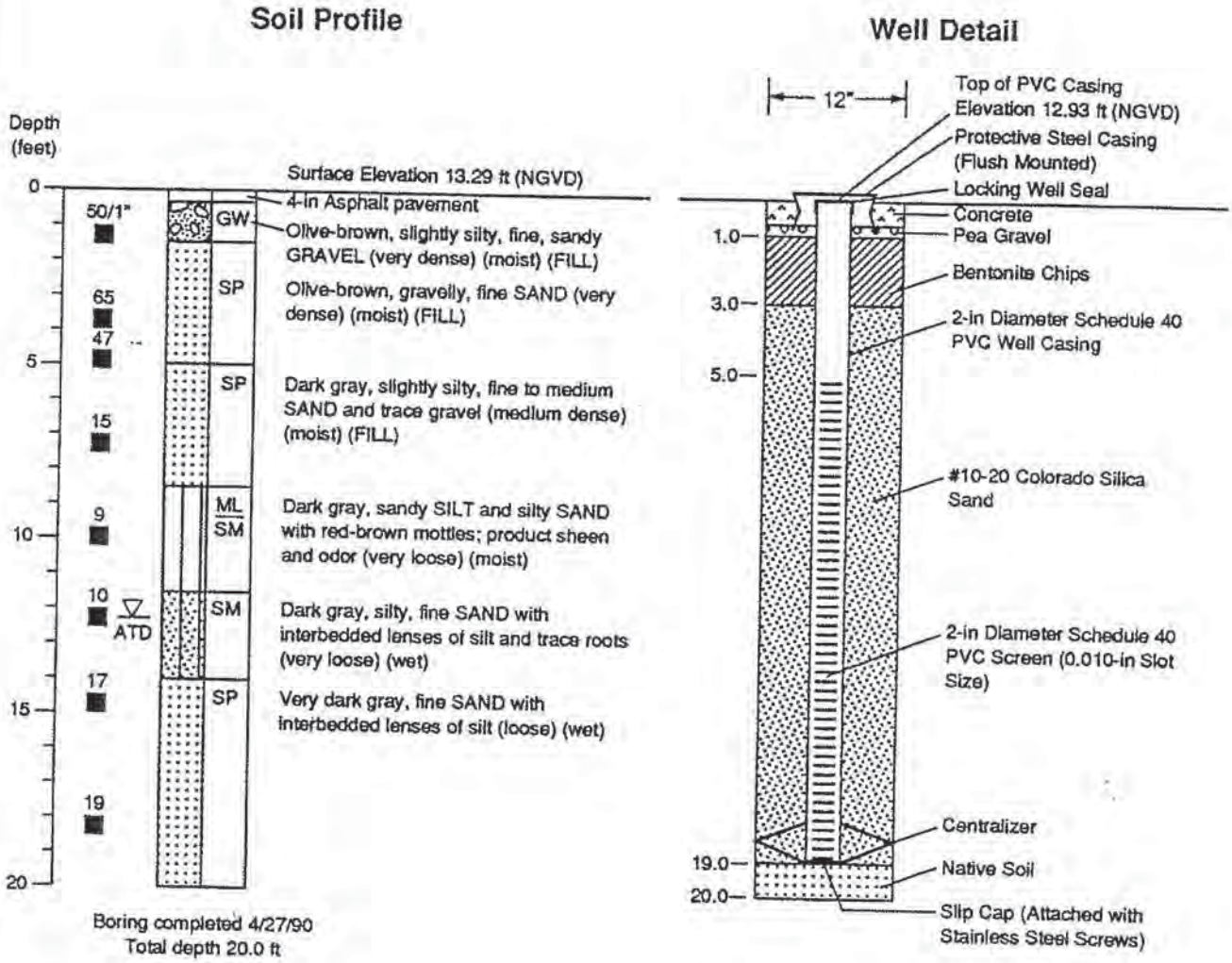
Figure A-19

Unified Soil Classification System

MAJOR DIVISIONS			GRAPH SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS More than 50% of material is larger than #200 sieve size	GRAVEL AND GRAVELLY SOILS More than 50% of coarse fraction retained on #4 sieve	CLEAN GRAVELS (Little or no fines)		GW	Well-graded gravels, gravel-sand mixtures, little or no fines
				GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
		GRAVELS WITH FINES (Appreciable amount of fines)		GM	Silty gravels, gravel-sand-silt mixtures
				GC	Clayey gravels, gravel-sand-clay mixtures
	SAND AND SANDY SOILS More than 50% of coarse fraction passing #4 sieve	CLEAN SAND (Little or no fines)		SW	Well-graded sands, gravelly sands, little or no fines
				SP	Poorly-graded sands, gravelly sands, little or no fines
		SANDS WITH FINES (Appreciable amount of fines)		SM	Silty sands, sand-silt mixtures
				SC	Clayey sands, sand-clay mixtures
FINE GRAINED SOILS More than 50% of material is smaller than #200 sieve size	SILTS AND CLAYS Liquid Limit less than 50			ML	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity
				CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
				OL	Organic silt and organic silty clays of low plasticity
	SILTS AND CLAYS Liquid Limit greater than 50			MH	Inorganic silts, micaceous or diatomaceous fine sand or silty soils
				CH	Inorganic clays of high plasticity, fat clays
				OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS				PT	Peat, humus, swamp soils with high organic contents

Note: Dual symbols are used to indicate borderline soil classifications

Well DMW2



KEY

Blows required to drive 2.42-inch I.D. split barrel sampler 1 foot with a hammer weight of 140 pounds and a stroke of 30 inches

Length sampler was driven prior to refusal (if applicable)

102/7"

■ Indicates depth of relatively undisturbed sample

□ Indicates sample attempt with no recovery

▽ ATD Approximate water surface elevation at time of drilling

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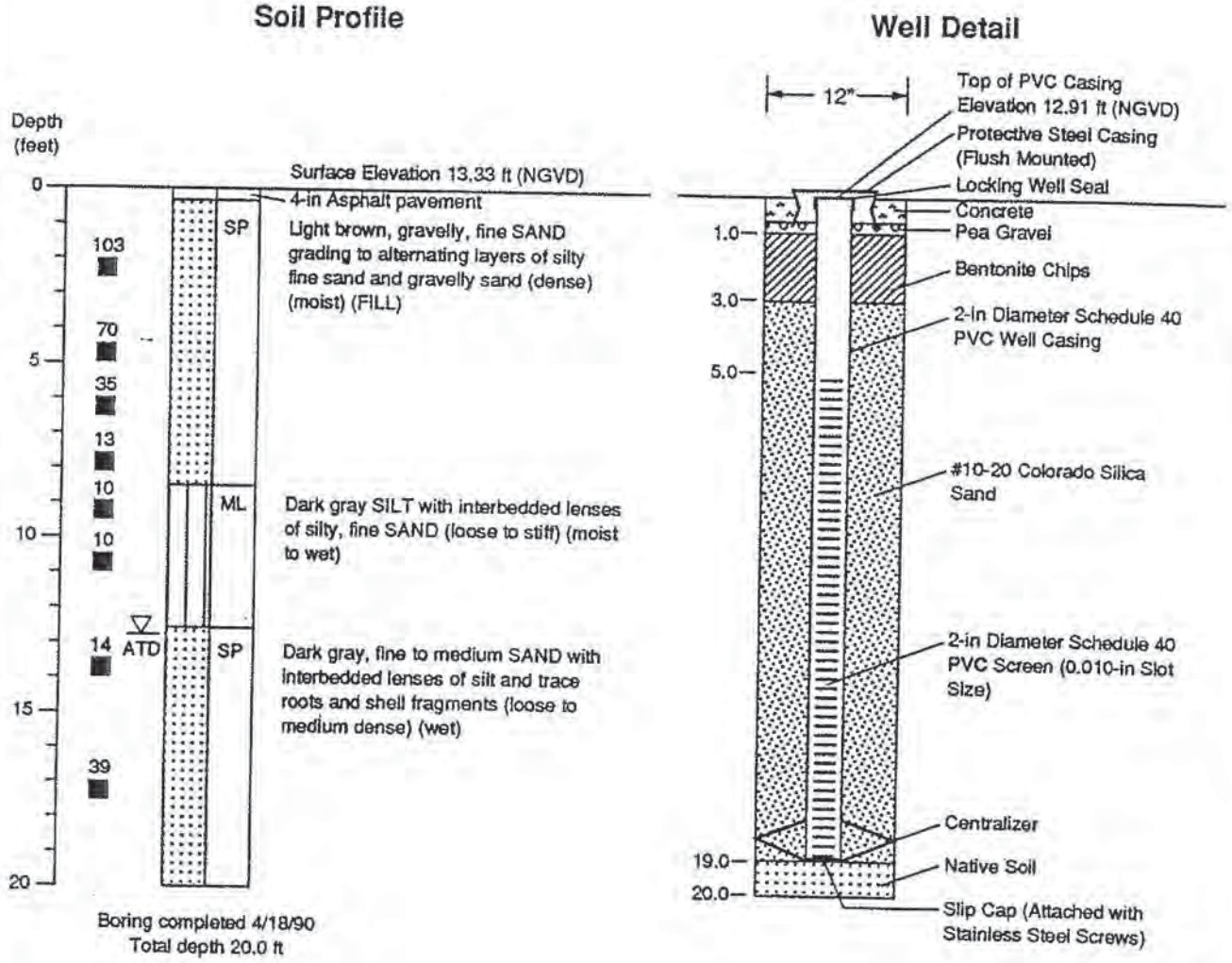
LANDAU ASSOCIATES, INC.	Soil Profile and Well Detail for Well DMW2

Figure B-24

Well DMW3



KEY

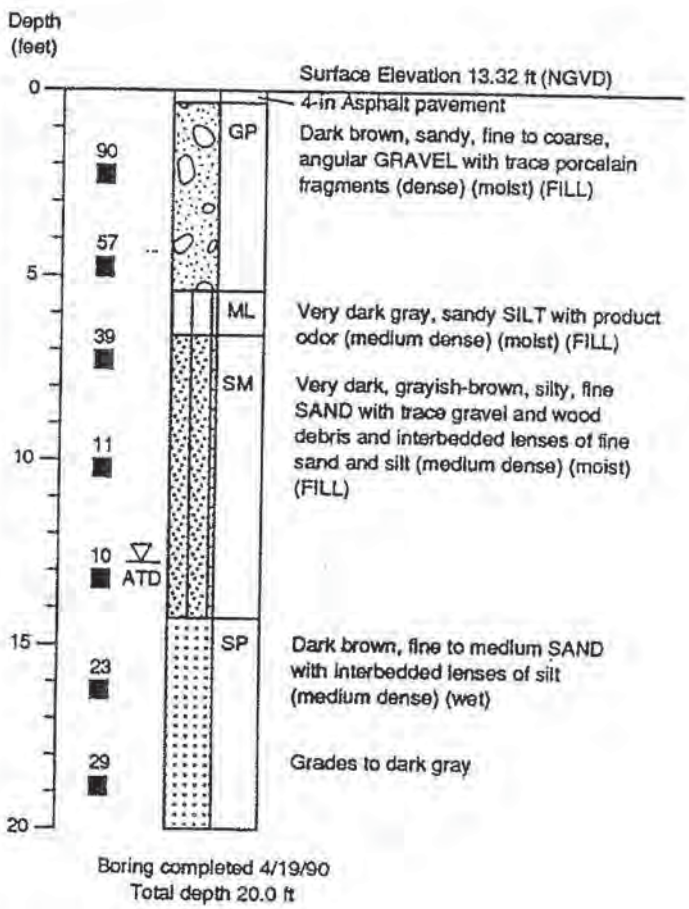
- Blows required to drive 2.42-inch I.D. split barrel sampler 1 foot with a hammer weight of 140 pounds and a stroke of 30 inches
- Length sampler was driven prior to refusal (if applicable)
- 102/7"
- ■ Indicates depth of relatively undisturbed sample
- □ Indicates sample attempt with no recovery
- ▽ ATD Approximate water surface elevation at time of drilling

LANDAU ASSOCIATES, INC.	Soil Profile and Well Detail for Well DMW3

Figure B-25

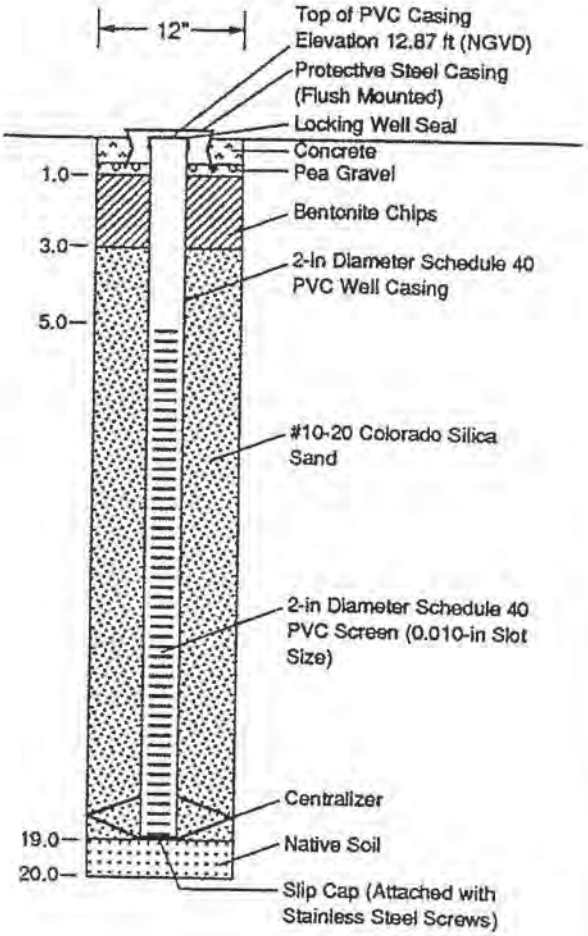
Well DMW6

Soil Profile

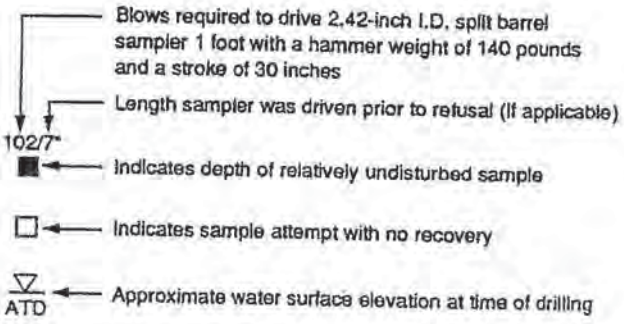


Boring completed 4/19/90
Total depth 20.0 ft

Well Detail

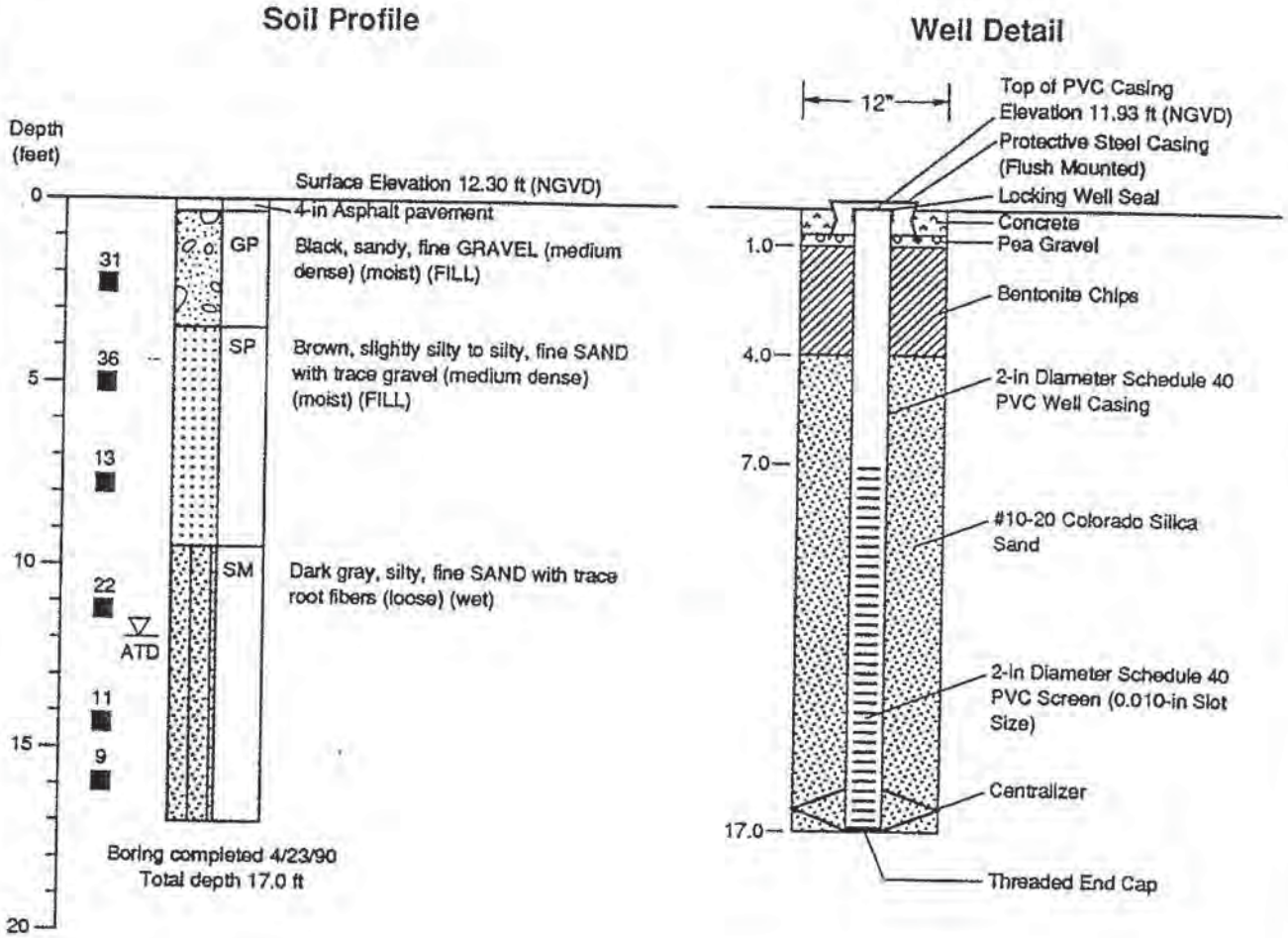


KEY



LANDAU ASSOCIATES, INC.	Soil Profile and Well Detail for Well DMW6

Well EMW1

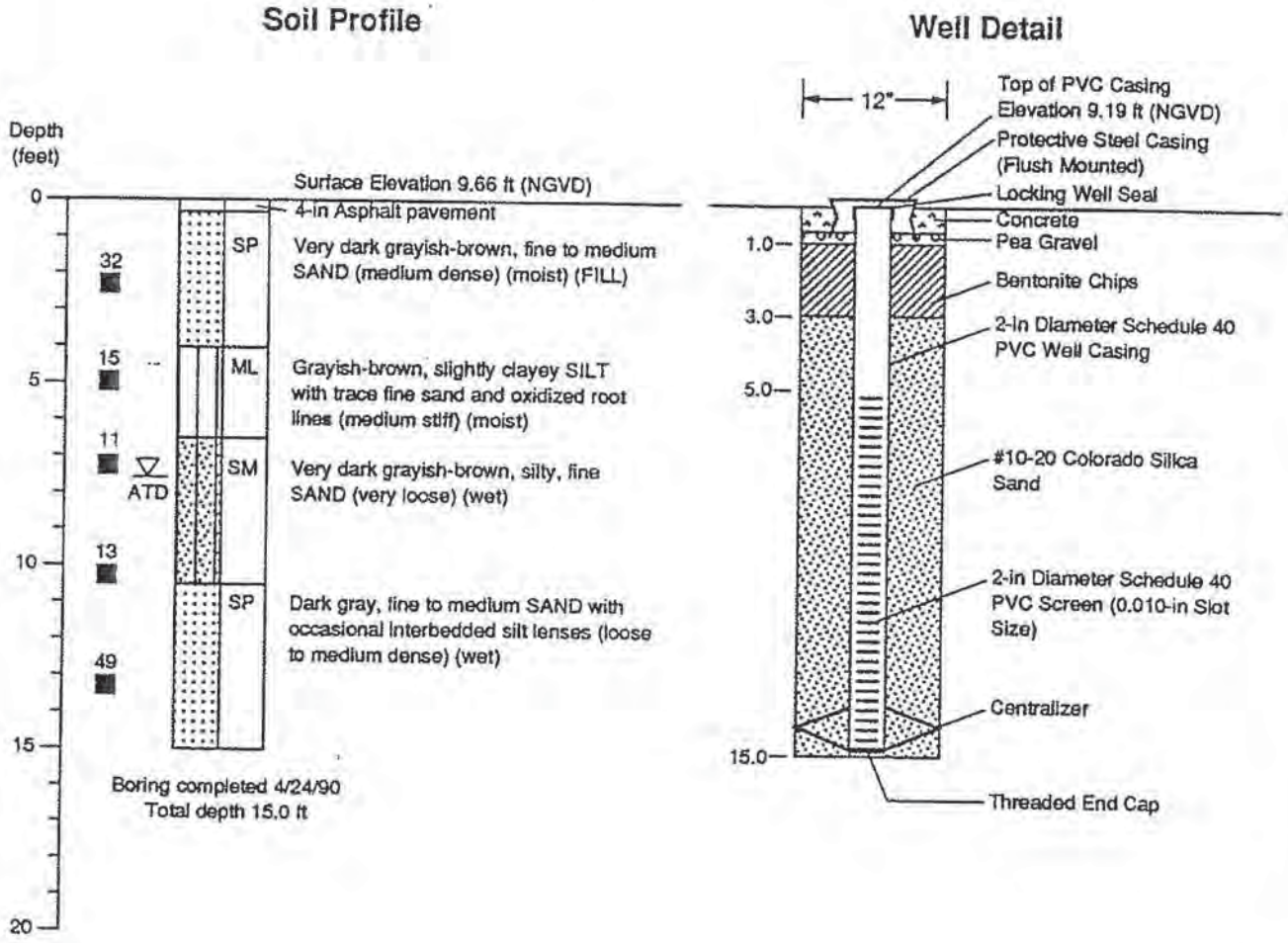


KEY

- Blows required to drive 2.42-inch I.D. split barrel sampler 1 foot with a hammer weight of 140 pounds and a stroke of 30 inches
- Length sampler was driven prior to refusal (if applicable)
- 102/7"
- ■ Indicates depth of relatively undisturbed sample
- □ Indicates sample attempt with no recovery
- ▽ ATD Approximate water surface elevation at time of drilling

LANDAU ASSOCIATES, INC.	Soil Profile and Well Detail for Well EMW1

Well EMW2



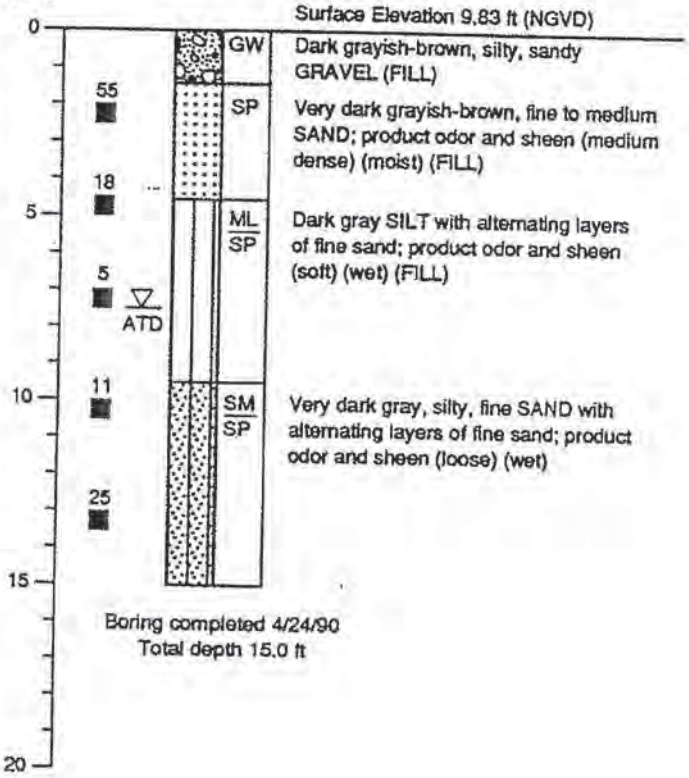
KEY

- Blows required to drive 2.42-inch I.D. split barrel sampler 1 foot with a hammer weight of 140 pounds and a stroke of 30 inches
- Length sampler was driven prior to refusal (if applicable)
- 102/7"
- Indicates depth of relatively undisturbed sample
- Indicates sample attempt with no recovery
- ATD — Approximate water surface elevation at time of drilling

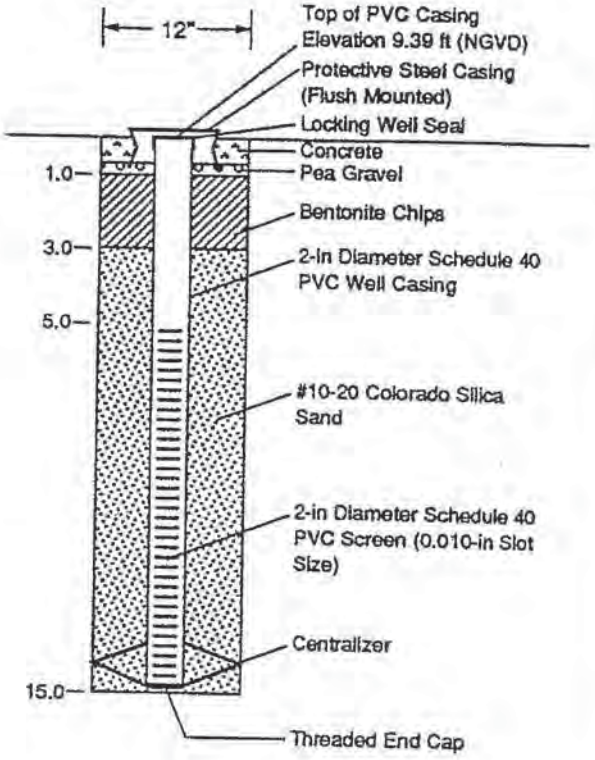
LANDAU ASSOCIATES, INC.	Soil Profile and Well Detail for Well EMW2

Well EMW3

Soil Profile



Well Detail



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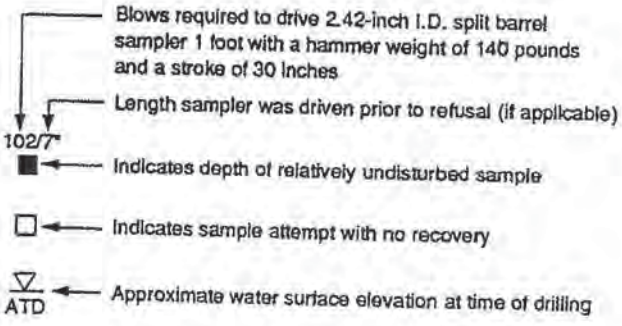
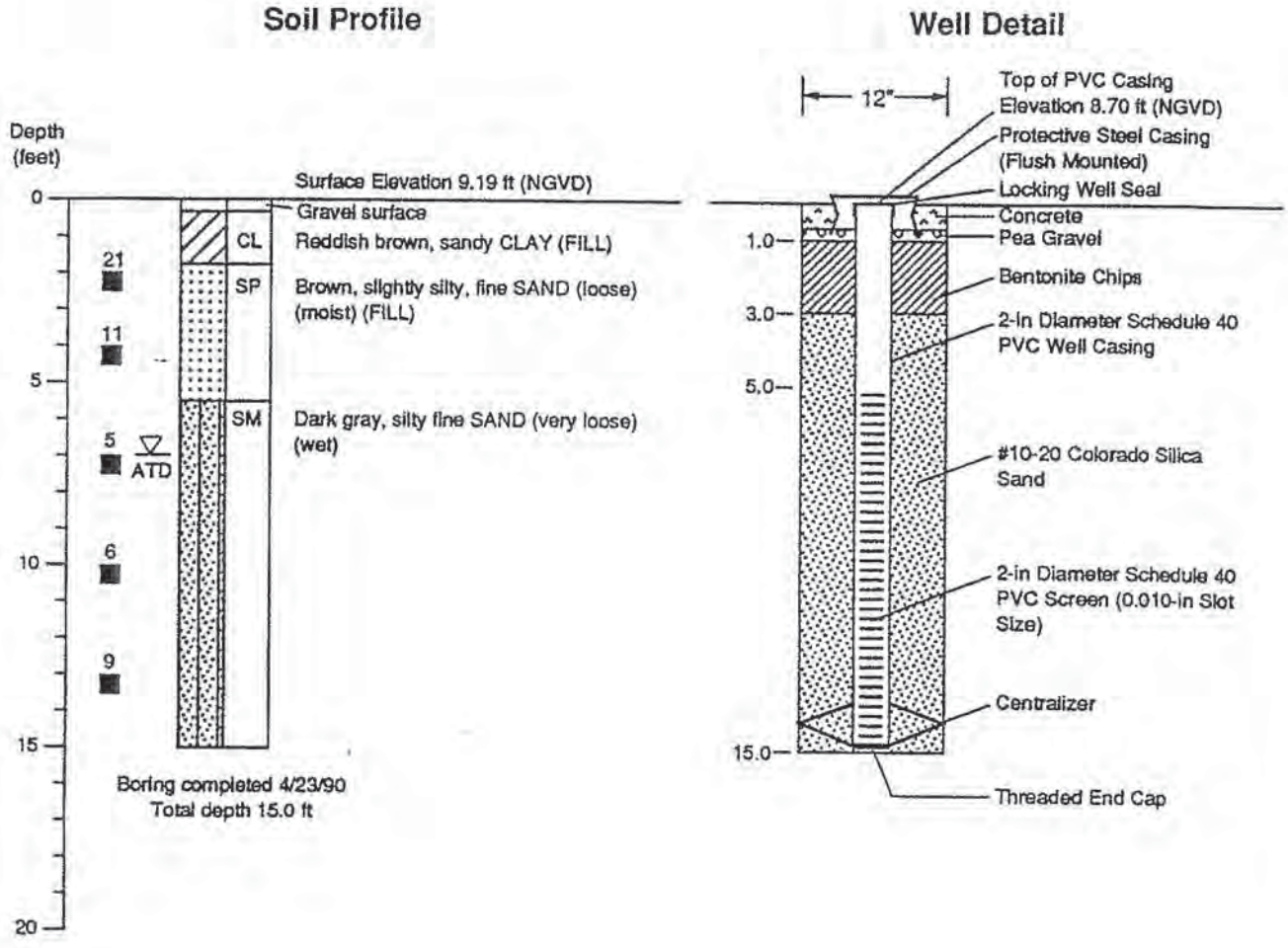


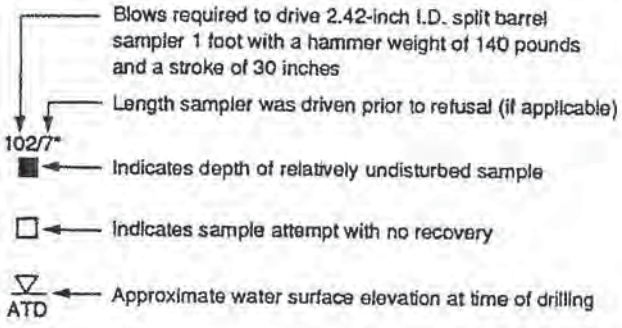
LANDAU ASSOCIATES, INC.	Soil Profile and Well Detail for Well EMW3

Figure B-29

Well FMW1



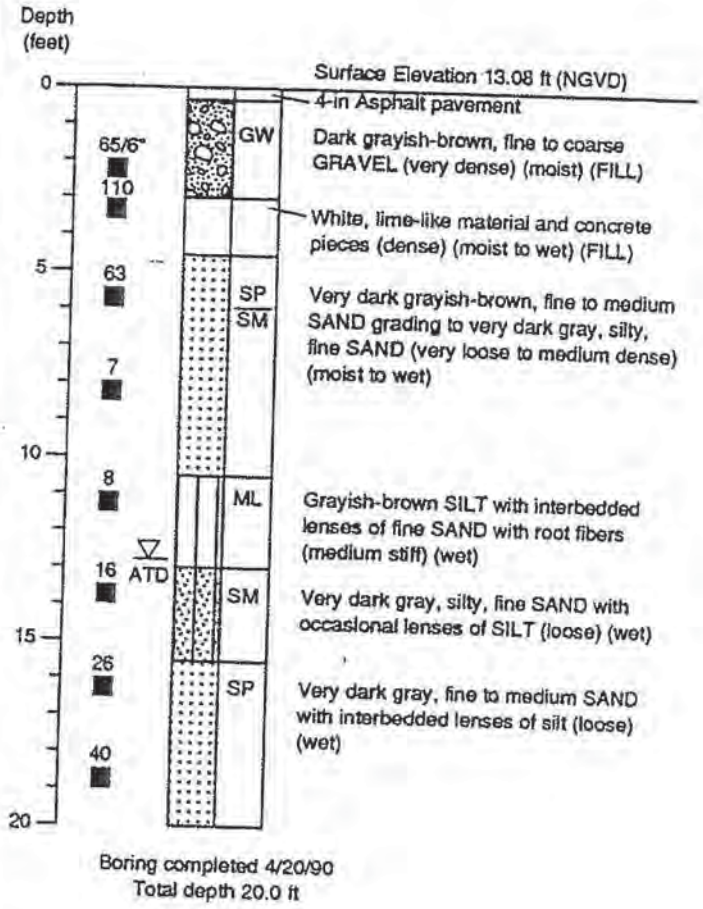
KEY



LANDAU ASSOCIATES, INC.	Soil Profile and Well Detail for Well FMW1

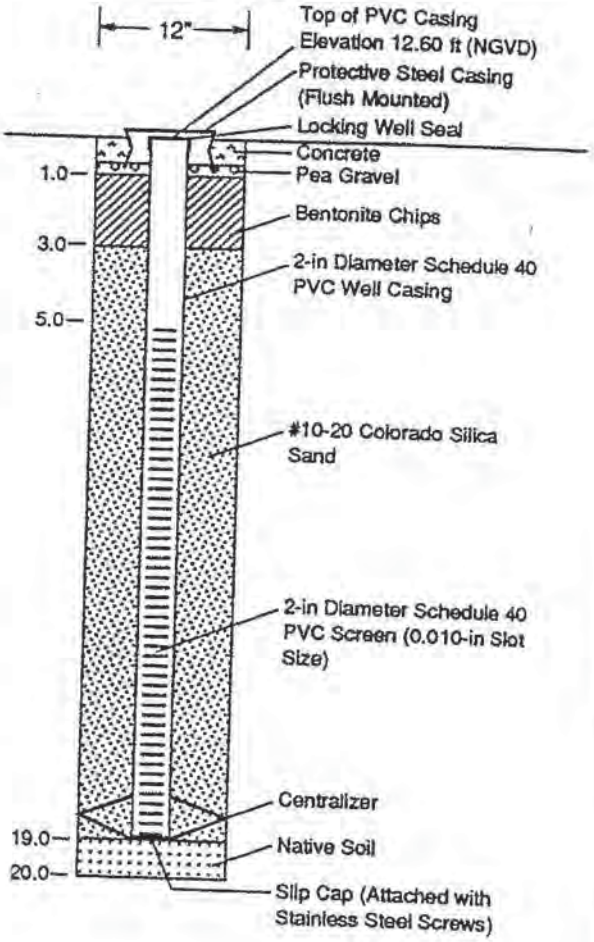
Well FMW2

Soil Profile



Boring completed 4/20/90
Total depth 20.0 ft

Well Detail



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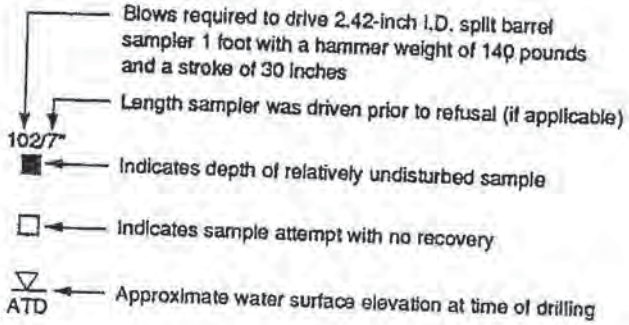


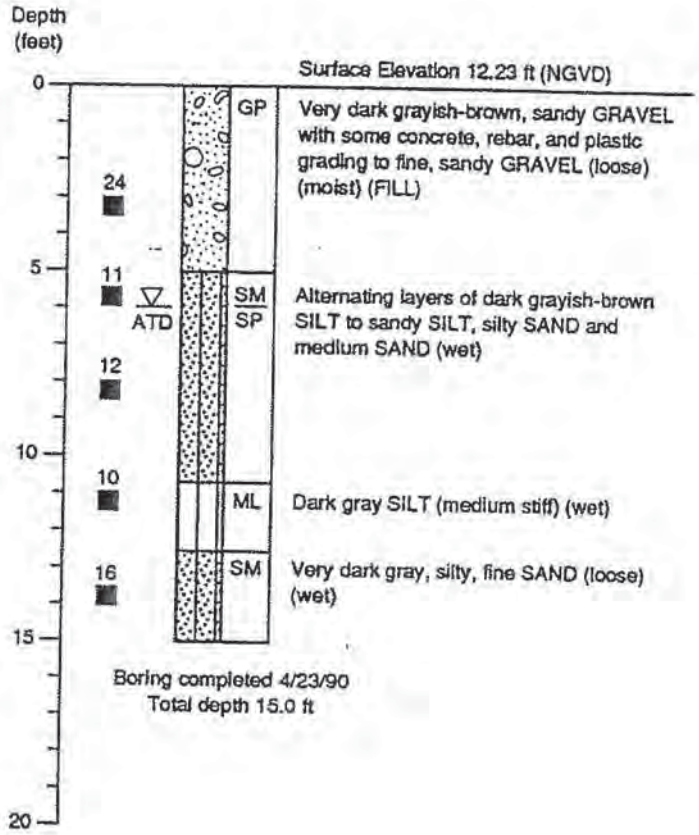
LANDAU ASSOCIATES, INC.	Soil Profile and Well Detail for Well FMW2

25-52.10 Boeing/First Interstate/Environmental Site Assessment/Final Report 6/8/90

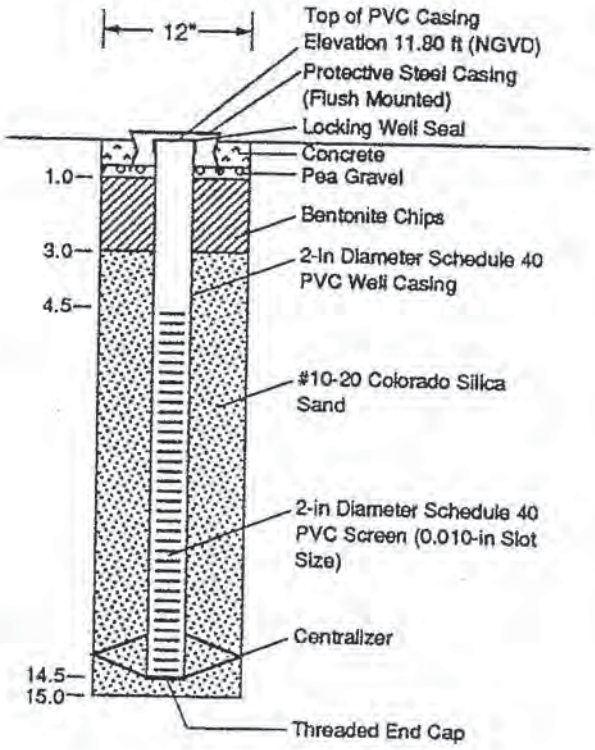
Figure B-31

Well FMW3

Soil Profile



Well Detail



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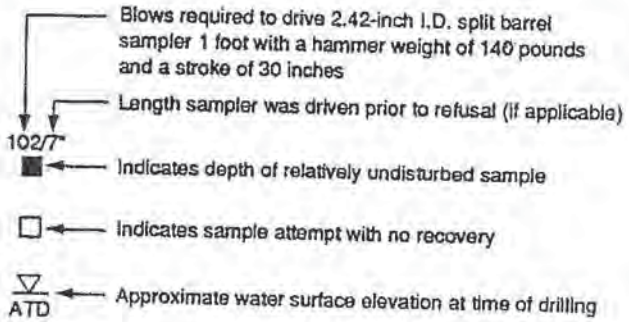

LANDAU ASSOCIATES, INC.	Soil Profile and Well Detail for Well FMW3

SLR
SLR International Corp
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Bothell, Washington 98021
Telephone: 425.402.8800
Fax: 425.402.8488

WELL NUMBER CMW-1

CLIENT Crowley Marine Services
PROJECT NAME
PROJECT NUMBER 001.0205.00011
PROJECT LOCATION Seattle, WA
DATE STARTED 6/12/08 COMPLETED 6/12/08
GROUND ELEVATION HOLE SIZE 8-inch diameter
DRILLING DRILLING CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
DRILLING DRILLING METHOD Hollow Stem Auger
▽ AT TIME OF DRILLING 12.0 ft
LOGGED BY K Saganski CHECKED BY
AT END OF ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0					GP		**SAND and GRAVEL**, brown, fine to coarse grained, little silt, dense, moist.		Cement; Hydrated bentonite chips; Blank 2-inch schedule 40 PVC riser
							3.1		
		MC		60	SP		**SAND**, brown, fine to medium grained, trace silt, loose, moist to wet.	0	
5		MC	CMW1-5	15				0	
							6.0		
		MC		10	SM		**SILTY SAND**, dark brown, fine to coarse sand, some medium to coarse gravel, loose, moist to wet.	0	2/12 Lapis Lustre sand pack
10		MC		6			10.4	0	2-inch schedule 40 PVC, 0.010-inch slotted screen
		MC		3	SP		**SAND**, dark brown, fine to coarse grained, few red and white grains, little silt, very loose, moist to wet. ▽ Becomes, grey, fine grained, with few wood pieces and sulfur-like odor.	0	
					SM		13.5 **SILTY SAND**, grey, fine to medium grained, very loose, wet, sulfur-like odor.		
15		MC		3	SP		14.5 **SAND**, rusty brown, fine to coarse grained, trace silt, very loose, wet, sulfur-like odor.	0	
					ML		15.0 **SANDY SILT**, grey, fine sand, soft, wet, sulfur-like odor.		
		MC		4	SM		16.0 **SILTY SAND**, grey, fine grained, very loose, wet, sulfur-like odor.	0	End cap
							18.5		
20		MC		14	SP		**SAND**, dark grey/black, fine to coarse grained, few red and white grains, loose, wet, no odor.	0	
							20.0		

Boring completed at 20.0 feet below ground surface.

REMARKS

▽ Water level at time of drilling.

SLR GENERAL CROWLEY MARINE SVCS1.GPJ GINT US.GDT 7/9/08

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WELL NUMBER CMW-2

CLIENT Crowley Marine Services
PROJECT NAME
PROJECT NUMBER 001.0205.00011
PROJECT LOCATION Seattle, WA
DATE STARTED 6/12/08 COMPLETED 6/12/08
GROUND ELEVATION HOLE SIZE 8-inch diameter
DRILLING DRILLING CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
DRILLING DRILLING METHOD Hollow Stem Auger
▽ AT TIME OF DRILLING 11.0 ft
LOGGED BY K Saganski CHECKED BY
AT END OF ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0					SW		**SAND**, brown, fine- to coarse-grained, little silt, wet, no odors.		Cement; Hydrated bentonite chips
5									2/12 Lapis Lustre sand pack
10		MC		8, 50/1"			▽	0	2-inch schedule 40 PVC, 0.010-inch slotted screen
							13.3		
15					SM		**SILTY SAND**, dark brown, fine-grained, wet, sulfur-like odor.		
		MC		4			18.0	3	End cap

REMARKS

▽ Water level at time of drilling.

SLR GENERAL CROWLEY MARINE SVCS1.GPJ GINT US.GDT 7/9/08

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BORING NUMBER CMW-2a

CLIENT Crowley Marine Services
PROJECT NAME
PROJECT NUMBER 001.0205.00011
PROJECT LOCATION Seattle, WA
DATE STARTED 6/12/08 COMPLETED 6/12/08
GROUND ELEVATION HOLE SIZE 8-inch diameter
DRILLING DRILLING CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
DRILLING DRILLING METHOD Hollow Stem Auger
▽ AT TIME OF DRILLING 11.5 ft
LOGGED BY K Saganski CHECKED BY
AT END OF ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					GP		**SAND AND GRAVEL.**	
							3.0	
		MC		30	SP		**SAND**, brown, fine- to medium-grained, little silt, moist.	0
5		MC	CMW2-4a	27			5.2': Trace coarse gravel, becomes wet.	0
							6.0	
		MC		14, 50/1"	SP		**GRAVELLY SAND**, brown, fine-to medium-grained, trace silt, moist to wet.	0
							7.5	
					GM		**SILTY GRAVEL**, brown, fine- to coarse-grained, little fine-to coarse-grained sand, moist to wet.	
10		MC		11			9.4': With wood.	
							10.2	
		MC		50/6"	SP		**SAND**, brown, fine- to medium-grained, little silt, moist to wet. ▽ No recovery; rock in sampler.	
							13.5	
15		MC		8, 50/4"	SW		**GRAVEL AND SAND**, brown, fine-to coarse-grained, little silt, wet.	
							15.3	

Boring completed at 15.3 feet below ground surface.

REMARKS

▽ Water level at time of drilling.

SLR GENERAL CROWLEY MARINE SVCS1.GPJ GINT US.GDT 7/9/08

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WELL NUMBER CMW-3

CLIENT Crowley Marine Services
PROJECT NAME
PROJECT NUMBER 001.0205.00011
PROJECT LOCATION Seattle, WA
DATE STARTED 6/12/08 COMPLETED 6/12/08
GROUND ELEVATION HOLE SIZE 8-inch diameter
DRILLING DRILLING CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
DRILLING DRILLING METHOD Hollow Stem Auger
▽ AT TIME OF DRILLING 10.3 ft
LOGGED BY K Saganski CHECKED BY
AT END OF ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0					SW		**GRAVEL AND SAND**, brown, fine- to coarse-grained, little silt, moist to wet.		Cement; Hydrated bentonite chips; Blank 2-inch schedule 40 PVC riser
		MC		49			3.5	0	
					SP		**SAND**, brown, fine- to medium-grained, trace silt, moist.		
5		MC	CMW3-5	24			5': Little fine to coarse gravel.	0	
									2/12 Lapis Lustre sand pack
		MC		23				0	
10							9.2': Becomes rocky.		
		MC	CMW3-10		GW		10.0 ▽ **SANDY GRAVEL**, dark gray to black, fine- to coarse-grained, some silt, chemical odor. 10.3': Becomes brown, no chemical odor.	0	2-inch schedule 40 PVC, 0.010-inch slotted screen
		MC			SM		11.5 **SILTY SAND**, brown, fine- to coarse-grained, little fine to coarse gravel, wet, no odors.	0	
15							15.5		
					SW		**SAND**, brown, fine- to coarse-grained, wet, few red and white grains.		End cap
		MC		5			19.5		
							Boring completed at 19.5 feet below ground surface.		

REMARKS

▽ Water level at time of drilling.

SLR GENERAL CROWLEY MARINE SVCS1.GPJ GINT US.GDT 7/9/08

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WELL NUMBER CMW-4

CLIENT Crowley Marine Services
PROJECT NAME
PROJECT NUMBER 001.0205.00011
PROJECT LOCATION Seattle, WA
DATE STARTED 6/13/08 COMPLETED 6/13/08
GROUND ELEVATION HOLE SIZE 8-inch diameter
DRILLING DRILLING CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
DRILLING DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY K Saganski CHECKED BY
AT END OF ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0					GP		**GRAVEL.** 0.8		Cement
					SP		**SAND**, brown, fine- to medium-grained, some fine to coarse gravel, little silt, moist.		Hydrated bentonite chips
		MC		45				0	Blank 2-inch schedule 40 PVC riser
5		MC	CMW4-5	24			5.0	0	
					ML		**SILT**, brown to gray, little brick, wood, and gravel, little fine- to coarse-grained sand, moist. 6.0		
		MC		10	ML		**SANDY SILT**, brown, little brick and fine to coarse gravel, moist to wet. 8.5	0	2/12 Lapis Lustre sand pack
					SM		**SILTY SAND**, dark brown, fine- to medium-grained, wet, slight sheen, no odors. 10.0		
10		MC		27				0	
					SP		**SAND**, dark brown, fine- to medium-grained, some brick and metal, little fine to coarse gravel, little silt, wet.		2-inch schedule 40 PVC, 0.010-inch slotted screen
		MC		23, 50/4"			11.7': Concrete and sand. 12.6	0	
					SP		**SAND**, gray, fine- to medium, little silt, wet.		
15		MC		27			14.4': Becomes brown, some fine to coarse gravel. 16.0	0	
					SW		**SAND**, dark brown to black, fine- to coarse-grained, little silt, little gravel, wet, few red and white grains.		
		MC		14			18.4	0	End cap

Boring completed at 18.4 feet below ground surface.

REMARKS

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WELL NUMBER CMW-5

CLIENT Crowley Marine Services
PROJECT NAME
PROJECT NUMBER 001.0205.00011
PROJECT LOCATION Seattle, WA
DATE STARTED 6/13/08 COMPLETED 6/13/08
GROUND ELEVATION HOLE SIZE 8-inch diameter
DRILLING DRILLING CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
DRILLING DRILLING METHOD Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY K Saganski CHECKED BY
AT END OF ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0					GP		0.8 **GRAVEL.**		Cement
		MC		50/3"	SP		**SAND**, brown, fine- to medium-grained, trace silt, moist.	0	Hydrated bentonite chips
							3.5		Blank 2-inch schedule 40 PVC riser
5		MC	CMW5-5	50/2"	SW		**SAND**, brown, fine- to coarse-grained, some silt, little fine to coarse gravel, moist.	0	
		MC		22			7.6	0	2/12 Lapis Lustre sand pack
					GM		8.5 **SILTY GRAVEL**, brown, fine to coarse, little fine- to coarse-grained sand, moist.		
10		MC		30	SW		**CONCRETE AND SAND**, brown to gray, fine- to coarse-grained, little silt, moist to wet.	0	2-inch schedule 40 PVC, 0.010-inch slotted screen
		MC		50/6"			12.0 12': Refusal; moved 22' to the north.		
					SW		**CONCRETE, REBAR AND SAND**, brown, fine- to coarse-grained, little silt, moist.		
							13.3		
					SM		**SILTY SAND**, dark brown, fine- to medium-grained, wet, few red and white grains.		
15		MC		6			14.6		
					SP		**SAND**, dark brown, fine-grained, little silt, wet.		
							16.0		
		MC		8	SP		**SAND**, dark brown, fine- to medium-grained, trace silt, wet, few red and white grains.		End cap
							18.4		

Boring completed at 18.4 feet below ground surface.

REMARKS

SLR GENERAL_CROWLEY MARINE SVCS1.GPJ GINT US.GDT 7/9/08

SLR
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WELL NUMBER CMW-6

CLIENT Crowley Marine Services
PROJECT NAME
PROJECT NUMBER 001.0205.00011
PROJECT LOCATION Seattle, WA
DATE STARTED 6/13/08 COMPLETED 6/13/08
GROUND ELEVATION HOLE SIZE 8-inch diameter
DRILLING DRILLING CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
DRILLING DRILLING METHOD Hollow Stem Auger
▽ AT TIME OF DRILLING 11.1 ft
LOGGED BY K Saganski CHECKED BY
AT END OF ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0					GP		**GRAVEL.**		Cement
							1.3		
					SP		**SAND**, brown, fine- to medium-grained, some fine to coarse gravel, trace silt, moist.		Hydrated bentonite chips
		MC		26			3.5	0	
					SM		**SILTY SAND**, fine- to medium-grained, some fine to coarse gravel, moist.		Blank 2-inch schedule 40 PVC riser
5		MC	CMW6-5	16			5': Some concrete and asphalt fragments.	0	
							6.5': Brick and concrete fragments.		
		MC		13				0	2/12 Lapis Lustre sand pack
							8.5		
					SW		**GRAVEL AND SAND**, brown, fine- to coarse-grained, little silt, moist to wet, some cobbles.		
10		MC		26				0	
							▽		
		MC		13, 50/6"			11.5': Becomes brown to black, few wood and brick fragments, becomes wet.	0	2-inch schedule 40 PVC, 0.010-inch slotted screen
							14.3		
							14': Concrete.		
15		MC		10	SP		**SAND**, reddish brown to gray, fine- to medium-grained, few silt, wet, few red and white grains.	0	
		MC						0	
							19.9		End cap

Boring completed at 19.9 feet below ground surface.

REMARKS

▽ Water level at time of drilling.

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WELL NUMBER CMW-7

CLIENT Crowley Marine Services
PROJECT NAME
PROJECT NUMBER 001.0205.00011
PROJECT LOCATION Seattle, WA
DATE STARTED 6/13/08 COMPLETED 6/13/08
GROUND ELEVATION HOLE SIZE 8-inch diameter
DRILLING DRILLING CONTRACTOR Cascade Drilling
GROUND WATER LEVELS:
DRILLING DRILLING METHOD Hollow Stem Auger
▽ AT TIME OF DRILLING 11.0 ft
LOGGED BY K Saganski CHECKED BY
AT END OF ---
NOTES
AFTER DRILLING ---

DEPTH (ft)	INTERVAL	TYPE	NAME	BLOW COUNTS PER FOOT (N VALUE)	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0					GP		**GRAVEL AND SAND**, little silt.		Cement
							0.8 **SAND**, brown, fine- to medium-grained, moist.		
		MC		13, 50/6"	SP			0	Hydrated bentonite chips
							4.5		Blank 2-inch schedule 40 PVC riser
5		MC	CMW7-5	44	SM		5.1 **SILTY SAND**, gray, fine- to medium-grained, some gravel and brick, moist.	0	
							SAND, brown, fine- to medium-grained, moist.		
					SP				
		MC					7': Slight chemical odor.	8.9	2/12 Lapis Lustre sand pack
							9.0		
10							**SAND**, brown, fine-grained, trace silt, moist to wet, interbedded with 2" thick silt lens, bits of wire and brick in slough.		
		MC		9	SP		▽		
							12.0		2-inch schedule 40 PVC, 0.010-inch slotted screen
		MC		7	SM		**SILTY SAND**, brown, fine-grained, wet, interbedded with 1-2" thick silt and sand lenses.		
							14.5		
15		MC		6			**SAND**, dark brown to black, fine- to medium-grained, wet, few red and white grains.		
		MC		11	SP		16.5': Color grades from brown to reddish brown, then to black.		
							17.7': Wood chunk.		
							19.7		End cap
							Boring completed at 19.7' below ground surface.		

REMARKS

▽ Water level at time of drilling.

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WELL NUMBER SLR-1

CLIENT 8th Avenue Terminals, Inc. **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00019 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 8/22/11 **COMPLETED** 8/22/11 **GROUND ELEVATION** 12.55' **HOLE SIZE** 8-inch-diameter

DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push/Hollow-Stem Auger ▽ **AT TIME OF DRILLING** 10.0 ft

LOGGED BY C. Lee **CHECKED BY** M. Staton **AT END OF**

NOTES **AFTER DRILLING**

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							0.5 **CONCRETE**.	0.0	Concrete
		GP	SLR1-1*	100	SP		1.5 **GRAVELLY SAND (FILL)**, brown, fine-grained, little fine gravel, damp, no hydrocarbon-like odors or staining.	0.0	
			SLR1-3		SP		**SAND (FILL)**, brown, fine-grained, damp to moist, no hydrocarbon-like odors or staining.	0.0	Hydrated bentonite chips
5							5.0 @ 4.5 feet: Becomes moist.	0.0	2"-diameter Sch. 40 PVC blank riser
		GP	SLR1-6*	100	SM		**SILTY SAND (FILL)**, dark gray, very fine-grained, little fines, moist to wet, no hydrocarbon-like odors or staining.	0.0	
			SLR1-7.5					0.0	10x20 silica sand pack
10		GP	SLR1-10*	50			▽ @ 10.0 feet: Becomes wet. 11.5	0.0	2"-diameter Sch. 40 PVC 0.020"-slotted screen.
		GP	SLR1-12.5	100	SP		**SAND**, dark gray, very fine-grained, wet, no hydrocarbon-like odors or staining. 14.0	0.0	
15			SLR1-15		SM		**SILTY SAND**, dark gray, very fine-grained, little fines, wet, no hydrocarbon-like odors or staining. 16.0	0.0	2"-diameter Sch. 40 PVC end cap.

Boring completed at 16.0 feet.

WELL COMPLETION DETAILS:

0.3 to 5.0 feet: 2"-diameter Sch. 40 PVC blank riser.
5.0 to 14.8 feet: 2"-diameter Sch. 40 PVC 0.020"-slotted screen.
14.8 to 15.1 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 2.0 feet: Concrete.
2.0 to 4.0 feet: Hydrated bentonite chips.
4.0 to 16.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

SLR MW LOG 8TH AVE TERMINALS INC.GPJ GINT US.GDT 9/20/12

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Fax: 425.402.8488

WELL NUMBER SLR-2

CLIENT 8th Avenue Terminals, Inc. **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00019 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 8/19/11 **COMPLETED** 8/19/11 **GROUND ELEVATION** 11.49' **HOLE SIZE** 8-inch-diameter

DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push/Hollow-Stem Auger ▽ **AT TIME OF DRILLING** 8.0 ft

LOGGED BY C. Lee **CHECKED BY** M. Staton **AT END OF**

NOTES **AFTER DRILLING**

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0					GP		**GRAVEL (FILL)**, brown, fine to medium, few fine-grained sand, dry, no hydrocarbon-like odors or staining.	0.0	Concrete
			SLR2-1*			1.0			
		GP		80	SP		**SAND (FILL)**, grayish brown, fine-grained, damp to moist, no hydrocarbon-like odors or staining.	0.0	Hydrated bentonite chips
			SLR2-3					0.0	
5						5.0		0.0	2"-diameter Sch. 40 PVC blank riser
		GP	SLR2-6*	100			**SILT (FILL)**, gray, moist to wet, spongey texture, no hydrocarbon-like odors or staining.	0.0	
								0.0	
							▽ @ 8.0 feet: Becomes wet.	0.0	10x20 silica sand pack
			SLR2-8					0.0	
10		GP	SLR2-10*	100	ML			0.0	2"-diameter Sch. 40 PVC 0.020"-slotted screen.
								0.0	
			SLR2-12.5					0.0	
		GP		100			@ 13.0 feet: Few fine-grained sand.	0.0	
15			SLR2-15			15.0		0.0	2"-diameter Sch. 40 PVC end cap.
					SM	16.0	**SILTY SAND**, dark gray, fine- to medium-grained, some fines, wet, no hydrocarbon-like odors or staining.	0.0	
							Boring completed at 16.0 feet.		

WELL COMPLETION DETAILS:

0.3 to 4.2 feet: 2"-diameter Sch. 40 PVC blank riser.
4.2 to 14.0 feet: 2"-diameter Sch. 40 PVC 0.020"-slotted screen.
14.0 to 14.3 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 2.0 feet: Concrete.
2.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 16.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

SLR MW LOG 8TH AVE TERMINALS INC.GPJ GINT US.GDT 9/20/12

SLR
22118 20th Ave. SE, Suite G-202
Bothell, Washington 98021
Telephone: 425.402.8800
Fax: 425.402.8488

WELL NUMBER SLR-3

CLIENT 8th Avenue Terminals, Inc. **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00019 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 8/19/11 **COMPLETED** 8/19/11 **GROUND ELEVATION** 12.27' **HOLE SIZE** 8-inch-diameter

DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push/Hollow-Stem Auger ▽ **AT TIME OF DRILLING** 8.0 ft

LOGGED BY C. Lee **CHECKED BY** M. Staton **AT END OF**

NOTES **AFTER DRILLING**

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							0.5 **ASPHALT**.	0.0	Concrete
			SLR3-1*		GP		1.5 **GRAVEL (FILL)**, gray, fine to medium, few fine-grained sand, dry, no hydrocarbon-like odors or staining.	0.0	
		GP		80			**GRAVELLY SAND (FILL)**, brown, fine-grained, some fine to medium gravel, damp, no hydrocarbon-like odors or staining.	0.0	Hydrated bentonite chips
			SLR3-3		SP			0.0	2"-diameter Sch. 40 PVC blank riser
5							5.0	0.0	
		GP	SLR3-6*	100			**SILT (FILL)**, dark gray, moist to wet, no hydrocarbon-like odors or staining.	0.0	
			SLR3-8		ML		▽ @ 8.0 feet: Becomes wet.	0.0	10x20 silica sand pack
10		GP	SLR3-10*	100			11.0	0.0	2"-diameter Sch. 40 PVC 0.020"-slotted screen.
			SLR3-12.5		SP		**SAND**, dark gray, fine-grained, few fines, wet, no hydrocarbon-like odors or staining.	0.0	
		GP		30				0.0	2"-diameter Sch. 40 PVC end cap.
15			SLR3-15				16.0	0.0	

Boring completed at 16.0 feet.

WELL COMPLETION DETAILS:

0.3 to 3.9 feet: 2"-diameter Sch. 40 PVC blank riser.
3.9 to 13.7 feet: 2"-diameter Sch. 40 PVC 0.020"-slotted screen.
13.7 to 14.0 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 2.0 feet: Concrete.
2.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 16.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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Bothell, Washington 98021
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Fax: 425.402.8488

BORING NUMBER SLR-4

CLIENT 8th Avenue Terminals, Inc. **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00019 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 8/19/11 **COMPLETED** 8/19/11 **GROUND ELEVATION** 16.60' **HOLE SIZE** 8-inch-diameter

DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push/Hollow-Stem Auger ▽ **AT TIME OF DRILLING** 11.0 ft

LOGGED BY C. Lee **CHECKED BY** M. Staton **AT END OF**

NOTES **AFTER DRILLING**

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					GP		**GRAVEL (FILL)**, tan, fine to medium, few fine-grained sand, damp, no hydrocarbon-like odors or staining.	0.0
			SLR4-1*			1.0		
		GP		100	SP		**SAND (FILL)**, brown, fine-grained, damp, no hydrocarbon-like odors or staining.	0.0
			SLR4-3					0.0
						4.0		0.0
5							**CONSTRUCTION DEBRIS (FILL)**, brick, wood pieces, few fines, moist, no hydrocarbon-like odors or staining.	0.0
			SLR4-5*			5.5		0.0
		GP		100	SP		**SAND (FILL)**, dark gray, fine-grained, moist to wet, no hydrocarbon-like odors or staining.	0.0
			SLR4-7.5					0.0
								0.0
10		GP	SLR4-10*	100				0.0
							▽ @ 11.0 feet: Becomes wet.	0.0
						12.0		0.0
			SLR4-12.5				**SAND**, brown, fine-grained, wet, no hydrocarbon-like odors or staining.	0.0
		GP		100	SP			0.0
15			SLR4-15					0.0
							@ 15.0 feet: Becomes gray.	0.0
						16.0		
							Boring completed at 16.0 feet.	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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Bothell, Washington 98021
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BORING NUMBER SLR-5

CLIENT 8th Avenue Terminals, Inc.
PROJECT NAME 8th Avenue Terminals, Inc. Site
PROJECT NUMBER 101.00205.00019
PROJECT LOCATION 7400 8th Ave. S, Seattle, WA
DATE STARTED 8/22/11 **COMPLETED** 8/22/11
GROUND ELEVATION 12.20' **HOLE SIZE** 8-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▽ **AT TIME OF DRILLING** 8.5 ft
LOGGED BY C. Lee **CHECKED BY** M. Staton
AT END OF
NOTES
AFTER DRILLING

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **CONCRETE**.	0.0
		GP	SLR5-1	30	GP		**SANDY GRAVEL (FILL)**, brown, fine to medium, some fine-grained sand, damp, no hydrocarbon-like odors or staining.	0.0
							2.0	
			SLR5-3*		SP		**SAND (FILL)**, gray, fine-grained, moist, moderate hydrocarbon-like odor and sheen.	0.0
								24.2
5								14.7
		GP	SLR5-6*	100				20.1
			SLR5-7.5*				6.5	35.0
					ML		**SILT (FILL)**, brown, moist to wet, no hydrocarbon-like odors or staining.	1.9
							▽ @ 8.5 feet: Becomes wet.	0.0
							9.0	
10		GP	SLR5-10*	100	SP		**SAND**, black, fine-grained, wet, no hydrocarbon-like odors or staining.	0.0
								0.0
								0.0
			SLR5-12.5					0.0
		GP		100				0.0
15			SLR5-15					0.0
							16.0	0.0
							Boring completed at 16.0 feet.	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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WELL NUMBER SLR-6

CLIENT 8th Avenue Terminals, Inc. **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00019 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 8/19/11 **COMPLETED** 8/19/11 **GROUND ELEVATION** 12.75' **HOLE SIZE** 8-inch-diameter

DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push/Hollow-Stem Auger ▽ **AT TIME OF DRILLING** 8.5 ft

LOGGED BY C. Lee **CHECKED BY** M. Staton **AT END OF**

NOTES **AFTER DRILLING**

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							0.5 **CONCRETE**.	0.0	Concrete
		GP	SLR6-1*	50	GP		1.0 **GRAVEL (FILL)**, gray, fine, dry, no hydrocarbon-like odors or staining.	0.0	
			SLR6-3		SP		**SAND (FILL)**, brown, fine-grained, damp, no hydrocarbon-like odors or staining.	0.0	Hydrated bentonite chips
5		GP	SLR6-5*	50			@ 5.0 feet: Few fines.	0.0	2"-diameter Sch. 40 PVC blank riser
			SLR6-7.5				7.0	0.0	
					ML		**SANDY SILT (FILL)**, brown, some fine-grained sand, moist to wet, no hydrocarbon-like odors or staining.	0.0	10x20 silica sand pack
10		GP	SLR6-10*	75			▽ @ 8.5 feet: Becomes wet.	0.0	
							10.0	0.0	
					SP		**SAND**, gray, fine-grained, few fines, red mottling, wet, no hydrocarbon-like odors or staining.	0.0	2"-diameter Sch. 40 PVC 0.020"-slotted screen.
			SLR6-12.5				13.0	0.0	
		GP		75	SP		**GRAVELLY SAND**, brown, fine-grained, some fine gravel, trace fines, wet, no hydrocarbon-like odors or staining.	0.0	
15			SLR6-15				16.0	0.0	2"-diameter Sch. 40 PVC end cap.
								0.0	

Boring completed at 16.0 feet.

WELL COMPLETION DETAILS:

0.3 to 3.9 feet: 2"-diameter Sch. 40 PVC blank riser.
3.9 to 13.7 feet: 2"-diameter Sch. 40 PVC 0.020"-slotted screen.
13.7 to 14.0 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 2.0 feet: Concrete.
2.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 16.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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WELL NUMBER SLR-7

CLIENT 8th Avenue Terminals, Inc. **PROJECT NAME** 8th Avenue Terminals, Inc. Site

PROJECT NUMBER 101.00205.00019 **PROJECT LOCATION** 7400 8th Ave. S, Seattle, WA

DATE STARTED 8/22/11 **COMPLETED** 8/22/11 **GROUND ELEVATION** 14.60' **HOLE SIZE** 8-inch-diameter

DRILLING CONTRACTOR ESN-NW **GROUND WATER LEVELS:**

DRILLING METHOD Direct Push/Hollow-Stem Auger ▽ **AT TIME OF DRILLING** 9.5 ft

LOGGED BY C. Lee **CHECKED BY** M. Staton **AT END OF**

NOTES **AFTER DRILLING**

DEPTH (ft)	INTERVAL	TYPE	NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)	WELL DIAGRAM
0							0.5 **ASPHALT**.	0.0	Concrete
		GP	SLR7-1*	100	GP		**SANDY GRAVEL (FILL)**, light brown, fine to medium, some fine-grained sand, dry, no hydrocarbon-like odors or staining.	0.0	
							2.0		
			SLR7-3		SP		**SAND (FILL)**, brown, fine- to medium-grained, trace fine gravel, damp, no hydrocarbon-like odors or staining.	0.0	Hydrated bentonite chips
5		GP	SLR7-5*	100	SP			0.0	2"-diameter Sch. 40 PVC blank riser
							6.5	0.0	
							7.0 **CONSTRUCTION DEBRIS (FILL)**, brick.	0.0	
			SLR7-7.5		SP		**SAND (FILL)**, dark gray, very fine-grained, few fines, moist to wet, no hydrocarbon-like odors or staining.	0.0	10x20 silica sand pack
10		GP	SLR7-10*	100	SP		▽ @ 9.5 feet: Becomes wet. 10.0	0.0	
					ML		**SILT (FILL)**, dark gray, few very fine-grained sand, wet, no hydrocarbon-like odors or staining.	0.0	2"-diameter Sch. 40 PVC 0.020"-slotted screen.
			SLR7-12.5					0.0	
		GP		100				0.0	
15			SLR7-15					0.0	2"-diameter Sch. 40 PVC end cap.
							16.0	0.0	

Boring completed at 16.0 feet.

WELL COMPLETION DETAILS:

0.3 to 4.2 feet: 2"-diameter Sch. 40 PVC blank riser.
4.2 to 14.0 feet: 2"-diameter Sch. 40 PVC 0.020"-slotted screen.
14.0 to 14.3 feet: 2"-diameter Sch. 40 PVC end cap.

0.0 to 2.0 feet: Concrete.
2.0 to 3.0 feet: Hydrated bentonite chips.
3.0 to 16.0 feet: 10x20 Colorado silica sand.

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: HA-1
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJD	
Sampling Method: HSA & HA	Monitoring Device: PID	Comments:
Start Date/Time: 7/6/94 1120	Finish Date/Time: 7/6/94 1207	
First Water (bgs): 6.75'	Stabilized Water Level (bgs):	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (inches)	Blows/6 inches	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
			0			
			1			Rubble, brick and concrete, coarse gravels and sands, very dense, slightly damp
HA		23.0	2			
			3			
			4			
7/10/12			5	SP		Sand, dark gray (10YR 4/1), few gravel, mostly medium to coarse sands, loose, moist, (10,90,0,0)
4/5/8		8.9	6	SM	▽	Silty Sand, dark gray (10YR 4/1), fine sand, some silt, loose, moist to wet (0,60,40,0)
			7			
			8			Boring terminated at 6.0 feet. Sampler advanced to 7.5 feet Boring abandoned on 7/6/94.
			9			
			10			
			11			
			12			
			13			
			14			
			15			
			16			
			17			
			18			
			19			
			20			
			21			
			22			
			23			
			24			
			25			
			26			
			27			
			28			
			29			
			30			

Boring Abandonment/ Well Construction Details

WPN:CROOIJIL
DATE:7/28/94

SEACOR

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: HA-2
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJO	
Sampling Method: HSA	Monitoring Device: PID	Comments:
Start Date/Time: 7/6/94 0932	Finish Date/Time: 7/6/94 1032	
First Water (bgs):	Stabilized Water Level (bgs):	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (Inches)	Blows/6 inches	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)	Boring Abandonment/ Well Construction Details
			0				ORIGINAL COVER
	HA		1			Rubble Brick and Concrete, Coarse Gravels and Silt Sands	
			2				
	13/15/17	236	3	SM		Sand, dark grayish brown (10YR 4/2), mostly fine to coarse sand, few medium dense, slightly damp (0,90,10,0)	
			4				
	50	-	5			Unable to sample, encounter concrete Boring terminated at 5.0 feet. Sampler advanced to 3.7 feet Boring abandoned on 7/6/94.	
			6				
			7				
			8				
			9				
			10				
			11				
			12				
			13				
			14				
			15				
			16				
			17				
			18				
			19				
			20				
			21				
			22				
			23				
			24				
			25				
			26				
			27				
			28				
			29				
			30				

DWG: CR001034
DATE: 7/28/94

SEACOR

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

Page 1 of 1

Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: HA-3
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJD	
Sampling Method: HSA & HA	Monitoring Device: PID	Comments:
Start Date/Time: 7/6/94 1210	Finish Date/Time: 7/6/94 1213	
First Water (bgs):	Stabilized Water Level (bgs):	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (inches)	Blows/6 inches	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)	Boring Abandonment/ Well Construction Details
			0				
HA			1			Light gray rubble, concrete and gravel, very dense, slightly damp.	
HA		50.4	2				
			3				
			4				
HA		37.3	5	SM		Sand, brown (10YR 5/3), mostly fine to coarse sand, trace silt, very dense, moist (0,95,5,0)	
			6			Boring terminated at 5.0 feet. Sampler advanced to 5.5 feet. Boring abandoned on 7/6/94.	
			7				
			8				
			9				
			10				
			11				
			12				
			13				
			14				
			15				
			16				
			17				
			18				
			19				
			20				
			21				
			22				
			23				
			24				
			25				
			26				
			27				
			28				
			29				
			30				

DWG:CR00102
DATE:7/28/94

SEACOR

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

Page 1 of 1

Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: HA-4
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJD	
Sampling Method: HSA & HA	Monitoring Device: PID	Comments:
Start Date/Time: 7/6/94 0820	Finish Date/Time: 7/6/94 0920	
First Water (bgs):	Stabilized Water Level (bgs):	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (Inches)	Blows/6 inches	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)	Boring Abandonment/ Well Construction Details
HA	-	-	0-3	SP-SM		Sand with Gravel, Light brownish gray, (10YR 6/2), a little fine to medium rounded gravel, mostly fine to coarse sand, few silt, medium dense, slightly moist, (15,75,10,0).	ORIGINAL COVER
HA	20.2	20.2	5	SM		Silty Sand, grayish brown (10YR 5/2), mostly fine sand, some silt, medium dense, very moist to wet, (0,55,45,0)	
			6			Boring terminated at 5.0 feet. Sampler advanced to 5.5 feet Boring abandoned on 7/6/94.	

DWG:CR00104L
DATE:7/28/94

SEACOR

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: HA-5
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJO	
Sampling Method: HSA & HA	Monitoring Device: PID	Comments:
Start Date/Time: 7/5/94 1010	Finish Date/Time: 7/5/94 1040	
First Water (bgs):	Stabilized Water Level (bgs):	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (Inches)	Blows/6 inches	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
HA			0-1	SP-SM		Sand with Gravel, grayish brown, (10YR 5/2), a little fine rounded gravel, mostly fine to coarse sand, few silt, medium dense, slightly damp, (20;70,10,0)
			2-3			
HA			4-5	SM		Silty Sand, grayish brown, (10YR 5/2), mostly fine sand, some silt, medium dense, very moist, (0,60,40,0)
			6			Boring terminated at 5.0 feet. Sampler advanced to 5.5 feet Boring abandoned on 7/5/94.
			7-30			

Boring Abandonment/ Well Construction Details

ORIGINAL COVER

DWG:CR00116L
DATE:7/28/94

SEACOR

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

Page 1 of 1

Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: HA-6
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJO	
Sampling Method: HSA & HA	Monitoring Device: PID	Comments:
Start Date/Time: 7/6/94 0714	Finish Date/Time: 7/6/94 0724	
First Water (bgs): 4.8'	Stabilized Water Level (bgs):	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (Inches)	Blows/6 inches	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)	Boring Abandonment/ Well Construction Details
HA		31.5	0-1	SP-SM		Sand with gravel, light brownish gray (10YR 6/2), a little gravel to 1/2 inch, mostly fine to coarse sand, few silt, medium dense, slightly moist, (15,75,10,0)	ORIGINAL COVER
HA		22.2	4-5	SM	▽	Sand with Silt, very dark gray (10YR 3/1), mostly fine to medium sand, a little silt, loose to medium dense, wet (0,75,25,0)	
						Boring terminated at 5.0 feet. Sampler advanced to 5.5 feet Boring abandoned on 7/6/94.	

DWG:CRO0102L
DATE:7/28/94

SEACOR

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

Page 1 of 1

Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: HA-7
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJD	
Sampling Method: HSA & HA	Monitoring Device: PID	Comments:
Start Date/Time: 7/5/94	Finish Date/Time: 7/5/94	
First Water (bgs): 5.0	Stabilized Water Level (bgs):	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (Inches)	Blows/inches	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
HA		0.3	0–1	GM		Gravelly Sand, light brownish gray (2.5Y 6/2), with silt, rounded gravel to 1/2 inch diameter, medium to coarse sand, a little silt, medium dense, moist (30,55,15,0), no odor
			1–2	SM		Silty Sand, very dark gray (10YR 3/1), medium to coarse sand, a little silt, loose to medium, moist (0,75,25,0), humic odor
			2–4			
HA		0	4–5		▽	becomes wet at 4.8 feet
			5–6			Boring terminated at 5.0 feet. Sampler advanced to 5.5 feet Boring abandoned on 7/5/94.
			6–30			

Boring Abandonment/ Well Construction Details

ORIGINAL COVER

DWG:CR001061
DATE:7/28/94

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Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

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Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: HA-8
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJO	
Sampling Method: HSA & HA	Monitoring Device: PID	Comments:
Start Date/Time: 7/5/94	Finish Date/Time: 7/5/94	
First Water (bgs):	Stabilized Water Level (bgs):	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (Inches)	Blows/6 inches	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)	Boring Abandonment/ Well Construction Details
	HA		0-1	GP		Gravelly Sand, grayish brown, (10YR 5/2), some fine rounded gravel, mostly fine to coarse sand, few silt, medium dense, moist, (30,60,10,0)	ORIGINAL COVER
			2-3				
	HA		4-5	SM		Silty Sand, dark gray, (10YR 4/1), mostly fine to medium sand, some silt; medium dense; moist, (0,60,40,0)	
			6			Boring terminated at 5.0 feet. Sampler advanced to 5.5 feet Boring abandoned on 7/5/94.	
			7-30				

DWG: CR001154
DATE: 7/28/94

SEACOR

Reviewed By: _____ Date: _____

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Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: HA-9
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJO	
Sampling Method: HSA & HA	Monitoring Device: PID	Comments:
Start Date/Time: 7/6/94 0752	Finish Date/Time: 7/6/94 0752	
First Water (bgs):	Stabilized Water Level (bgs):	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (Inches)	Blows/6 inches	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)	Boring Abandonment/ Well Construction Details
HA	-	-	0-3	GP-GM		Gravelly Sand, grayish brown, (10YR 5/2), some fine rounded gravel, mostly fine to coarse sand; few silt, medium dense, moist, (35,55,10,0)	ORIGINAL COVER
HA	11.0		3-5	SM		Silty Sand, dark grayish brown (10YR 4/3), mostly very fine to medium sand, some silt, loose to medium dense; slightly moist (0,60,40,0)	
			5			Boring terminated at 5.0 feet. Sampler advanced to 5.5 feet Boring abandoned on 7/6/94.	

DWG:CRO0107L
DATE:7/28/94

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Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: HA-10
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJD	
Sampling Method: HSA & HA	Monitoring Device: PID	Comments:
Start Date/Time: 7/6/94 0658	Finish Date/Time: 7/6/94 0724	
First Water (bgs):	Stabilized Water Level (bgs):	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (inches)	Blows/6 inches	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
HA		18.2	0-1	GP-GM		Gravelly Sand, grayish brown (2.5Y 5/2), some rounded gravel to 1 inch diameter, fine to coarse sand, few silt, medium dense, slightly moist (35,55,10,0)
			1-3			Silty Sand, very dark gray (10YR 3/1), mostly medium to coarse sand, a little silt, medium dense, moist (0,75,25,0), humic odor
HA		18.4	4-5	SM		Color becomes dark grayish brown (10YR 4/2), moist (0,65,35,0)
			5-30			Boring terminated at 5.0 feet. Sampler advanced to 5.5 feet Boring abandoned on 7/6/94.

Boring Abandonment/ Well Construction Details

ORIGINAL COVER

DWG:CR00108
DATE:7/28/94

SEACOR

Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: HA-11
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJO	
Sampling Method: HSA & HA	Monitoring Device: PID	Comments:
Start Date/Time: 7/6/94 0742	Finish Date/Time: 7/6/94 0758	
First Water (bgs): 5.0	Stabilized Water Level (bgs):	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (Inches)	Blows/6 inch	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)	Boring Abandonment/ Well Construction Details
HA		3.2	0-1	SM		Brick and concrete (degraded cement)	ORIGINAL COVER
			1-5			Silty Sand, brown (7.5YR 4/4), trace fine to medium gravel, mostly fine to coarse sand and some silt, medium dense, slightly moist (5.55;40.0)	
	8/8/8	75.1	5	SM	▽	Wet	
			6-30			Boring terminated at 5.0 feet. Sampler advanced to 6.5 feet Boring abandoned on 7/6/94.	

DWG: CROO109L
DATE: 7/28/94

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Revised By: _____ Date: _____

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Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: HA-12
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJD	
Sampling Method: HA	Monitoring Device: PID	Comments:
Start Date/Time: 7/6/94 1040	Finish Date/Time: 7/6/94	
First Water (bgs):	Stabilized Water Level (bgs):	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (Inches)	Blows/6 inch	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
HA		20.1	0-1	SM		Silty Sand, dark grayish brown (10YR 4/2), mostly fine to medium sand, some silt, slightly damp, (0,60,40,0)
HA		6.0	5-6	SM		Brown (10YR 4/3)
						Boring terminated at 5.0 feet. Sampler advanced to 6.5 feet Boring abandoned on 7/6/94.

Boring Abandonment/ Well Construction Details

ORIGINAL COVER

DWG:CRO011GL
DATE:7/28/94

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Revised By: _____ Date: _____

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Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: HA-13
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJD	
Sampling Method: HSA & HA	Monitoring Device: PID	Comments:
Start Date/Time: 7/6/94 0815	Finish Date/Time: 7/6/94 0837	
First Water (bgs):	Stabilized Water Level (bgs):	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (Inches)	Blows/6 inch	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)	Boring Abandonment/ Well Construction Details
			0				ORIGINAL COVER
	HA	22.0	1	SM		Silty Sand, yellowish brown (10YR 5/4), mostly fine to medium sand and some silt, loose, slightly moist. (0,65,35,0)	
			2				
			3				
	8/16/12	20.4	4				
			5	SM		dark grayish brown (10YR 4/2)	
	10/10/12	14.7	6				
			7			Boring terminated at 5.0 feet. Sampler advanced to 6.5 feet Boring abandoned on 7/6/94.	
			8				
			9				
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DATE:7/28/94

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Page 1 of 1

Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: MW-1
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJO	
Sampling Method: HSA	Monitoring Device: PID	Comments:
Start Date/Time: 7/6/94 1511	Finish Date/Time: 7/6/94 1630	
First Water (bgs): 7.0'	Stabilized Water Level (bgs): 8.7	

Sample Interval/ Recovery (Inches)	Blows/6 inch	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level
	4/9	38.6	1	SM	
	9/7/9	54.3	2		
			3		
			4		
			5		
	9/9/9	34.8	6		
			7		▽
			8		
			9		
			10		
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			29		
			30		

Surface Elevation: Casing Top Elevation:

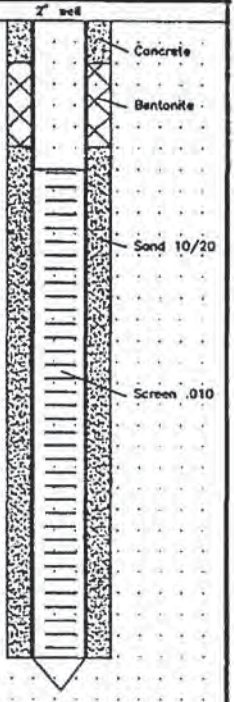
LITHOLOGIC DESCRIPTION
(color, grain size, consistency, moisture, other)

Silty Sand, dark grayish brown (10YR 5/2), mostly fine to medium sand, some silt, slightly damp, (0,70,30,0)

Wet

Boring terminated at 15.0 feet.
Sampler advanced to 6.5 feet
Boring converted to a monitoring well on 7/6/94.

Boring Abandonment/ Well Construction Details



DWG: CROOI12L
DATE: 7/28/94

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Revised By: _____ Date: _____

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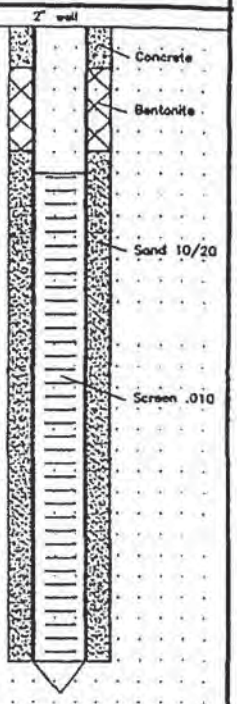
Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: MW-2
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJD	
Sampling Method: HSA 8 1/4	Monitoring Device: PID	Comments:
Start Date/Time: 7/6/94 1319	Finish Date/Time: 7/6/94 1457	
First Water (bgs): 6.75'	Stabilized Water Level (bgs): 7.0	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (inches)	Blows/6 inch	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
	12/13/17	18.6	2	SM		Silty Sand, dark gray (10YR 4/1) mostly fine sand, some silt, medium dense, slightly damp (0,60,40,0)
	10/12/21	32.8	6		▽	Wet
			9			Strong hydrocarbon odors from boring @ 10'. PID reading of cuttings = 330ppm. Soil cutting dark gray silty sands, wet.
			14			Silty Sand, dark gray (10YR 4/1), mostly fine to medium sand, some silt, medium dense, wet, (0,70,30,0)
			15			Boring terminated at 15.0 feet. Sampler advanced to 6.5 feet Boring converted to a monitoring well on 7/6/94.

Boring Abandonment/ Well Construction Details



DWG:CR00113L
DATE:7/28/94

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Revised By: _____ Date: _____

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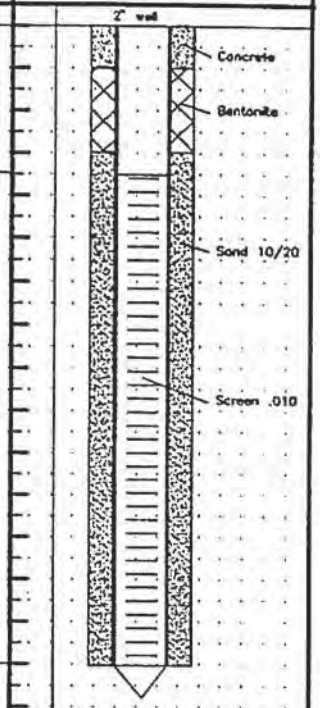
Project: CROWLEY MARINE SERVICES		Log of Boring/Monitoring Well: MW-3
Boring Location: (SEE SITE MAP)	Project No.: 00255-001-01	
Subcontractor and Equipment: CASCADE DRILLING INC.; CME 55	Logged By: DJD	
Sampling Method: HSA 8 1/4	Monitoring Device: PID	Comments:
Start Date/Time: 7/6/94 1650	Finish Date/Time: 7/6/94 1711	
First Water (bgs): 5.5'	Stabilized Water Level (bgs): 7.3	

Surface Elevation: Casing Top Elevation:

Sample Interval/ Recovery (Inches)	Blows/6 inch	PID (ppm)	Depth (Feet)	USCS Symbol	Water Level	LITHOLOGIC DESCRIPTION (color, grain size, consistency, moisture, other)
	HA	248	0-1	SP-SM		Gravelly Sand with Silt, brown (10YR 4/3), some fine gravel, mostly fine to coarse sand, a little silt, dense, moist (30,50,20,0)
	5/8/9	161	5-6	SM	▽	Silty Sand, dark grayish brown (10YR 4/2) mostly fine to coarse sand, few silt, loose, very moist, (0,90,10,0) dark gray (10YR 4/1), wet
	2/2/5	14.5	10-11			Very dark gray (10YR 3/1), wet
			15			Boring terminated at 15.0 feet. Sampler advanced to 11.5 feet. Boring converted to a monitoring well on 7/6/94.

Boring Abandonment/ Well Construction Details



DWG:CRO011.4
DATE:7/28/94

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Reviewed By: _____ Date: _____

Revised By: _____ Date: _____

BORING LOG

Project No: 0928486	**Project Name: Seattle Baseline**		**ID: SB-1**
Location: Seattle, WA	**Geologist: Joshua Bolling**	**Borehole Dia: 2”**	**Date: 12/16/2009**
Drilling Method: DPT	**Driller: Cascade Drilling**	**Well Dia: NA**	**Screen: NA**
Rig: Power Probe 9630	**Notes:**		
Time Started: 0815			
Time Finished: 0835			
Total Depth Drilled: 5’			

Depth	Pid	▼	Lithology/Remarks	Sample ID/Loc
0			Mostly silty gravel fill down to 4’.	SB-1 0-1 ft
1				
2				
3				
4			Black sand.	SB-1 4-5 ft
5			Boring terminated at 5 ft.	
6				
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BORING LOG

Project No: 0928486	**Project Name: Seattle Baseline**		**ID: SB-2**
Location: Seattle, WA	**Geologist: Joshua Bolling**	**Borehole Dia: 2”**	**Date: 12/16/2009**
Drilling Method: DPT	**Driller: Cascade Drilling**	**Well Dia: NA**	**Screen: NA**
Rig: Power Probe 9630	**Notes:**		
Time Started: 0840			
Time Finished: 0855			
Total Depth Drilled: 5’			

Depth	Pid	▼	Lithology/Remarks	Sample ID/Loc
0			Mostly silty gravel fill down to 4’.	SB-2 0-1 ft
1				
2				
3				
4			Black sand.	SB-2 4-5 ft
5			Boring terminated at 5 ft.	
6				
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BORING LOG

Project No: 0928486	**Project Name: Seattle Baseline**		**ID: SB-3**
Location: Seattle, WA	**Geologist: Joshua Bolling**	**Borehole Dia: 2”**	**Date: 12/16/2009**
Drilling Method: DPT	**Driller: Cascade Drilling**	**Well Dia: NA**	**Screen: NA**
Rig: Power Probe 9630	**Notes:**		
Time Started: 0900			
Time Finished: 0930			
Total Depth Drilled: 5’			

Depth	Pid	▼	Lithology/Remarks	Sample ID/Loc
0			Mostly silty gravel fill down to 4’.	SB-3 0-1 ft
1				
2				
3				
4			Black sand.	SB-3 4-5 ft
5			Boring terminated at 5 ft.	
6				
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BORING LOG

Project No: 0928486	**Project Name: Seattle Baseline**		**ID: SB-4**
Location: Seattle, WA	**Geologist: Joshua Bolling**	**Borehole Dia: 2”**	**Date: 12/16/2009**
Drilling Method: DPT	**Driller: Cascade Drilling**	**Well Dia: NA**	**Screen: NA**
Rig: Power Probe 9630	**Notes:**		
Time Started: 0935			
Time Finished: 0955			
Total Depth Drilled: 5’			

Depth	Pid	▼	Lithology/Remarks	Sample ID/Loc
0			Mostly silty gravel fill down to 4’. Oil staining and	SB-4 0-1 ft
1			odor at 1’.	
2				
3				
4			Black sand.	SB-4 4-5 ft
5			Boring terminated at 5 ft.	
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BORING LOG

Project No: 0928486	**Project Name: Seattle Baseline**		**ID: SB-5**
Location: Seattle, WA	**Geologist: Joshua Bolling**	**Borehole Dia: 2”**	**Date: 12/16/2009**
Drilling Method: DPT	**Driller: Cascade Drilling**	**Well Dia: NA**	**Screen: NA**
Rig: Power Probe 9630	**Notes:**		
Time Started: 1000			
Time Finished: 1035			
Total Depth Drilled: 5’			

Depth	Pid	▼	Lithology/Remarks	Sample ID/Loc
0			Very little recovery. Silty gravely fill.	SB-5 0-1 ft
1				
2				
3				
4			Black sand.	SB-5 4-5 ft
5			Boring terminated at 5 ft.	
6				
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BORING LOG

Project No: 0928486	**Project Name: Seattle Baseline**		**ID: SB-6**
Location: Seattle, WA	**Geologist: Joshua Bolling**	**Borehole Dia: 2”**	**Date: 12/16/2009**
Drilling Method: DPT	**Driller: Cascade Drilling**	**Well Dia: NA**	**Screen: NA**
Rig: Power Probe 9630	**Notes:**		
Time Started: 1045			
Time Finished: 1125			
Total Depth Drilled: 5’			

Depth	Pid	▼	Lithology/Remarks	Sample ID/Loc
0			Silty gravel fill.	SB-6 0-1 ft
1				
2				
3				
4			Black sand.	SB-6 4-5 ft
5			Boring terminated at 5 ft.	
6				
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BORING LOG

Project No: 0928486	**Project Name: Seattle Baseline**		**ID: SB-7**
Location: Seattle, WA	**Geologist: Joshua Bolling**	**Borehole Dia: 2”**	**Date: 12/16/2009**
Drilling Method: DPT	**Driller: Cascade Drilling**	**Well Dia: NA**	**Screen: NA**
Rig: Power Probe 9630	**Notes:**		
Time Started: 1130			
Time Finished: 1140			
Total Depth Drilled: 5’			

Depth	Pid	▼	Lithology/Remarks	Sample ID/Loc
0			Silty gravel fill, then brown and black sand.	SB-7 0-1 ft
1				
2				
3				
4			Fill material. Slight oil staining and petroleum odor.	SB-7 4-5 ft
5			Boring terminated at 5 ft.	
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BORING LOG

Project No: 0928486	**Project Name: Seattle Baseline**		**ID: SB-8**
Location: Seattle, WA	**Geologist: Joshua Bolling**	**Borehole Dia: 2”**	**Date: 12/16/2009**
Drilling Method: DPT	**Driller: Cascade Drilling**	**Well Dia: NA**	**Screen: NA**
Rig: Power Probe 9630	**Notes:**		
Time Started: 1150			
Time Finished: 1245			
Total Depth Drilled: 5’			

Depth	Pid	▼	Lithology/Remarks	Sample ID/Loc
0			Oil staining then silty gravel fill.	SB-8 0-1 ft
1				
2				
3			Brown and black fine grained sand.	
4				SB-8 4-5 ft
5			Boring terminated at 5 ft.	
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BORING LOG

Project No: 0928486	**Project Name: Seattle Baseline**		**ID: SB-9**
Location: Seattle, WA	**Geologist: Joshua Bolling**	**Borehole Dia: 2”**	**Date: 12/16/2009**
Drilling Method: DPT	**Driller: Cascade Drilling**	**Well Dia: NA**	**Screen: NA**
Rig: Power Probe 9630	**Notes:**		
Time Started: 1250			
Time Finished: 1310			
Total Depth Drilled: 5’			

Depth	Pid	▼	Lithology/Remarks	Sample ID/Loc
0			Silty gravel fill.	SB-9 0-1 ft
1				
2			Fine grained brown sand.	
3				
4				SB-9 4-5 ft
5			Boring terminated at 5 ft.	
6				
7				
8				
9				
10				
11				
12				
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33				
34				
35				

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BORING LOG

Project No: 0928486	**Project Name: Seattle Baseline**		**ID: SB-10**
Location: Seattle, WA	**Geologist: Joshua Bolling**	**Borehole Dia: 2”**	**Date: 12/16/2009**
Drilling Method: DPT	**Driller: Cascade Drilling**	**Well Dia: NA**	**Screen: NA**
Rig: Power Probe 9630	**Notes:**		
Time Started: 1310			
Time Finished: 1315			
Total Depth Drilled: 5’			

Depth	Pid	▼	Lithology/Remarks	Sample ID/Loc
0			Silty gravel fill.	SB-10 0-1 ft
1				
2			Fine grained brown sand.	
3				
4				SB-10 4-5 ft
5			Boring terminated at 5 ft.	
6				
7				
8				
9				
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BORING LOG

Project No: 0928486	**Project Name: Seattle Baseline**		**ID: SB-11**
Location: Seattle, WA	**Geologist: Joshua Bolling**	**Borehole Dia: 2”**	**Date: 12/16/2009**
Drilling Method: DPT	**Driller: Cascade Drilling**	**Well Dia: NA**	**Screen: NA**
Rig: Power Probe 9630	**Notes:**		
Time Started: 1335			
Time Finished: 1340			
Total Depth Drilled: 5’			

Depth	Pid	▼	Lithology/Remarks	Sample ID/Loc
0			Silty gravel fill. Few inches of oil staining with petroleum	SB-10 0-1 ft
1			odor.	
2			Brown to black fine grained sand.	
3				
4				SB-10 4-5 ft
5			Boring terminated at 5 ft.	
6				
7				
8				
9				
10				
11				
12				
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14				
15				
16				
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BORING NUMBER IAB-1

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/11/14 **COMPLETED** 7/11/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 5 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							**CONCRETE** 1.0	
5		GP	IAB1-3-5*	80	SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) brown, moist, medium grained, no odor/staining 5.0 ▼	0.0
10		GP	IAB1-5-7* IAB1-7-9	100	SM		**Silty SAND** (75% Sand, 25% Silt) gray, fine grained, weak petroleum odor, wet 7.0	0.0
15		GP	IAB1-13-15	100	SM		**Silty SAND** (65% Sand, 35% Silt) gray, wet, fine to medium grained, no odor/staining 15.0	18.6 0.0
20		GP	IAB1-18-20	100	SP		**Clean SAND** (100% Sand) dark gray, wet, medium grained, no odor/staining 17.5	
					SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, no odor/staining 20.0	0.0
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-10

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/12/14 **COMPLETED** 7/12/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 8.5 ft
LOGGED BY C. Lee **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					SP		**Gravelly SAND** light brown, fine grained, moist, no odor/staining	
							2.0	
		GP		60			**Clean SAND** brown, fine grained, moist, no odor/staining	
5			IAB10-3-5*		SP			0.0
			IAB10-5-7*				6.0	0.0
					ML		**SILT** dark brown, mottled, moist, no odor/staining	
		GP	IAB10-7-9	90			7.0 **Silty SAND** brown, fine grained, moist to wet, no odor/staining	
10							▼	0.0
		GP		100	SM			
15			IAB10-13-15					0.0
		GP		100	SP		15.0 **Clean SAND** dark gray, fine to medium grained, wet, no odor/staining	
20			IAB10-18-20					0.0
							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-10A

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/18/14 **COMPLETED** 7/18/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING
LOGGED BY P. LeDoux **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
					SP		**Gravelly SAND** light brown, fine grained, moist, no odor/staining	
							2.0	
		GP	IAB10A-0-5	80			**Clean SAND** brown, fine grained, moist, no odor/staining	0.0
					SP			
5							5.0	
							Boring completed @ 5.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

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BORING NUMBER IAB-11

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/12/14 **COMPLETED** 7/12/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 12 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
		GP	IAB11-3-5*	80	SP		**Gravelly SAND** (70% Sand, 30% Gravel) gray, fine grained, dry, no odor/staining	0.0
5							4.0 **Clean SAND** (100% Sand) brown, medium grained, moist, no odor/staining	
		GP	IAB11-5-7*	60	SP			0.0
10			IAB11-7-9					0.0
		GP		100			12.0 ▼	
15			IAB11-13-15		SM		**Silty SAND** (85% Sand, 15% Silt) gray, fine grained, wet, no odor/staining 15.0	0.0
		GP	IAB11-18-20	100	SP		**Clean SAND** (100% Sand) dark gray, fine grained, wet, no odor/staining 19.0	0.0
20					SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining 20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-12

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/12/14 **COMPLETED** 7/12/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 8 ft
LOGGED BY C. Lee **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
		GP		70	SP		**Gravelly SAND** light brown, fine grained, moist, no odor/staining	
							3.0	
5			IAB12-3-5*		SP		**Clean SAND** brown, fine grained, moist, no odor/staining	0.0
			IAB12-5-7*					0.0
		GP	IAB12-7-9	100			▼	0.0
10							8.5	
					ML		**SILT** brown, wet, no odor/staining	
							10.5	
					SP		**Clean SAND** brown, fine grained, wet, no odor/staining	
		GP		100			12.0	
15			IAB12-13-15				**Silty SAND** dark brown, fine grained, wet, no odor/staining	0.0
					SM			
		GP		100				
20			IAB12-18-20					0.0
							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-13

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/12/14 **COMPLETED** 7/12/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9 ft
LOGGED BY C. Lee **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					GP		**GRAVEL** light brown, fine grained, dry, no odor/staining	
							1.0	
					SP		**Gravelly SAND** light brown, fine grained, moist, no odor/staining	
		GP		85				
			IAB13-3-5*					0.0
5							5.0	
			IAB13-5-7*		SP		**Clean SAND** black, fine grained, moist, no odor/staining	0.0
		GP		90				
			IAB13-7-9					0.0
10							▼ 9.5	
					SM		**Silty SAND** brown, fine grained, wet, no odor/staining	
		GP		100				
			IAB13-13-15					0.0
15					SP		**Clean SAND** black, fine grained, wet, no odor/staining	
							16.0	
		GP		100	SM		**Silty SAND** dark brown, fine grained, wet, no odor/staining	
			IAB13-18-20					0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-14

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/12/14 **COMPLETED** 7/12/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
		GP		55	SP		**Gravelly SAND** (70% Sand, 30% Gravel) gray, fine grained, dry, no odor/staining	
							2.5	
					SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) brown, medium grained, moist, no odor/staining	
5			IAB14-3-5*					0.0
			IAB14-5-7*				6.0	0.0
							6.5 **FILL** concrete and brick	
		GP	IAB14-7-9	70	SP		**Clean SAND** (100% Sand) gray, fine grained, wet, no odor/staining ▼	0.7
10								
		GP	IAB14-13-15	95				0.0
15								
		GP	IAB14-18-20	90			17.0	
					SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	0.4
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-14A

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/18/14 **COMPLETED** 7/18/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING
LOGGED BY P. LeDoux **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
		GP	IAB14A-0-5	80	SP		**Gravelly SAND** (70% Sand, 30% Gravel) gray, fine grained, dry, no odor/staining	0.0
							2.5	
					SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) brown, medium grained, moist, no odor/staining	
5							5.0	

Boring completed @ 5.0 feet

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

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BORING NUMBER IAB-15

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/12/14 **COMPLETED** 7/12/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9.5 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
		GP		60	SP		**Gravelly SAND** (70% Sand, 30% Gravel) gray, medium grained, dry, no odor/staining	
							3.0 **FILL** concrete, brick, and asphalt	
5								
		GP	IAB15-7-9*	65			6.0 **Clean SAND** (100% Sand) gray, fine grained, moist, no odor/staining	0.1
10							▼	
		GP	IAB15-9-11*	80	SP			0.0
			IAB15-11-13					0.0
			IAB15-13-15				14.5	0.2
15							**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
		GP	IAB15-18-20	100	SP			0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-91-10.0' was collected over the same interval as sample EB-41-10.0'.
▽ Water level at time of drilling.

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BORING NUMBER IAB-16

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/13/14 **COMPLETED** 7/13/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING 12 ft
LOGGED BY P. LeDoux **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
		GP		60	GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry to moist, no odor/staining 3.0	
5			IAB16-3-5*				**FILL** concrete 5.5	0.0
		GP	IAB16-5-7* IAB16-7-9	70	SP		**Clean SAND** (100% Sand) dark gray, medium grained, moist to wet, no odor/staining	0.0 0.2
10								
		GP	IAB16-13-15	75	SP		13.0 **Clean SAND** (100% Sand) dark gray, fine grained, wet, no odor/staining 14.5	0.5
15					SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
		GP	IAB16-18-20	100				
20							20.0 Boring completed @ 20.0 feet	0.0

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-17

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/13/14 **COMPLETED** 7/13/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 12 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (60% Gravel, 40% Sand) gray, medium grained, dry, no odor/staining	
							2.0	
		GP		65	SP		**Gravelly SAND** (60% Sand, 40% Gravel) brown, medium grained, moist, no odor/staining	
			IAB17-3-5*					0.0
5							4.5 5.0 **CONCRETE**	
			IAB17-5-7*				**Silty SAND** (85% Sand, 15% Silt) dark gray, fine grained, moist, no odor/staining	0.0
		GP		70	SM			
			IAB17-7-9					0.0
10								
							11.0	
					ML		**Sandy SILT** (90% Silt, 10% Sand) dark gray, wet, no odor/staining ▼	
		GP		90			13.0	
			IAB17-13-15		SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	0.0
15								
							16.0	
					SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
		GP		95				
			IAB17-18-20					0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

SLR SB LOG ANCHOR - 8TH AVE (2).GPJ GINT US.GDT 7/25/14

SLR
22118 20th Ave. SE, Suite G-202
Bothell, Washington 98021
Telephone: 425.402.8800
Fax: 425.402.8488

BORING NUMBER IAB-17A

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/18/14 **COMPLETED** 7/18/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING _____
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION	PID (ppm)
0							0.5	**ASPHALT**	
					GP		2.0	**Sandy GRAVEL** (60% Gravel, 40% Sand) gray, medium grained, dry, no odor/staining	
		GP	IAB17A-0-5	80	SP		4.5	**Gravelly SAND** (60% Sand, 40% Gravel) brown, medium grained, moist, no odor/staining	0.0
5							5.0	**CONCRETE**	
								Boring completed @ 5.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-81-2.5' collected at interval of sample EB-47-2.5'.

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BORING NUMBER IAB-18

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/13/14 **COMPLETED** 7/13/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
		GP		60	SP		**Gravelly SAND** (70% Sand, 30% Gravel) gray, fine grained, dry, no odor/staining	
							3.0	
5					SP		**Gravelly SAND** (85% Sand, 15% Gravel) gray, fine grained, dry, no odor/staining	
							6.0	
			IAB18-5-7*				6.5 **FILL** woody debris	0.5
		GP	IAB18-7-9*	90			**Silty SAND** (55% Sand, 45% Silt) dark gray, fine grained, wet, no odor/staining	0.7
10							▼	
			IAB18-9-11					0.0
		GP		95	SM			
			IAB18-13-15					0.0
15								
		GP		100			17.5	
			IAB18-18-20		SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-93-10.0' collected over the same interval as sample EB-5-10.0'.
▽ Water level at time of drilling.

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BORING NUMBER IAB-18A

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/18/14 **COMPLETED** 7/18/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9 ft
LOGGED BY P. LeDoux **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
		GP	IAB18A-0-7	80	SP		**Gravelly SAND** (70% Sand, 30% Gravel) gray, fine grained, dry, no odor/staining 3.0	
5					SP		**Gravelly SAND** (85% Sand, 15% Gravel) gray, fine grained, dry, no odor/staining 6.0	0.0
							6.5 **FILL** woody debris	
		GP		85	SM		**Silty SAND** (55% Sand, 45% Silt) dark gray, fine grained, wet, no odor/staining ▼	
10							10.0	

Boring completed @ 10.0 feet

REMARKS

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GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-19

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/13/14 **COMPLETED** 7/13/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
		GP		70			2.5	
					SP		**Gravelly SAND** (85% Sand, 15% Gravel) gray, fine grained, moist, no odor/staining	
5								
			IAB19-5-7*				6.0	0.0
							FILL concrete, brick, and asphalt	
		GP		90			7.0	
			IAB19-7-9*		SP		**Clean SAND** (100% Sand) dark gray, fine grained, moist, no odor/staining	0.4
10							9.0 ▼	
			IAB19-9-11				**Sandy SILT** (60% Silt, 40% Sand) gray, wet, no odor/staining	0.2
					ML			
		GP		90			13.5	
			IAB19-13-15				**Silty SAND** (70% Sand, 30% Silt) gray, fine grained, wet, no odor/ staining, wood chips @ 13'-14' and 17.75'	0.1
15					SM			
		GP		80			18.0	
			IAB19-18-20		SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	0.3
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
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GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-2

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/11/14 **COMPLETED** 7/11/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 7.5 ft
LOGGED BY C. Lee **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					GP		**Sandy GRAVEL** brown, fine grained, moist, no odor/staining	
							1.0	
							Clean SAND dark brown, fine grained, moist, no odor/staining	
		GP		60	SP			
5			IAB2-3-5*					0.0
							5.5	
			IAB2-5-7*		GP		6.0 **Sandy GRAVEL** brown, fine grained, moist, no odor/staining	2.0
							Silty SAND brown, fine grained, moist to wet, no odor/staining	
		GP	IAB2-7-9	65			▼	1.6
10								
		GP		65	SM			
15			IAB2-13-15					0.1
							17.0	
		GP		70			**Clean SAND** dark gray, fine to medium grained, wet, no odor/staining	
					SP			
20			IAB2-18-20					0.0
							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
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GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-20

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/13/14 **COMPLETED** 7/13/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
							2.0	
5		GP		70	SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
			IAB20-5-7*				6.0	0.1
					SP		**Gravelly SAND with debris** (45% Sand, 15% gravel, 40% Debris) black, fine grained, moist, woody debris with strong creosote odor @ 7' bgs	
10		GP	IAB20-7-9*	70			7.5	
					SP-SM		**SAND with silty fines** (90% Sand, 10% Silt) gray, fine to medium grained, wet, no odor/staining	0.1
							9.0 ▼	
					SM		**Silty SAND** (55% Sand, 45% Silt) gray, fine grained, wet, no odor/staining	
			IAB20-9-11					0.0
15		GP	IAB20-13-15	90				0.0
							18.0	
					SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet. no odor/staining	
20		GP	IAB20-18-20	95			20.0	0.0
							Boring completed @ 20.0 feet	

REMARKS

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GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-21

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/13/14 **COMPLETED** 7/13/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
							2.0	
		GP		60	SP		**Gravelly SAND** (80% Sand, 15% Gravel, 5% Silt) light brown, fine grained, moist, no odor/staining	
5								
			IAB21-5-7*					0.0
		GP		100	SP		7.0 **Clean SAND** (100% Sand) dark gray, fine grained, moist, no odor/staining	
			IAB21-7-9*					0.2
10					SM		8.5 ▼ **Silty SAND** (55% Sand, 45% Silt) gray, fine grained, wet, no odor/staining	
			IAB21-9-11				10.5	0.4
					SM		11.5 **Silty SAND with gravel** (70% Sand, 15% Silt, 15% Gravel) brown, fine grained, moist, no odor/staining	
		GP		100	SM		**Silty SAND with organics** (50% Sand, 40% Silt, 10% organics) gray, fine grained, wet, no odor/staining, wood chips @ 13'-14' with trace roots	
15			IAB21-13-15					0.0
							16.0	
					SM		**Silty SAND** (85% Sand, 15% Silt) gray, fine grained, wet, no odor/staining	
		GP		90			18.0	
			IAB21-18-20		SP		**Clean SAND** (100% Sand) dark gray, fine grained, wet, no odor/staining	0.2
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-22

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/13/14 **COMPLETED** 7/13/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
							2.0	
		GP		65	SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
5							4.5	
					SP		**Woody SAND** (75% Sand, 25% Wood) black, fine grained, moist, weak creosote odor, wood chips throughout	
							6.0	
			IAB22-5-7*		SP		**SAND with debris** (85% Sand, 15% Debris) dark gray, fine grained, moist, minor brick fragments, no odor/staining	0.4
		GP	IAB22-7-9*	80			8.0	
					ML		**Sandy SILT** (85% Silt, 15% Sand) gray, wet, no odor/staining ▼	0.0
10							9.5	
			IAB22-9-11		SM		**Silty SAND** (60% Sand, 40% Silt) gray, fine grained, wet, no odor/staining	0.0
		GP		85				
			IAB22-13-15					0.0
15							14.5	
					SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) gray, fine grained, wet, no odor/staining	
							17.0	
		GP		90	SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
			IAB22-18-20					0.2
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
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GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-22A

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/18/14 **COMPLETED** 7/18/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9 ft
LOGGED BY P. LeDoux **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION	PID (ppm)
0							0.5	**ASPHALT**	
					GP		2.0	**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
		GP	IAB22A-0-7	85	SP		4.5	**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	0.0
5					SP		6.0	**Woody SAND** (75% Sand, 25% Wood) black, fine grained, moist, weak creosote odor, wood chips throughout	
		GP		90	SP		8.0	**SAND with debris** (85% Sand, 15% Debris) dark gray, fine grained, moist, minor brick fragments, no odor/staining	
					ML		9.5 ▼	**Sandy SILT** (85% Silt, 15% Sand) gray, wet, no odor/staining	
10					SM		10.0	**Silty SAND** (60% Sand, 40% Silt) gray, fine grained, wet, no odor/staining	
								Boring completed @ 10.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-23

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/14/14 **COMPLETED** 7/14/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/ staining 2.0	
		GP		70	SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining 4.5	
5					SP		**Gravelly SAND** (85% San, 15% Gravel) black, fine grained, moist, weak creosote odor 6.0	
		GP	IAB23-5-7* IAB23-7-9*	85	SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) gray, fine grained, moist, no odor/staining 8.5	0.4 0.0
10					ML		▼ **Sandy SILT** (55% Silt, 45% Sand) gray, wet, weak organic odor, no staining 11.0	0.0
		GP	IAB23-9-11 IAB23-13-15	100	SM		**Silty SAND** (70% Sand, 30% Silt) gray, fine grained, wet, no odor/staining 12.0	
15					SM		**Silty SAND with organics** (50% Sand, 45% Silt, 5% Organics) gray, fine grained, wet, wood chips @ 14'-16' and 17' bgs 17.5	0.2
		GP	IAB23-18-20	100	SP		**SAND with organics** (95% Sand, 5% Organics) dark gray, fine to medium grained, wet, no odor/staining, wood chips throughout 20.0	0.1
20							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-23A

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/18/14 **COMPLETED** 7/18/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/ staining 2.0	
		GP	IAB23A-0-7	80	SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining 4.5	0.1
5					SP		**Gravelly SAND** (85% San, 15% Gravel) black, fine grained, moist, weak creosote odor 6.0	
		GP		90	SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) gray, fine grained, moist, no odor/staining 8.5	
10					ML		▼ **Sandy SILT** (55% Silt, 45% Sand) gray, wet, weak organic odor, no staining 10.0	

Boring completed @ 10.0 feet

REMARKS

PID = Photoionization detector.
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GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-24

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/13/14 **COMPLETED** 7/13/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 10 ft
LOGGED BY P. LeDoux **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
							2.0	
		GP		70	SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
							4.0	
5					SP		**Clean SAND** (100% Sand) black, fine grained, moist, weak creosote odor	
			IAB24-5-7*					0.0
		GP		85			6.5	
					GP		7.5 **Sandy GRAVEL with silt** (80% Gravel, 15% Sand, 5% Silt) gray, fine grained, dry, no odor/staining	
			IAB24-7-9*		SP-SM		8.5 **SAND with silty fines** (95% Sand, 5% Silt) brown, fine grained, moist, no odor/staining	0.4
10					SM		**Silty SAND** (55% Sand, 45% Silt) gray, fine grained, moist to wet, no odor/staining ▼	0.0
			IAB24-9-11					
		GP		80				0.0
			IAB24-13-15					
15								
		GP		95				
			IAB24-18-20					
20					SP		19.0 **Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	0.3
							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

SLR SB LOG ANCHOR - 8TH AVE (2).GPJ GINT US.GDT 7/25/14

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BORING NUMBER IAB-25

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/14/14 **COMPLETED** 7/14/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 12 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
							1.5	
					SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
		GP		80			2.5	
					SP		**SAND with organics** (90% Sand, 10% Organics) gray, fine grained, moist, no odor/staining, minor roots	
							3.5	
5					SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) black, fine grained, weak creosote odor	
			IAB25-5-7*					0.2
		GP	IAB25-7-9*	85				0.0
10							9.5	
					SP		**Clean SAND** (100% Sand) gray, fine to medium grained, moist, no odor/staining	0.0
			IAB25-9-11				11.0	
					SM		**Silty SAND** (70% Sand, 30% Silt) gray, fine grained, wet, no odor/staining	
		GP		85			▼	
15			IAB25-13-15					0.3
							17.0	
		GP		100	SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) dark gray, fine to medium grained, wet, no odor/staining	
			IAB25-18-20					0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-91-10.0' was collected over the same interval as sample EB-41-10.0'.
▽ Water level at time of drilling.

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BORING NUMBER IAB-25A

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/22/14 **COMPLETED** 7/22/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING
LOGGED BY P. LeDoux **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION	PID (ppm)
0							0.5	**ASPHALT**	
					GP		1.5	**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
					SP		2.5	**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
		GP	IAB25A-2-4	80	SP		3.5	**SAND with organics** (90% Sand, 10% Organics) gray, fine grained, moist, no odor/staining, minor roots	0.0
5					SP-SM			**SAND with silty fines** (95% Sand, 5% Silt) black, fine grained, weak creosote odor	0.1
			IAB25A-4-6						
		GP	IAB25A-6-8	100					0.0
							9.5		
10					SP		10.0	**Clean SAND** (100% Sand) gray, fine to medium grained, moist, no odor/staining	
								Boring completed @ 10.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

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BORING NUMBER IAB-25B

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/22/14 **COMPLETED** 7/22/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING
LOGGED BY P. LeDoux **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION	PID (ppm)
0							0.5	**ASPHALT**	
					GP		1.5	**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
					SP		2.5	**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
		GP	IAB25B-2-4	90	SP		3.5	**SAND with organics** (90% Sand, 10% Organics) gray, fine grained, moist, no odor/staining, minor roots	0.0
5					SP-SM			**SAND with silty fines** (95% Sand, 5% Silt) black, fine grained, weak creosote odor	0.0
		GP	IAB25B-4-6 IAB25B-6-8	85					0.0
							9.5		
10					SP		10.0	**Clean SAND** (100% Sand) gray, fine to medium grained, moist, no odor/staining	
								Boring completed @ 10.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

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BORING NUMBER IAB-26

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/14/14 **COMPLETED** 7/14/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 11 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
							2.0	
		GP		80	SM		**Silty SAND with organics** (55% Sand, 40% Silt, 5% Organics) gray, fine grained, weak creosote odor, small wood chips throughout	
							4.0	
5					SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) black, fine to medium grained, moist, weak creosote odor	
			IAB26-5-7*					0.2
		GP	IAB26-7-9*	70	SP		7.0 **Clean SAND** (100% Sand) dark gray, fine to medium grained, moist, no odor/staining	0.0
							8.5	
10					SM		**Silty SAND with organics** (55% Sand, 40% Silt, 5% Organics) dark gray, fine grained, moist to wet, weak organic odor, wood chips throughout	0.0
			IAB26-9-11				▼	
		GP		80				0.1
15			IAB26-13-15					
							16.0	
		GP		80	SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
			IAB26-18-20					0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-81-2.5' collected at interval of sample EB-47-2.5'.
▽ Water level at time of drilling.

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BORING NUMBER IAB-27

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/14/14 **COMPLETED** 7/14/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 11 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) brown, fine grained, dry, no odor/staining	
							2.0	
		GP		70	SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
							4.0	
5					SM		**Silty SAND** (85% Sand, 15% Silt) black, fine to medium grained, moist, no odor, iron oxide staining	
							6.0	
			IAB27-5-7*				**Clean SAND** (100% Sand) dark gray, fine to medium grained, moist, no odor/staining	0.0
			IAB27-7-9*		SP			0.2
		GP	IAB101-7-9*	95			8.0	
							Sandy SILT (55% Silt, 45% Sand) gray, fine grained, moist, no odor/staining	0.2
10					ML			
			IAB27-9-11				▼	0.0
							12.0	
		GP		80	SM		**Silty SAND** (55% Sand, 45% Silt) gray, fine grained, wet, no odor/staining	
			IAB27-13-15					0.3
15							14.5	
					SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
		GP		80				
			IAB27-18-20					0.1
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-93-10.0' collected over the same interval as sample EB-5-10.0'.
▽ Water level at time of drilling.

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BORING NUMBER IAB-28

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/14/14 **COMPLETED** 7/14/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 11 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
							2.0	
		GP		80	SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
							4.0	
5					SP		**SAND with debris** (95% Sand, 5% Debris) black, fine grained, moist, weak creosote odor, trace brick fragments throughout	
			IAB28-5-7*					0.4
		GP	IAB28-7-9*	90			6.5	
					SP-SM		7.5 **SAND with silty fines** (95% Sand, 5% Silt) gray, fine to medium grained, moist, no odor/staining	0.0
10			IAB102-7-9*				**Silty SAND with organics** (55% Sand, 40% Silt, 5% Organics) gray, fine grained, moist to wet, no odor/staining, trace wood chips throughout	0.2
			IAB28-9-11		SM		▼	0.2
		GP		100				
15			IAB28-13-15				14.5	0.0
					SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
		GP		100				
20			IAB28-18-20				20.0	0.0
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-28A

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/18/14 **COMPLETED** 7/18/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING
LOGGED BY P. LeDoux **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION	PID (ppm)
0							0.5	**ASPHALT**	
					GP		2.0	**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
		GP	IAB28A-0-7	80	SP		4.0	**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	0.0
5					SP		6.5	**SAND with debris** (95% Sand, 5% Debris) black, fine grained, moist, weak creosote odor, trace brick fragments throughout	
		GP		90	SP-SM		7.5	**SAND with silty fines** (95% Sand, 5% Silt) gray, fine to medium grained, moist, no odor/staining	
10					SM		10.0	**Silty SAND with organics** (55% Sand, 40% Silt, 5% Organics) gray, fine grained, moist to wet, no odor/staining, trace wood chips throughout	

Boring completed @ 10.0 feet

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

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BORING NUMBER IAB-29

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/14/14 **COMPLETED** 7/14/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 10 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
							2.0	
		GP		85	SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
							4.0	
5					SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) black, fine grained, moist, weak creosote odor	0.3
			IAB29-5-7*					
			IAB103-5-7*					0.2
		GP		85	SP		**Clean SAND** (100% Sand) gray, fine to medium grained, moist, no odor/staining	
			IAB29-7-9*					0.0
10							8.5	
					SM		**Silty SAND** (55% Sand, 45% Silt) gray, fine grained, wet, no odor/staining	
			IAB29-9-11				▼	0.0
		GP		80				
			IAB29-13-15					0.2
15							14.5	
					SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
		GP		70				
			IAB29-18-20					0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-3

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/11/14 **COMPLETED** 7/11/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 5 ft
LOGGED BY C. Lee **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
							1.0 **CONCRETE**	
					GP		2.0 **Sandy GRAVEL** light brown, fine grained, moist, no odor/staining	
		GP		80	SP-SM		3.5 **Clean SAND** brown, fine grained, moist, no odor/staining	
5			IAB3-3-5*		SM		▼ 5.5 **Silty SAND** brown, fine grained, moist to wet, no odor/staining	0.0
			IAB3-5-7*				**SILT** grayish brown, wet, no odor/staining	0.0
		GP	IAB3-7-9	85	ML		9.0	0.0
10							**Sandy SILT** brown, fine grained, wet, no odor/staining	
					ML		12.0	
		GP		100	SP		14.0 **Clean SAND** brown, fine grained, wet, no odor/staining	
			IAB3-13-15				**WOOD**	0.0
15							15.0	
					SP		17.5 **Clean SAND** brown, fine grained, wet, no odor/staining	
		GP		100	SP		**Clean SAND** dark gray, fine to medium grained, wet, no odor/staining	
20			IAB3-18-20				20.0	0.0
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-30

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/14/14 **COMPLETED** 7/14/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 10 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
		GP		85	GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
							2.5	
					SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
							4.0	
5					SP-SM		**SAND with silty fines** (90% Sand, 10% Silt) dark gray, fine grained, moist, no odor/staining	
							6.0	
		GP	IAB30-5-7*	85	SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, moist, no odor/staining	0.0
			IAB30-7-9*					0.1
			IAB104-7-9*				8.0	
10					SM		**Silty SAND** (60% Sand, 40% Silt) gray, fine grained, wet, no ofor/staining	0.1
			IAB30-9-11				▼	0.2
		GP		90				
			IAB30-13-15					0.0
15							14.5	
					ML		**Sandy SILT** (60% Silt, 40% Sand) gray, fine grained, wet, no odor/staining	
							16.0	
		GP		85	SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
			IAB30-18-20					0.7
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

SLR SB LOG ANCHOR - 8TH AVE (2).GPJ GINT US.GDT 7/25/14

SLR
22118 20th Ave. SE, Suite G-202
Bothell, Washington 98021
Telephone: 425.402.8800
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BORING NUMBER IAB-31

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/14/14 **COMPLETED** 7/14/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 10 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
							2.0	
		GP		75	SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
5							4.5	
					SM		**Silty SAND** (55% Sand, 45% Silt) dark gray, fine grained, moist, no odor/staining	
							5.5	
					GP		**Gravelly SAND** (55% Gravel, 45% Sand) gray, fine grained sand, well graded gravel, moist, no odor/staining	
		GP	IAB31-7-9*	80			7.5	
					SP-SM		8.5 **SAND with silty fines** (95% Sand, 5% Silt) dark gray, fine to medium grained, moist, no odor/staining	0.2
			IAB31-9-11*		SM		**Silty SAND** (55% Sand, 45% Silt) gray, fine grained, wet, no odor/staining	0.0
10							▼	0.0
			IAB105-9-11*				11.5	
					SM		**Silty SAND** (70% Sand, 30% Silt) dark gray, wet, no odor/staining	0.7
		GP	IAB31-11-13	95				
			IAB31-13-15					0.0
15								
							16.5	
					SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
		GP		90				
			IAB31-18-20					0.3
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

SLR SB LOG ANCHOR - 8TH AVE (2).GPJ GINT US.GDT 7/25/14

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BORING NUMBER IAB-32

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/14/14 **COMPLETED** 7/14/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 10 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
		GP		75			2.5	
					SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
5							4.0	
					SM		**Silty SAND with gravel** (80% Sand, 15% silt, 5% Gravel) gray, fine grained, dry, no odor/staining	
							7.0	
		GP	IAB32-7-9*	85			**Silty SAND** (70% Sand, 30% Silt) gray, fine grained, moist to wet, no odor/staining	0.0
10							▼	
			IAB32-9-11*		SM			0.0
		GP	IAB32-11-13	80				0.4
			IAB32-13-15					0.3
15							14.5	
					SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
		GP		100				
			IAB32-18-20					0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

SLR SB LOG ANCHOR - 8TH AVE (2).GPJ GINT US.GDT 7/25/14

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BORING NUMBER IAB-32A

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/18/14 **COMPLETED** 7/18/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING _____
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION	PID (ppm)
0							0.5	**ASPHALT**	
		GP		65	GP		2.5	**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
					SP		4.0	**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
5			IAB32A-0-9		SM		7.0	**Silty SAND with gravel** (80% Sand, 15% silt, 5% Gravel) gray, fine grained, dry, no odor/staining	0.0
		GP		90	SM		10.0	**Silty SAND** (70% Sand, 30% Silt) gray, fine grained, moist to wet, no odor/staining	
10								Boring completed @ 10.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

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BORING NUMBER IAB-33

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/14/14 **COMPLETED** 7/14/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
		GP		80			2.0	
					SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
5							4.0	
					SP		**Gravelly SAND** (80% Sand, 20% Gravel) black, fine grained, moist, no odor/staining	
							6.0	
					SP		**Clean SAND** (100% Sand) gray, fine to medium grained, moist, no odor/staining	
		GP	IAB33-7-9*	80			7.5	
					SM		**Silty SAND** (55% Sand, 45% Silt) gray to reddish brown, fine grained, wet, no odor	0.2
10			IAB33-9-11*				▼	0.0
			IAB106-9-11*					0.0
		GP	IAB33-11-13	75				0.4
15			IAB33-13-15				14.0	0.0
					SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
		GP	IAB33-18-20	80				0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

SLR SB LOG ANCHOR - 8TH AVE (2).GPJ GINT US.GDT 7/25/14

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BORING NUMBER IAB-33A

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/18/14 **COMPLETED** 7/18/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 9 ft
LOGGED BY P. LeDoux **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining 2.0	
		GP		70	SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining 4.0	
5			IAB33A-0-9		SP		**Gravelly SAND** (80% Sand, 20% Gravel) black, fine grained, moist, no odor/staining 6.0	0.0
					SP		**Clean SAND** (100% Sand) gray, fine to medium grained, moist, no odor/staining 7.5	
		GP		100	SM		**Silty SAND** (55% Sand, 45% Silt) gray to reddish brown, fine grained, wet, no odor ▼	
10							10.0	

Boring completed @ 10.0 feet

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-34

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/15/14 **COMPLETED** 7/15/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 11 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
		GP		95			2.0	
					SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
							3.5	
					SP		**Gravelly SAND** (90% Sand, 10% Gravel) black, fine grained, moist, no odor/staining	
5							5.0	
		GP		95	SM		**Silty SAND with gravel** (50% Sand, 35% Silt, 15% Gravel) dark gray, fine grained, moist, weak creosote odor	
			IAB34-7-9*				7.0	1.9
			IAB107-7-9*		SM		**Silty SAND** (85% Sand, 15% Silt) brown, fine grained, moist, no odor/staining	1.9
10		GP	IAB34-9-11*	95			10.0	0.0
					SM		**Silty SAND** (55% Sand, 45% Silt) brown, fine grained, moist to wet, no odor/staining ▼	
			IAB34-11-13					0.3
		GP	IAB34-13-15	95	SM		13.0 **Silty SAND** (85% Sand, 15% Silt) dark gray, fine grained, wet, no odor/staining	0.4
15							16.0	
		GP		95	SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, not odor/staining	
			IAB34-18-20					0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-91-10.0' was collected over the same interval as sample EB-41-10.0'.
▽ Water level at time of drilling.

SLR SB LOG ANCHOR - 8TH AVE (2).GPJ GINT US.GDT 7/25/14

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BORING NUMBER IAB-35

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/17/14 **COMPLETED** 7/17/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 12.5 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining 1.5	
		GP		100	SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, dry, no odor/staining 3.5	
					SP		**Gravelly SAND** (70% Sand, 30% Gravel) black, fine grained, moist, no odor 5.0	
5							5.5 **CONCRETE**	
		GP	IAB35-7-9*	40	SM		**Silty SAND** (85% Sand, 15% Silt) brown, fine grained, moist, no odor/staining	0.0
			IAB110-7-9*					0.0
10		GP	IAB35-9-11*	90				0.0
			IAB35-11-13					0.0
		GP	IAB35-13-15	100	SM		12.5 ▼ **Silty SAND** (55% Sand, 45% Silt) gray, fine grained, wet, no odor/staining 14.0	
15					SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) reddish brown to black, fine to medium grained, wet, no odor/staining 15.5	0.0
		GP	IAB35-18-20	95	SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	0.2
20							20.0 Borinf completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

SLR SB LOG ANCHOR - 8TH AVE (2).GPJ GINT US.GDT 7/25/14

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BORING NUMBER IAB-35A

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/22/14 **COMPLETED** 7/22/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING _____
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION	PID (ppm)
0							0.5	**ASPHALT**	
			IAB35A-0-9		GP		1.5	**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	0.1
		GP	IAB35A-2-4	75	SP		3.5	**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, dry, no odor/staining	0.0
5					SP		5.0	**Gravelly SAND** (70% Sand, 30% Gravel) black, fine grained, moist, no odor	
			IAB35A-4-6				5.5	**CONCRETE**	0.3
		GP	IAB35A-6-8	90	SM			**Silty SAND** (85% Sand, 15% Silt) brown, fine grained, moist, no odor/staining	0.1
10							10.0		

Boring completed @ 10.0 feet

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

SLR
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BORING NUMBER IAB-36

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/15/14 **COMPLETED** 7/15/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 12 ft
LOGGED BY C. Lee **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** light brown, fine to medium grained, moist, no odor/staining 1.5	
5		GP		100	SP		**Clean SAND** light brown to dark brown, fine grained, moist, moderate to weak creosote odor @ 3.5'-4.5' bgs 5.5	
10		GP		100	SM		**Silty SAND** dark brown, fine grained, moist, weak creosote odor, cobble fragments @ 7' bgs 7.0	
					SP		7.5 **Clean SAND** light brown, fine grained, moist, no odor/staining	
					SM		**Silty SAND** brown, fine grained, moist, no odor/staining 8.5	
					SP		**Clean SAND** brown, fine grained, moist, no odor/staining, fine gravel @ 11' bgs 11.0	
15		GP		100	ML		11.5 **SILT** gray, moist, no odor/staining	
					SM		▼ **Silty SAND** grayish brown, fine grained, moist to wet, no odor/staining 15.0	
20		GP	IAB36-16-18*	100	SP		**Clean SAND** dark gray, fine to medium grained, wet, no odor/staining	0.1
			IAB36-18-20*					0.0
			IAB36-20-22					0.0

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-81-2.5' collected at interval of sample EB-47-2.5'.
▽ Water level at time of drilling.

(Continued Next Page)

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Fax: 425.402.8488

BORING NUMBER IAB-36

CLIENT Anchor QEA, LLC **PROJECT NAME** 8th Avenue Terminals

PROJECT NUMBER 101.00902.00003 **PROJECT LOCATION** 7400 8th Avenue South, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
		GP	IAB36-22-24	100	SP		**Clean SAND** dark gray, fine to medium grained, wet, no odor/staining *(continued)*	0.0
							24.0 Boring completed @ 24.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-81-2.5' collected at interval of sample EB-47-2.5'.
▽ Water level at time of drilling.

SLR
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BORING NUMBER IAB-37

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/15/14 **COMPLETED** 7/15/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 14 ft
LOGGED BY C. Lee **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** light brown, fine to coarse grained, moist, no odor/staining	
							2.0	
		GP		90	SP		**Clean SAND** brown to dark brown, fine grained, moderate to strong creosote odor, woody debris @ 6.5' bgs	2.5
5								
							6.5	
							7.0 **FILL** concrete	42.0
		GP		100	SP		**Clean SAND** black, fine grained, moist, strong creosote-like odor and product @ 8' bgs grading to moderate	166
10								11.7
		GP		90	SP			79.2
							13.0	
					SM		**Silty SAND** brown, fine grained, moist to wet, moderate creosote odor/sheen on wet soil ▼	45.0
15								
		GP	IAB37-16-18*	100				11.0
			IAB108-16-18*					11.0
			IAB37-18-20*				18.0	
					SP		**Clean SAND** dark brown to black, fine to medium grained, wet, moderate creosote odor/sheen on wet soil	25.0
20								
			IAB37-20-22					13.0

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-93-10.0' collected over the same interval as sample EB-5-10.0'.
▽ Water level at time of drilling.

(Continued Next Page)

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BORING NUMBER IAB-37

CLIENT Anchor QEA, LLC **PROJECT NAME** 8th Avenue Terminals

PROJECT NUMBER 101.00902.00003 **PROJECT LOCATION** 7400 8th Avenue South, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
		GP	IAB37-22-24	90	SP		**Clean SAND** dark brown to black, fine to medium grained, wet, moderate creosote odor/sheen on wet soil *(continued)*	11.0
24.0							Boring completed @ 24.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-93-10.0' collected over the same interval as sample EB-5-10.0'.
▽ Water level at time of drilling.

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BORING NUMBER IAB-37A

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/22/14 **COMPLETED** 7/22/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING _____
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION	PID (ppm)
0							0.5	**ASPHALT**	
					GP		2.0	**Sandy GRAVEL** light brown, fine to coarse grained, moist, no odor/staining	
5		GP	IAB37A-2-4	80	SP			**Clean SAND** brown to dark brown, fine grained, moderate to strong creosote odor, woody debris @ 6.5' bgs	0.0
		GP	IAB37A-4-6 IAB37A-6-8	95			6.5 7.0	**FILL** concrete	0.0
10					SP		10.0	**Clean SAND** black, fine grained, moist,moderate creosote-like odor @ 8' bgs grading to weak	0.0
								Boring completed @ 10.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

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Bothell, Washington 98021
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BORING NUMBER IAB-37B

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/22/14 **COMPLETED** 7/22/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING _____
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION	PID (ppm)
0							0.5	**ASPHALT**	
					GP		2.0	**Sandy GRAVEL** light brown, fine to coarse grained, moist, no odor/staining	
		GP	IAB37B-2-4	90	SP			**Clean SAND** brown to dark brown, fine grained, moderate to strong creosote odor, woody debris @ 6.5' bgs	0.2
5									
			IAB37B-4-6						0.2
			IAB37B-6-8				6.5		
							7.0	**FILL** concrete	0.0
		GP		100	SP			**Clean SAND** black, fine grained, moist,moderate creosote-like odor @ 8' bgs grading to weak	
10							10.0		

Boring completed @ 10.0 feet

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

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BORING NUMBER IAB-37D

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/22/14 **COMPLETED** 7/22/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 11 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
							2.0	
5		GP		90			**Sandy FILL** black, fine grained, moist, strong creosote odor @ 6' bgs above concrete slab	
							6.0	
							6.5 **CONCRETE**	
10		GP		75	SP		**Clean SAND** (100% Sand) brown, fine to medium grained, wood chips @ 14' bgs, sand has "gummy" consistancy and strong creosote odor@ 9' bgs	
							▼	
15		GP		70			12.5	
					SM		**Silty SAND** (55% Sand, 45% Silt) gray, fine grained, wet, no odor/staining	
							14.5	
20		GP		100	SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

(Continued Next Page)

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BORING NUMBER IAB-37D

CLIENT Anchor QEA, LLC **PROJECT NAME** 8th Avenue Terminals

PROJECT NUMBER 101.00902.00003 **PROJECT LOCATION** 7400 8th Avenue South, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
		GP		45	SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining *(continued)*	
25		GP		100				
		GP	IAB37D-28-30	100				0.0
30								
		GP	IAB37D-33-35	100				0.0
35								
		GP	IAB37D-38-40	90				0.0
40								
		GP		100				
45		GP	IAB37D-43-45	100				0.0

REMARKS

PID = Photoionization detector.
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GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

(Continued Next Page)

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BORING NUMBER IAB-37D

CLIENT Anchor QEA, LLC **PROJECT NAME** 8th Avenue Terminals

PROJECT NUMBER 101.00902.00003 **PROJECT LOCATION** 7400 8th Avenue South, Seattle, WA

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
50		GP	IAB37D-48-50	100	SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining *(continued)*	0.0
							50.0 Boring completed @ 50.0 feet	

REMARKS

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GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-38

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/16/14 **COMPLETED** 7/16/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 12 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
							2.0	
		GP		70	SP		**Gravelly SAND** (75% Sand, 25% Gravel) black, fine to medium grained, dry, no odor/staining	
							3.5	
							4.0 **ASPHALT**	
5					SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
							7.0	
		GP	IAB38-7-9*	70			7.5 **CONCRETE**	
			IAB38-9-11*				**Silty SAND** (65% Sand, 35% Silt) dark gray, fine grained, moist to wet, no odor/staining	0.2
10								0.0
			IAB108-9-11*					0.0
					SM			
			IAB38-11-13				▼	0.4
		GP		80				
			IAB38-13-15					0.0
15							14.5	
							Clean SAND (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
		GP		95	SP			
			IAB38-18-20					0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-39

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/22/14 **COMPLETED** 7/22/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 12 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining 1.5	
		GP		60			**FILL** sandy matrix with brick, metal, and concrete, black, weak creosote odor, well indurated 4.5	
5							5.0 **CONCRETE**	
		GP	IAB39-7-9*	65	SP		**Clean SAND** (100% Sand) brown, fine to medium grained, moist, no odor/staining	0.0
10								0.0
		GP	IAB39-9-11* IAB39-11-13	80	SM		11.5 ▼ **Silty SAND** (60% Sand, 40% Silt) gray, fine grained, moist to wet, no odor/staining	0.1
15			IAB39-13-15				14.5	0.0
		GP		100	SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
20			IAB39-18-20				20.0	0.0
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-4

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/11/14 **COMPLETED** 7/11/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 5.5 ft
LOGGED BY P. LeDoux **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							**CONCRETE**	
							1.5	
		GP		60	SP		**Clean SAND** brown, fine grained, moist, no odor/staining	
5			IAB4-3-5*				5.0	0.0
					GP		5.5 ▼ **Sandy GRAVEL** gray, moist, fine grained, no odor/staining	
			IAB4-5-7*		SP		**Clean SAND** gray, fine grained, wet, no odor/staining	0.0
		GP		85			7.0	
			IAB4-7-9		ML		**SILT** gray, wet, no odor/staining	0.0
10							10.5	
		GP		95	SP		**Clean SAND** gray, fine grained, wet, no odor/staining	
			IAB4-13-15					0.0
15								
		GP		100			18.0	
			IAB4-18-20		SP		**Clean SAND** dark gray, fine to medium grained, wet, no odor/staining	0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-40

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/17/14 **COMPLETED** 7/17/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push/Hollow-Stem Auger
▼ **AT TIME OF DRILLING** 10 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining 1.5	
		GP		80	SP		**Gravelly SAND** (70% Sand, 30% Gravel) black, fine grained, moist, no odor/staining 3.0	
5					SP		**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining 5.0	
							5.5 **CONCRETE**	
		GP	IAB40-7-9*	80	SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) gray, fine grained, moist, no odor/staining	0.0
10							10.0 ▼	
			IAB40-9-11*		SM		**Silty SAND** (55% Sand, 45% Silt) brown, fine grained, wet, no odor/staining 11.0	0.0
		GP	IAB40-11-13	90	SP-SM		**SAND with silty fines** (90% Sand, 10% Silt) black, fine to medium grained, wet, no odor, iron oxide staining	0.0
15			IAB40-13-15				15.0	0.0
		GP	IAB40-18-20	95	SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-40A

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/22/14 **COMPLETED** 7/22/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING _____
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG		MATERIAL DESCRIPTION	PID (ppm)
0							0.5	**ASPHALT**	
		GP	IAB40A-0-9	75	GP		1.5	**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	0.0
		GP	IAB40A-2-4		SP		3.0	**Gravelly SAND** (70% Sand, 30% Gravel) black, fine grained, moist, no odor/staining	0.2
5					SP		5.0	**Gravelly SAND** (85% Sand, 15% Gravel) brown, fine grained, moist, no odor/staining	
		GP	IAB40A-4-6	90			5.5	**CONCRETE**	0.0
		GP	IAB40A-6-8		SP-SM			**SAND with silty fines** (95% Sand, 5% Silt) gray, fine grained, moist, no odor/staining	0.0
10							10.0		

Boring completed @ 10.0 feet

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

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BORING NUMBER IAB-41

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/18/14 **COMPLETED** 7/18/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 10 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **ASPHALT**	
					GP		**Sandy GRAVEL** (55% Gravel, 45% Sand) gray, fine grained, dry, no odor/staining	
							2.0	
5		GP		80			**FILL** sand with silt matrix containing brick, concrete, and metal, weak creosote odor @ 3' bgs	
							5.5	
							CONCRETE	
							6.5	
10		GP	IAB41-7-9*	80	SM		**Silty SAND** (60% Sand, 40% Silt) brown, fine grained, moist to wet, no odor/staining	0.0
							▼ 10.5	0.2
15		GP	IAB41-9-11* IAB41-11-13 IAB41-13-15	95	SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, no odor/staining	0.0 0.0
20		GP	IAB41-18-20	100			20.0	0.1
							boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-42

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/18/14 **COMPLETED** 7/18/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 7 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0					SP		**Gravelly SAND** (75% Sand, 25% Gravel) brown, fine grained, dry, no odor/staining	
							1.0	
							1.5 **FILL** concrete	
		GP		60	SM		**Silty SAND** (85% Sand, 15% Silt) brown, fine grained, dry to moist, no odor/staining	
5			IAB42-3-5*					0.0
			IAB42-5-7*				6.0	0.0
		GP		80			**Silty SAND with gravel** (50% Sand, 45% Silt, 5% Gravel) gray, fine grained, moist to wet, ▼ no odor/staining	
10			IAB42-7-9		SM			0.0
		GP		70			13.0	
15			IAB42-13-15				**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	0.1
		GP		100	SP			
20			IAB42-18-20				20.0	0.0
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

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BORING NUMBER IAB-5

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/11/14 **COMPLETED** 7/11/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 5 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
							CONCRETE 1.0	
		GP		55	SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) brown, fine grained, moist, no odor/staining	
5			IAB5-3-5*				▼	0.0
			IAB5-5-7*				6.0	0.0
		GP	IAB5-7-9	90	ML		**Sandy SILT** (90% Silt, 10% Sand) brown, wet, no odor/staining	0.0
10								
							11.0	
		GP		75	SM		**Silty SAND** (60% Sand, 40% Silt) brown, fine grained, wet, no odor/staining 13.0	
15			IAB5-13-15		SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) brown, medium grained, wet, no odor/staining	0.0
		GP		75			18.0	
			IAB5-18-20		SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-91-10.0' was collected over the same interval as sample EB-41-10.0'.
▽ Water level at time of drilling.

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BORING NUMBER IAB-6

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/11/14 **COMPLETED** 7/11/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 5 ft
LOGGED BY C. Lee **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **CONCRETE**	
5		GP	IAB6-3-5*	60	SP		**Clean SAND** brown, fine grained, moist, no odor/staining ▼	0.0
10		GP	IAB6-5-7* IAB6-7-9	80	SP		6.5	0.0
					SM		7.0 **Silty SAND** brown, fine grained, wet, no odor/staining	
					SP		**Clean SAND** brown, fine grained, wet, no odor/staining	0.0
15		GP	IAB6-13-15	80				0.0
20		GP	IAB6-18-20	100			18.5	
					SP		**Clean SAND** dark gray, fine to medium grained, wet, no odor/staining 20.0	0.0
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

SLR SB LOG ANCHOR - 8TH AVE (2).GPJ GINT US.GDT 7/25/14

SLR
22118 20th Ave. SE, Suite G-202
Bothell, Washington 98021
Telephone: 425.402.8800
Fax: 425.402.8488

BORING NUMBER IAB-6A

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/18/14 **COMPLETED** 7/18/14
GROUND ELEVATION **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR Holocene
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
AT TIME OF DRILLING
LOGGED BY P. LeDoux **CHECKED BY**
AFTER DRILLING
NOTES

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
							0.5 **CONCRETE**	
		GP	IAB6A-0-5	90	SP		**Clean SAND** brown, fine grained, moist, no odor/staining	0.0
5							5.0	

Boring completed @ 5.0 feet

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

SLR
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Fax: 425.402.8488

BORING NUMBER IAB-7

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/11/14 **COMPLETED** 7/11/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 5 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
							CONCRETE 1.0	
		GP		60	SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) brown, fine grained, moist, no odor/staining	
5			IAB7-3-5*				▼	0.0
			IAB7-5-7*				7.0	0.0
		GP		75	ML		**Sandy SILT** (90% Silt, 10% Sand) brown, wet, no odor/staining	
10			IAB7-7-9				9.0	0.0
					ML		**Sandy SILT** (70% Silt, 30% Sand) brown, wet, no odor/staining	
		GP		80				
15			IAB7-13-15					0.0
							16.0	
					SP		**Clean SAND** (100% Sand) gray, fine grained, wet, no odor/staining	
		GP		100			17.5	
					SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining	
20			IAB7-18-20				20.0	0.0
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-81-2.5' collected at interval of sample EB-47-2.5'.
▽ Water level at time of drilling.

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SLR
22118 20th Ave. SE, Suite G-202
Bothell, Washington 98021
Telephone: 425.402.8800
Fax: 425.402.8488

BORING NUMBER IAB-8

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/12/14 **COMPLETED** 7/12/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 5 ft
LOGGED BY C. Lee **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0							0.5 **CONCRETE**	
		GP		60	SP		**Clean SAND** dark brown, fine grained, moist, no odor/staining	
			IAB8-3-5*				4.0	0.0
5					SM		**Silty SAND** dark brown, fine grained, moist, no odor/staining ▼	
			IAB8-5-7*				6.0	0.0
		GP	IAB8-7-9	100	ML		**Sandy SILT** brown, wet, no odor/staining	0.0
10							9.0	
					SM		**Silty SAND** brown, fine grained, wet, no odor/staining	
		GP	IAB8-13-15	100				0.0
15								
		GP	IAB8-18-20	100			18.0	
					SP		**Clean SAND** dark gray, fine to medium grained, wet, no odor/staining	0.0
20							20.0	
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.
Duplicate sample EB-93-10.0' collected over the same interval as sample EB-5-10.0'.
▽ Water level at time of drilling.

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SLR
22118 20th Ave. SE, Suite G-202
Bothell, Washington 98021
Telephone: 425.402.8800
Fax: 425.402.8488

BORING NUMBER IAB-9

CLIENT Anchor QEA, LLC
PROJECT NAME 8th Avenue Terminals
PROJECT NUMBER 101.00902.00003
PROJECT LOCATION 7400 8th Avenue South, Seattle, WA
DATE STARTED 7/12/14 **COMPLETED** 7/12/14
GROUND ELEVATION _____ **HOLE SIZE** 2.125-inch-diameter
DRILLING CONTRACTOR ESN-NW
GROUND WATER LEVELS:
DRILLING METHOD Direct Push
▼ **AT TIME OF DRILLING** 6 ft
LOGGED BY P. LeDoux **CHECKED BY** _____
AFTER DRILLING _____
NOTES _____

DEPTH (ft)	INTERVAL	TYPE	SAMPLE NAME	RECOVERY %	U.S.C.S.	GRAPHIC LOG	MATERIAL DESCRIPTION	PID (ppm)
0								
							1.0 **CONCRETE**	
							1.5 **ASPHALT**	
5		GP	IAB9-3-5*	70	SP-SM		**SAND with silty fines** (95% Sand, 5% Silt) brown, fine grained, moist, no odor/staining 5.0	0.0
10		GP	IAB9-5-7* IAB9-7-9	70	SM		▼ **Silty SAND** (90% Sand, 10% Silt) dark gray, medium grained, no odor/staining 7.0	0.0
					ML		**Sandy SILT** (90% Silt, 10% Sand) brown, wet, no odor/staining 8.0	0.0
15		GP	IAB9-13-15	100	ML		**Sandy SILT** (60% Silt, 40% Sand) gray, wet, no odor/staining 14.0	
					ML		**Sandy SILT** (95% Silt, 5% Sand) dark gray, wet, no odor/staining 15.5	0.0
20		GP	IAB9-18-20	100	SP		**Clean SAND** (100% Sand) dark gray, fine to medium grained, wet, no odor/staining 20.0	0.0
							Boring completed @ 20.0 feet	

REMARKS

PID = Photoionization detector.
* = Sample submitted for laboratory analysis. Other samples collected were archived at the laboratory.
GP = Soil samples collected by using 1.5-inch-diameter acetate liners within the drilling rods.

▽ Water level at time of drilling.

SLR SB LOG ANCHOR - 8TH AVE (2).GPJ GINT US.GDT 7/25/14

SAMPLING SUMMARY TABLES

Table D-1
RI Soil Sampling Summary
8th Avenue Terminals, Inc. Site

Station ID	RI Phase	Coordinates[1]		Sample ID	Sampling Interval ft bgs[2]	Chemical Testing[3]
		Northing	Easting			
EB-05	Phase 1	199694.95	1273220.99	EB-05-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EB-05-5.0	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EB-05-10.0	9 - 11	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EB-93-10.0	9 - 11	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EB-05-12.5	12 - 13	PAHs, SVOCs
EB-14	Phase 1	199463.99	1273127.18	EB-14-1.0	0.5 - 1.5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-14-5.0	4.5 - 5.5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-14-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-14-12.5	12 - 13	PCBs, PAHs
EB-16	Phase 1	199587.70	1272982.79	EB-16-2.5'	2 - 3	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-16-5.0'	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-16-10.0'	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-16-15.0'	14.5 - 15.5	PAHs
EB-17	Phase 1	199475.43	1272983.69	EB-17-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-17-5.75	5.75 - 6.25	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-17-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-17-12.5	12 - 13	PCBs, SVOCs
EB-24	Phase 1	199223.00	1272991.18	EB-24-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-24-5.0	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EB-24-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-24-12.5	12 - 13	PAHs, SVOCs
EB-28	Phase 1	199135.54	1273184.12	EB-28-1.0	0.5 - 1.5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-28-5.0	4.5 - 5.5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-28-7.5	7 - 8	D/F
				EB-28-10.0	9.5 - 10.5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
EB-32	Phase 1	198961.09	1272718.25	EB-32-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EB-32-5.0	4.5 - 5.5	Chromium VI, Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EB-32-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EB-32-12.5	12 - 13	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
EB-38	Phase 1	199157.29	1272918.37	EB-38-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-38-5.0	4.5 - 5.5	Chromium VI, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-38-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-38-12.5	12 - 13	Metals, PAHs
EB-40	Phase 1	198891.80	1272681.94	EB-40-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-40-5.0	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-40-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
EB-41	Phase 1	198889.38	1272799.07	EB-41-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-41-5.0	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-41-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-91-10.0	9 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EB-41-15.0	14.5 - 15.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-41-20.0	19 - 20	PAHs
EB-45	Phase 1	199020.68	1273154.81	EB-45-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-45-5.0	4.5 - 5.5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-45-7.5	5 - 7	D/F
				EB-45-10.0	9.5 - 10.5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-45-12.5	12 - 13	Metals, PAHs, SVOCs
EB-46	Phase 1	198876.36	1272946.87	EB-46-1.0	0.5 - 1.5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-46-2.5	2 - 3	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EB-46-8.0	8 - 9	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-46-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
EB-47	Phase 1	198838.83	1272866.86	EB-47-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-47-5.0	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-47-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
EB-50	Phase 1	198792.72	1272951.10	EB-50-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-50-5.0	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-50-7.5	7 - 8	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
EB-51	Phase 1	198725.06	1272836.56	EB-51-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-51-5.0	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EB-51-7.5	7.5 - 8.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EB-51-10.0	9 - 10	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs

Table D-1
RI Soil Sampling Summary
8th Avenue Terminals, Inc. Site

Station ID	RI Phase	Coordinates[1]		Sample ID	Sampling Interval ft bgs[2]	Chemical Testing[3]
		Northing	Easting			
EMW-1S	Phase 1	199762.87	1272940.19	EMW-1S-2.5	2 - 3	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-1S-5.0	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-1S-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-1S-15.0	14.5 - 15.5	PAHs
EMW-2S	Phase 1	199571.31	1273329.79	EMW-2S-2.5	2 - 3	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-2S-5.0	4 - 5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-2S-10.0	9.5 - 11	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
EMW-3S	Phase 1	199487.42	1273364.83	EMW-3S-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-3S-5.0	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-3S-7.5	7 - 8	D/F
				EMW-3S-10.0	9.5 - 10.5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-3S-12.5	12.5 - 13	D/F
				EMW-3S-15.0	14.5 - 15.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-89S-5.0	14.5 - 15.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
EMW-4D	Phase 1	199352.33	1273365.96	EMW-4D-2.5'	2 - 3	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-4D-5'	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-4D-7.5'	7 - 8	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-4D-12.5'	12 - 13	PAHs
				EMW-4D-20'	19.5 - 20.5	PAHs
EMW-5S	Phase 1	199380.03	1273148.38	EMW-5S-1.0	0.5 - 1.5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-5S-2.5	2 - 3	D/F
				EMW-5S-6.5	6 - 7	D/F
				EMW-5S-7.50	7 - 8	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-5S-10.0	9.5 - 10.5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-5S-12.5	12 - 13	PCBs, PAHs
EMW-6S	Phase 1	199487.50	1272871.49	EMW-6S-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-6S-2.5	2 - 3	D/F
				EMW-6S-5.0	4.5 - 5.5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-6S-7.5	7 - 8	D/F
				EMW-6S-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-6S-12.5	12 - 13	PAHs, SVOCs
EMW-7S	Phase 1	199379.09	1272655.29	EMW-7S-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-7S-5.0	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-7S-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-7S-12.5	12 - 13	Metals, PAHs
EMW-8S	Phase 1	199223.49	1272897.26	EMW-8S-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-8S-5.0	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-8S-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-8S-12.5	12 - 13	PAHs
EMW-9S	Phase 1	199146.84	1273044.63	EMW-9S-1.0	0.5 - 1.5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-9S-5.0	4.5 - 5.5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-9S-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-9S-12.5	12 - 13	PAHs, SVOCs
EMW-10D	Phase 1	199094.38	1272714.09	EMW-10D-1.0'	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-10D-5.0'	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-10S-5.0'	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-10D-10.0'	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-10D-15.0'	14.5 - 15.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-10D-35.0'	34.5 - 35.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-10D-50.0'	49 - 50	PAHs, TPH-Dx
EMW-11S	Phase 1	199007.93	1272657.71	EMW-11S-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-11S-5.0	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-11S-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-11S-12.5	12 - 13	PAHs, SVOCs
EMW-12S	Phase 1	198751.82	1272670.76	EMW-12S-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EMW-12S-5.0	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EMW-12S-10.0	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EMW-12S-15.0	14.5 - 15.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
EMW-13S	Phase 1	198667.92	1272788.91	EMW-13S-1.0	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EMW-13S-5.0	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EMW-13S-7.5	7 - 8	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EMW-13S-12.5	12 - 13	Metals, PCBs, PAHs, SVOCs, TPH-Dx

Table D-1
RI Soil Sampling Summary
8th Avenue Terminals, Inc. Site

Station ID	RI Phase	Coordinates[1]		Sample ID	Sampling Interval ft bgs[2]	Chemical Testing[3]
		Northing	Easting			
EMW-14D	Phase 1	198695.81	1272872.68	EMW-14D-1.0'	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-14D-5.0'	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-14D-10.0'	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-14D-15.0'	14.5 - 15.5	Metals, PAHs, SVOCs
				EMW-14D-25.0'	24.5 - 25.5	PAHs
				EMW-14D-35.0'	34.5 - 35.5	PAHs
				EMW-14D-50.0'	49 - 50	PAHs
EMW-15D	Phase 1	198939.73	1273164.77	EMW-15D-1.0'	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-15D-5.0'	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-15D-10.0'	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				EMW-15D-15.0'	14.5 - 15.5	Metals, PAHs
				EMW-15D-25.0'	25 - 26	PAHs
EMW-16D	Phase 1	198688.30	1272699.81	EMW-16D-1.0'	0.5 - 1.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EMW-16D-5.0'	4.5 - 5.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EMW-16D-10.0'	9.5 - 10.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, VOCs
				EMW-16D-15.0'	14.5 - 15.5	PAHs
IAB-01	Interim Action	199700.60	1273221.91	IAB-01-3-5	3 - 5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-01-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-02	Interim Action	199683.31	1273229.63	IAB-02-3-5	3 - 5	Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, VOCs
				IAB-02-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-03	Interim Action	199665.66	1273179.56	IAB-03-3-5	3 - 5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-03-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-03-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-04	Interim Action	199665.86	1273203.80	IAB-04-3-5	3 - 5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-04-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-04-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-05	Interim Action	199643.03	1273218.91	IAB-05-3-5	3 - 5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-05-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-06	Interim Action	199657.61	1273253.05	IAB-06-3-5	3 - 5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-06-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-07	Interim Action	199610.87	1273217.56	IAB-07-3-5	3 - 5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-07-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-08	Interim Action	199613.90	1273249.73	IAB-08-3-5	3 - 5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-08-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-09	Interim Action	199563.41	1273219.11	IAB-09-3-5	3 - 5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-09-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-10	Interim Action	199544.90	1273238.90	IAB-10-3-5	3 - 5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-10-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-11	Interim Action	199523.49	1273208.46	IAB-11-3-5	3 - 5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-11-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-12	Interim Action	199519.41	1273230.61	IAB-12-3-5	3 - 5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-12-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-13	Interim Action	199472.48	1273205.00	IAB-13-3-5	3 - 5	D/F, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, VOCs
				IAB-13-5-7	5 - 7	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-14	Interim Action	199436.24	1273191.95	IAB-14-3-5	3 - 5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-14-5-7	5 - 7	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-15	Interim Action	199382.59	1273136.56	IAB-15-7-9	7 - 9	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-15-9-11	9 - 11	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-16	Interim Action	199389.36	1273163.86	IAB-16-3-5	3 - 5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-16-5-7	5 - 7	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-16-7-9	7 - 9	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-17	Interim Action	199346.17	1273133.38	IAB-17-3-5	3 - 5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-17-5-7	5 - 7	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-18	Interim Action	199292.04	1273102.69	IAB-18-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-18-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-19	Interim Action	199259.83	1273069.95	IAB-19-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-19-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs

Table D-1
RI Soil Sampling Summary
8th Avenue Terminals, Inc. Site

Station ID	RI Phase	Coordinates[1]		Sample ID	Sampling Interval ft bgs[2]	Chemical Testing[3]
		Northing	Easting			
IAB-20	Interim Action	199252.54	1273069.81	IAB-20-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-20-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-20-9-11	9 - 11	Metals, PCBs, PAHs
IAB-21	Interim Action	199220.43	1273032.13	IAB-21-5-7	5 - 7	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-21-7-9	7 - 9	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-22	Interim Action	199209.06	1273054.14	IAB-22-5-7	5 - 7	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-22-7-9	7 - 9	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-22-9-11	9 - 11	PAHs
IAB-23	Interim Action	199184.95	1272998.76	IAB-23-5-7	5 - 7	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-23-7-9	7 - 9	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-24	Interim Action	199176.81	1273023.87	IAB-24-5-7	5 - 7	D/F, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, VOCs
				IAB-24-7-9	7 - 9	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-25	Interim Action	199155.93	1272971.59	IAB-25-5-7	5 - 7	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-25-7-9	7 - 9	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-25-9-11	9 - 11	PCBs, PAHs
IAB-26	Interim Action	199137.22	1272995.93	IAB-26-5-7	5 - 7	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-26-7-9	7 - 9	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-27	Interim Action	199116.44	1272938.70	IAB-27-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-27-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-101-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-28	Interim Action	199093.94	1272970.39	IAB-28-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-28-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-102-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-29	Interim Action	199073.20	1272910.69	IAB-29-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-29-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-103-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-30	Interim Action	199045.50	1272937.70	IAB-30-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-30-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-104-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-31	Interim Action	199037.11	1272890.23	IAB-31-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-31-9-11	9 - 11	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-105-9-11	9 - 11	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-32	Interim Action	199007.10	1272912.30	IAB-32-7-9	7 - 9	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-32-9-11	9 - 11	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-33	Interim Action	199008.56	1272857.56	IAB-33-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-33-9-11	9 - 11	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-106-9-11	9 - 11	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-34	Interim Action	198962.30	1272877.00	IAB-34-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-34-9-11	9 - 11	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-107-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-35	Interim Action	198943.39	1272831.59	IAB-35-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-35-9-11	9 - 11	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-36	Interim Action	198920.89	1272863.27	IAB-36-16-18	16 - 18	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-36-18-20	18 - 20	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-36-20-22	20 - 22	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-36-22-24	22 - 24	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-37	Interim Action	198910.23	1272848.24	IAB-37-16-18	16 - 18	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-108-16-18	16 - 18	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-37-18-20	18 - 20	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-37-20-22	20 - 22	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-37-22-24	22 - 24	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-38	Interim Action	198896.46	1272805.98	IAB-38-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-38-9-11	9 - 11	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-109-9-11	9 - 11	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs

Table D-1
RI Soil Sampling Summary
8th Avenue Terminals, Inc. Site

Station ID	RI Phase	Coordinates[1]		Sample ID	Sampling Interval ft bgs[2]	Chemical Testing[3]
		Northing	Easting			
IAB-39	Interim Action	198889.22	1272825.03	IAB-39-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-39-9-11	9 - 11	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-39-11-13	11 - 13	Metals, PCBs, PAHs, TPH-Dx
IAB-40	Interim Action	198864.45	1272763.35	IAB-40-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, VOCs
				IAB-40-9-11	9 - 11	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
IAB-41	Interim Action	198863.78	1272797.93	IAB-41-7-9	7 - 9	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-41-9-11	9 - 11	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-41-11-13	11 - 13	Metals, PAHs, TPH-Dx
IAB-42	Interim Action	199731.03	1273229.76	IAB-42-3-5	3 - 5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
				IAB-42-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, VOCs
DMW-6A	Phase 2	198906.29	1272867.60	DMW6A-2-3	2 - 3	D/F, Metals, PAHs, SVOCs, TPH-Dx, TS, VOCs
				DMW-6A-3-3.5	3 - 3.5	D/F, PAHs, SVOCs, TS, VOCs
				DMW6A-6.5-8	6.5 - 8	Metals, PAHs, SVOCs, TPH-Dx, TS, VOCs
				DMW6A-8-10	8 - 10	Metals, PAHs, SVOCs, TPH-Dx, TS, VOCs
				DMW6A-11-13	11 - 13	Metals, PAHs, SVOCs, TPH-Dx, TS, VOCs
				DMW6A-15-17	15 - 17	Metals, PAHs, SVOCs, TPH-Dx, TS, VOCs
				DMW-6A-18-20	18 - 20	PAHs, SVOCs, TS, VOCs
EB-03	Phase 2	199620.90	1273011.43	EB-03-3-5	3 - 5	Metals, PCBs, TS
				EB-03-6-8	6 - 8	Metals, TS
				EB-03-8-10	8 - 10	Metals, TS
				EB-03-11-13	11 - 13	Metals, TS
EB-06	Phase 2	199660.33	1273355.79	EB-06-2-4	2 - 4	Metals, PCBs, TS
				EB-06-2-4-FD	2 - 4	Metals, TS
				EB-06-6-8	6 - 8	Metals, PCBs, TS
				EB-06-6-8-FD	6 - 8	TS
				EB-06-8-10	8 - 10	Metals, PCBs, TS
				EB-06-8-10-FD	8 - 10	TS
				EB-06-12-14	12 - 14	Metals, PCBs, TS
				EB-06-15-17	15 - 17	PCBs, TS
EB-07	Phase 2	199564.94	1273372.89	EB-07-2-4	2 - 4	D/F, Metals, PCBs, PAHs, TPH-Dx, TS
				EB-07-5-7	5 - 7	Metals, PCBs, PAHs, TPH-Dx, TS
				EB-07-8-10	8 - 10	Metals, PCBs, PAHs, TPH-Dx, TS
				EB-07-11-13	11 - 13	Metals, PCBs, PAHs, TPH-Dx, TS
				EB-07-15.5-17.5	15.5 - 17.5	PCBs, TS
EB-11	Phase 2	199261.11	1273191.94	EB-11-3-5	3 - 5	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, TS, VOCs
				EB-11-5-7	5 - 7	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, TS, VOCs
				EB-11-8-10	8 - 10	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, TS, VOCs
EB-12	Phase 2	199288.56	1273306.84	EB-12-2-4	2 - 4	Metals, PAHs, SVOCs, TS, VOCs
				EB-12-5-7	5 - 7	Metals, PAHs, SVOCs, TPH-Dx, TS, VOCs
				EB-12-8-10	8 - 10	D/F, Metals, PAHs, SVOCs, TS, VOCs
				EB-12-15-17	15 - 17	Metals, PAHs, SVOCs, TS, VOCs
				EB-12-18-20	18 - 20	PAHs, SVOCs, TS, VOCs
EB-13	Phase 2	199482.17	1273292.58	EB-13-2-4	2 - 4	D/F, Metals, PAHs, SVOCs, TS, VOCs
				EB-13-8-10	8 - 10	D/F, Metals, PAHs, SVOCs, TS, VOCs
				EB-13-11-13	11 - 13	D/F, Metals, PAHs, SVOCs, TS, VOCs
				EB-13-13-15	13 - 15	Metals, PAHs, TS
				EB-13-16-18	16 - 18	D/F, PAHs, SVOCs, TS, VOCs
EB-19	Phase 2	199463.67	1272741.86	EB-19-1.5-4	1.5 - 4	D/F, Metals, TPH-Dx, TS
				EB-19-6-8	6 - 8	D/F, Metals, TPH-Dx, TS
				EB-19-8-10	8 - 10	D/F, Metals, TPH-Dx, TS
EB-20	Phase 2	199326.28	1272668.37	EB-20-2-4	2 - 4	Metals, PCBs, PAHs, TPH-Dx, TS
				EB-20-5-7	5 - 7	Metals, PCBs, PAHs, TPH-Dx, TS
				EB-20-8-10	8 - 10	Metals, PCBs, PAHs, TPH-Dx, TS
				EB-20-11-13	11 - 13	Metals, PCBs, PAHs, TPH-Dx, TS
				EB-20-15-17	15 - 17	Metals, PCBs, PAHs, TPH-Dx, TS
				EB-20-18-20	18 - 20	PCBs, PAHs, TS

Table D-1
RI Soil Sampling Summary
8th Avenue Terminals, Inc. Site

Station ID	RI Phase	Coordinates[1]		Sample ID	Sampling Interval ft bgs[2]	Chemical Testing[3]
		Northing	Easting			
EB-22	Phase 2	199378.53	1272811.19	EB-22-2-4	2 - 4	D/F, Metals, PAHs, TS, VOCs
				EB-22-6-8	6 - 8	D/F, Metals, PAHs, TS, VOCs
				EB-22-8-10	8 - 10	D/F, Metals, PAHs, TS, VOCs
				EB-22-11-13	11 - 13	D/F, TS
				EB-22-15-17	15 - 17	D/F, TS
EB-23	Phase 2	199358.84	1272955.91	EB-23-3-5	3 - 5	D/F, Metals, TS
				EB-23-5-7	5 - 7	D/F, Metals, TS
				EB-23-8-10	8 - 10	D/F, Metals, TS
EB-25	Phase 2	199291.55	1273088.98	EB-25-2-4	2 - 4	D/F, Metals, TS
				EB-25-5.5-7.5	5 - 7	D/F, Metals, TS
				EB-25-10.5-12.5	10.5 - 12.5	D/F, Metals, TS
				EB-25-13-15	13 - 15	Metals, TS
				EB-25-15-17	15 - 17	Metals, TS
EB-27	Phase 2	199150.96	1273060.79	EB-27-2.5-4.5	2.5 - 4.5	Metals, PCBs, PAHs, SVOCs, TS, VOCs
				EB-27-5-7	5 - 7	D/F, TS
				EB-27-8-10	8 - 10	D/F, TS
EB-30	Phase 2	199059.53	1273203.96	EB-30-2-4	2 - 4	D/F, Metals, TS
				EB-30-6-8	6 - 8	D/F, Metals, TS
				EB-30-8-10	8 - 10	Metals, TS
				EB-30-12-14	12 - 14	Metals, TS
				EB-30-16.5-18.5	16.5 - 18.5	D/F, Metals, TS
EB-31	Phase 2	199187.55	1273274.78	EB-31-2-4	2 - 4	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, TS, VOCs
				EB-31-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, TS, VOCs
				EB-31-8-10	8 - 10	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, TS, VOCs
				EB-31-12.5-14.5	12.5 - 14.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, TS, VOCs
				EB-31-18-20	18 - 20	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, TS, VOCs
EB-34	Phase 2	199180.89	1272721.27	EB-34-3.5-5	3.5 - 5	D/F, Metals, PAHs, SVOCs, TS, VOCs
				EB-34-5-7	5 - 7	Metals, PAHs, SVOCs, TS, VOCs
				EB-34-8-10	8 - 10	Metals, PAHs, SVOCs, TPH-Dx, TS, VOCs
				EB-34-11-13	11 - 13	Metals, PAHs, SVOCs, TPH-Dx, TS, VOCs
				EB-84-11-13	11 - 13	Metals, PAHs, SVOCs, TS, VOCs
				EB-34-15-17	15 - 17	Metals, PAHs, SVOCs, TPH-Dx, TS, VOCs
				EB-34-18.5-20	18.5 - 20	Metals, PCBs, PAHs, TS
EB-35	Phase 2	199174.26	1272887.84	EB-35-2-4	2 - 4	D/F, Metals, PCBs, PAHs, TS
				EB-35-5-7	5 - 7	D/F, TS
				EB-85-5-7	5 - 7	D/F, TS
				EB-35-8.5-10	8.5 - 10	D/F, Metals, PCBs, PAHs, TS
				EB-35-10-12	10 - 12	Metals, PCBs, PAHs, TS
				EB-35-15-17	15 - 17	Metals, PCBs, PAHs, TS
EB-36	Phase 2	199133.55	1272766.81	EB-36-11-13	11 - 13	EPH, PCBs, PAHs, TPH-Dx, TS, VOCs, VPH
				EB-36-15.5-17.5	15.5 - 17.5	EPH, PCBs, PAHs, TPH-Dx, TS, VOCs, VPH
EB-42	Phase 2	198999.75	1272777.76	EB-42-3-5	3 - 5	D/F, Metals, PAHs, TPH-Dx, TS
				EB-42-5-7	5 - 7	PAHs, TPH-Dx, TS
				EB-42-8-10	8 - 10	PAHs, TPH-Dx, TS
				EB-42-11-13	11 - 13	PAHs, TPH-Dx, TS
				EB-42-15-17	15 - 17	PAHs, TPH-Dx, TS
EB-44	Phase 2	198992.12	1273041.57	EB-44-2-4	2 - 4	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, TS, VOCs
				EB-44-5-7	5 - 7	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, TS, VOCs
				EB-44-8-10	8 - 10	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TPH-Gx, TS, VOCs
EB-49	Phase 2	198804.78	1272676.04	EB-49-3-5	3 - 5	PCBs, PAHs, TS
				EB-49-5-7	5 - 7	PCBs, PAHs, TS
				EB-99-5-7	5 - 7	PAHs, TS
				EB-49-8.5-10	8.5 - 10	PCBs, PAHs, TS
				EB-49-11-13	11 - 13	PCBs, PAHs, TS
				EB-99-11-13	11 - 13	PAHs, TS
				EB-49-15-17	15 - 17	PCBs, TS
				EB-49-18-20	18 - 20	PCBs, TS

Table D-1
RI Soil Sampling Summary
8th Avenue Terminals, Inc. Site

Station ID	RI Phase	Coordinates[1]		Sample ID	Sampling Interval ft bgs[2]	Chemical Testing[3]
		Northing	Easting			
EB-53	Phase 2	198893.20	1273035.68	EB-53-2-4	2 - 4	D/F, PCBs, PAHs, SVOCs, TS, VOCs
				EB-53-5-7	5 - 7	D/F, PCBs, PAHs, SVOCs, TS, VOCs
				EB-53-8-10	8 - 10	D/F, PCBs, PAHs, SVOCs, TS, VOCs
				EB-53-15-17	15 - 17	Metals, PAHs, TS
				EB-103-15-17	15 - 17	Metals, PAHs, TS
EB-55	Phase 2	199532.63	1272840.24	EB-55-3-5	3 - 5	D/F, Metals, TS, VOCs
				EB-55-5-7	5 - 7	D/F, Metals, TS, VOCs
				EB-55-8-10	8 - 10	D/F, Metals, TS, VOCs
EB-56	Phase 2	198874.85	1272584.27	EB-56-2-4	2 - 4	Metals, PCBs, PAHs, TS
				EB-56-5-7	5 - 7	Metals, PCBs, PAHs, TS
				EB-56-8-10	8 - 10	Metals, PCBs, PAHs, TS
				EB-56-12.5-14.5	12.5 - 14.5	PCBs, TS
				EB-56-16-18	16 - 18	PCBs, TS
EMW-17S	Phase 2	199365.38	1272611.79	EMW-17S-3-5	3 - 5	Metals, TPH-Dx, TS
				EMW-17S-5-7	5 - 7	Metals, TPH-Dx, TS
				EMW-17S-8-10	8 - 10	Metals, TPH-Dx, TS
				EMW-17S-12-14	12 - 14	Metals, TPH-Dx, TS
EMW-18S	Phase 2	199134.80	1272603.63	EMW-18S-2.5-4.5	2.5 - 4.5	Metals, PAHs, TPH-Dx, TS
				EMW-18S-5-6.5	5 - 6.5	Metals, PAHs, TPH-Dx, TS
				EMW-18S-8-10	8 - 10	Metals, PAHs, TPH-Dx, TS
				EMW-18S-11-13	11 - 13	Metals, PAHs, TPH-Dx, TS
EMW-19D	Phase 2	199097.59	1272736.04	EMW-19D-15-17	15 - 17	EPH, PCBs, PAHs, TPH-Dx, TPH-Gx, TS, VOC, VPH
				EMW-19D-18-20	18 - 20	EPH, PCBs, PAHs, TPH-Dx, TPH-Gx, TS, VOC, VPH
				EMW-19D-26-28	26 - 28	EPH, PCBs, PAHs, TPH-Dx, TPH-Gx, TS, VOC, VPH
				EMW-19D-38-40	38 - 40	EPH, PCBs, PAHs, TPH-Dx, TPH-Gx, TS, VOC, VPH
				EMW-19D-47-49	47 - 49	EPH, PCBs, PAHs, TPH-Dx, TPH-Gx, TS, VOC, VPH
				EMW-19D-58-59.5	58 - 59.5	EPH, PCBs, PAHs, TPH-Dx, TPH-Gx, TS, VOC, VPH
				EMW-19D-68-69.5	68 - 69.5	EPH, PCBs, PAHs, TPH-Dx, TPH-Gx, TS, VOC, VPH
				EMW-19D-78-79.5	78 - 79.5	EPH, PCBs, PAHs, TPH-Dx, TPH-Gx, TS, VOC, VPH
EMW-20D	Phase 2	198935.67	1273160.44	EMW-20D-2-4	2 - 4	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, TS, VOCs
				EMW-20D-4-7	4 - 7	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, TS, VOCs
				EMW-20D-7-10	7 - 10	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TS, VOCs
				EMW-20D-10-11	10 - 11	D/F, Metals, PCBs, PAHs, SVOCs, TPH-Dx, TS, VOCs
				EMW-20D-11.5-14.5	11.5 - 14.5	Metals, PCBs, PAHs, SVOCs, TPH-Dx, TS, VOCs
EMW-21D	Phase 2	198668.25	1272751.52	EMW-21D-2-4	2 - 4	PAHs, PCBs
				EMW-21D-5-7	5 - 7	PAHs, PCBs
				EMW-21D-8-10	8 - 10	PAHs, PCBs
				EMW-21D-14-14.7	14 - 14.7	PAHs, PCBs, TS
				EMW-21D-15-15.4	15 - 15.4	Metals, PCBs, TS
				EMW-21D-17-17.7	17 - 17.7	Metals, PCBs, TS
EMW-22D	Phase 2	199366.13	1273360.73	EMW-22D-2-4	2 - 4	D/F, Metals, PAHs, TPH-Dx, TS
				EMW-22D-5-7	5 - 7	Metals, PAHs, TPH-Dx, TS
				EMW-22D-8-10	8 - 10	Metals, TS, PAHs, TPH-Dx
				EMW-22D-12.5-14.5	12.5 - 14.5	PAHs, SVOCs, TPH-Dx, TS, VOCs

Notes:

[1] Horizontal datum: Washington State Plane North, NAD83, US Survey feet.

[2] ft bgs = feet below ground surface.

[3] Chemical Testing: D/F = dioxins/furans, EPH = extractable petroleum hydrocarbons, Metals = 13 priority pollutant metals [antimony (Sb), arsenic (As), beryllium (Be), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni), selenium (Se), silver (Ag), thallium (Tl), zinc (Zn)], and Barium [Ba]., PAHs = polycyclic aromatic hydrocarbons, PCBs = polychlorinated biphenyls, SVOCs = semi-volatile organic compounds, TOC = total organic carbon, TPH-Dx = total petroleum hydrocarbons diesel extended, TPH-Gx = total petroleum hydrocarbons gasoline extended, TS = total solids, VOCs = volatile organic compounds, VPH = volatile petroleum hydrocarbons

Table D-2
RI Groundwater Sampling Summary
8th Avenue Terminals, Inc. Site

Well ID	Coordinates[1]		RI Phase[2]				Sample ID[3]	Screened Interval ft btoc[4]	Chemical Testing[5]
	Northing	Easting	PH1 HT	PH1 LT	IA	PH2			
CMW-1	199375.36	1273356.80				X	CMW-1-121514	2.5 - 17.5	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			CMW-1-100213		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				CMW-1-092513		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			CMW-1-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
CMW-2	199223.67	1273303.67				X	CMW-2-121514	2.5 - 17.5	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			CMW-2-100113		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				CMW-2-092413		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			CMW-2-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
CMW-3	199072.08	1273239.41				X	CMW-3-121814	3.5 - 18.5	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			CMW-3-093013		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				CMW-3-092413		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			CMW-3-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
CMW-4	198940.14	1273167.51				X	CMW-4-121814	2.5 - 18.0	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			CMW-4-100313		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				CMW-4-092513		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			CMW-4-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
CMW-5	198829.50	1273003.17				X	CMW-5-12222014	3.0 - 18.0	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			CMW-5-093013		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				CMW-5-092413		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			CMW-5-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
CMW-6	198692.03	1272872.72				X	CMW-6-121614	5.0 - 19.5	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			CMW-6-100113		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				CMW-6- 092513		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			CMW-6-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
CMW-7	198703.24	1272711.78				X	CMW-7-121614	4.5 - 19.3	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			CMW-7-100213		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				CMW-7-092613		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			CMW-7-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
DMW-2	199181.92	1272715.23				X	DMW-2-121614	5.0 - 19.0	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			DMW-2-100213		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				DMW-2-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			DMW-2-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
						X	DMW-52-121614		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
DMW-3	199085.93	1272715.09				X	DMW-3-121814	5.0 - 19.0	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			DMW-3-093013		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				DMW-3-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			DMW-3-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
DMW-6	198920.40	1272851.44			X		DMW6-070314	5.0 - 19.0	Dissolved Metals
				X			DMW-6-100213		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				DMW-6-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			DMW-6-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
DMW-6A	198906.29	1272867.60				X	DMW-6A-121714	5.0 - 20.0	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
EMW-1S	199762.87	1272940.19				X	EMW-1S-121514	5.0 - 19.8	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-1S-093013		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-1S-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-1S-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
EMW-2S	199571.31	1273329.79				X	EMW-2S-121714	4.8 - 19.6	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-2S-100313		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-2S-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-2S-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
				X			EMW-57S-100313		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
				X			EMW-57S-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
EMW-3S	199487.42	1273364.83				X	EMW-3S-121514	5.0 - 19.8	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-3S-100113		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-3S-092513		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-3S-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
EMW-4D	199352.33	1273365.96				X	EMW-4D-121514	40.0 - 49.8	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-4D-100113		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-4D-092513		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-4D-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
EMW-5S	199380.03	1273148.38			X		EMW5S-070314	5.0 - 19.8	Dissolved Metals
				X			EMW-5S-100213		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-5S-092413		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-5S-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-89S-092413		Chloride, Metals (Total and Dissolved), TDS, TSS
EMW-5SA	199397.74	1273130.58				X	EMW-5SA-121514	5.0 - 20.0	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
EMW-6S	199487.50	1272871.49				X	EMW-6S-121514	5.0 - 19.8	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-6S-100213		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-6S-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-6S-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
EMW-7S	199379.09	1272655.29				X	EMW-7S-121614	5.0 - 19.8	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-7S-100213		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-7S-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-7S-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs

Table D-2
RI Groundwater Sampling Summary
8th Avenue Terminals, Inc. Site

Well ID	Coordinates[1]		RI Phase[2]				Sample ID[3]	Screened Interval ft btoc[4]	Chemical Testing[5]
	Northing	Easting	PH1 HT	PH1 LT	IA	PH2			
EMW-8S	199223.49	1272897.26				X	EMW-8S-121714	5.0 - 19.8	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-8S-100313		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-8S-092413		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-8S-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
EMW-9S	199146.84	1273044.63				X	EMW-9S-121714	5.0 - 19.8	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-9S-093013		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-9S-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-9S-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
EMW-10D	199094.38	1272714.09				X	EMW-10D-121714	40.0 - 49.8	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-10D-100113		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-10D-092513		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-10D-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
				X			EMW-56D-100113		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-56D-092513		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-56D-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
EMW-11S	199007.93	1272657.71				X	EMW-11S-121614	5.0 - 19.8	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-11S-093013		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-11S-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-11S-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
EMW-12S	198751.82	1272670.76				X	EMW-12S-20141219	5.0 - 19.8	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-12S-100313		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-12S-092413		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-12S-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
EMW-13S	198667.92	1272788.91				X	EMW-13S-121614	5.0 - 19.8	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-13S-100113		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-13S-092513		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-13S-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
						X	EMW-63S-121614		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
EMW-14D	198695.81	1272872.68				X	EMW-14D-121614	39.5 - 49.5	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-14D-093013		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-14D-092513		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-14D-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
EMW-15D	198939.73	1273164.77				X	EMW-15D-121814	39.5 - 49.5	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-15D-100113		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-15D-092513		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-15D-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
EMW-16D	198688.30	1272699.81				X	EMW-16D-121614	39.5 - 49.5	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			EMW-16D-100213		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				EMW-16D-092413		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			EMW-16D-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
EMW-17S	199373.02	1272607.65				X	EMW-17S-121814	5.0 - 20.0	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
EMW-18S	199137.09	1272601.05				X	EMW-18S-121714	5.0 - 20.0	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
EMW-19D	199096.93	1272734.26				X	EMW-19D-121814	75.0 - 80.0	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
EMW-20D	198936.36	1273157.51				X	EMW-20D-121614	75.0 - 80.0	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
EMW-21D	198670.55	1272750.99				X	EMW-21D-121614	75.0 - 80.0	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
EMW-22D	199362.73	1273355.76				X	EMW-22D-121714	75.0 - 80.0	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
HC-4	198785.55	1272720.30	X				HC-4-092413	6.5 - 16.5	Chloride, Metals (Total and Dissolved), TDS, TSS
HC-20	199231.28	1272652.10				X	HC-20-121614	9.5 - 19.5	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			HC-20-100113		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				HC-20-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			HC-20-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
MW-2	199699.31	1273225.15			X		MW2-072914	3.5 - 15.0	Dissolved Metals
SLR-1	199652.19	1273064.50				X	SLR-1-121814	5.0 - 14.8	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			SLR-1-100313		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				SLR-1-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			SLR-1-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
SLR-2	199673.90	1273280.25				X	SLR-2-121714	4.2 - 14.0	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			SLR-2-100213		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				SLR-2-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			SLR-2-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
SLR-3	199530.53	1273163.01				X	SLR-3-121514	3.9 - 13.7	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			SLR-3-100313		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				SLR-3-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			SLR-3-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
SLR-6	199543.67	1273285.44				X	SLR-6-121714	3.9 - 13.7	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			SLR-6-100113		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				SLR-6-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			SLR-6-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
SLR-7	199538.61	1272997.42				X	SLR-7-121514	4.2 - 14.0	Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, VOCs
				X			SLR-7-100113		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs
			X				SLR-7-092313		Chloride, Metals (Total and Dissolved), TDS, TSS
				X			SLR-7-0713		Chloride, Metals (Total and Dissolved), PCBs, PAHs, SVOCs, TDS, TPH-Dx, TPH-Gx, TSS, VOCs

Notes:

[1] Horizontal datum: Washington State Plane North, NAD83, US Survey feet.

[2] RI Phase: PH1 HT = Phase 1 RI, high-tide sampling event, PH1 LT = Phase 1 RI, low-tide sampling event, IA = interim action sampling event, PH2 = Phase 2 RI sampling event (low tide)

[3] Wells sampled with low flow sampling method, 2-inch well diameter

[4] ft btoc = feet below top of casing.

[5] Chemical Testing: Metals = 13 priority pollutant metals [antimony (Sb), arsenic (As), beryllium (Be), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni), selenium (Se), silver (Ag), thallium (Tl), zinc (Zn)], and Barium [Ba], PAHs = polycyclic aromatic hydrocarbons, PCBs = polychlorinated biphenyls, SVOCs = semi-volatile organic compounds, TDS = total dissolved solids, TPH-Dx = total petroleum hydrocarbons diesel extended, TPH-Gx = total petroleum hydrocarbons gasoline extended, TSS = total suspended solids, VOCs = volatile organic compounds

Table D-3
RI Seep Sampling Summary
8th Avenue Terminals, Inc. Site

Station ID	Coordinates[1]		Sample ID	Sampling Method	Chemical Testing[2]
	Northing	Easting			
SEEP-1	198661.75	1272754.95	SEEP-1	Grab	Chloride, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
SEEP-2	198663.66	1272825.93	SEEP-2	Grab	Chloride, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
SEEP-3	198907.54	1273157.55	SEEP-3	Grab	Chloride, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
SEEP-4	198759.68	1273049.19	SEEP-4	Grab	Chloride, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
SEEP-5	199162.54	1273295.34	SEEP-5	Grab	Chloride, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs

Notes:

[1] Horizontal datum: Washington State Plane North, NAD83, US Survey feet.

[2] Chemical Testing: Metals = 13 priority pollutant metals [antimony (Sb), arsenic (As), beryllium (Be), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni), selenium (Se), silver (Ag), thallium (Tl), zinc (Zn)], and Barium [Ba], PAHs = polycyclic aromatic hydrocarbons, PCBs = polychlorinated biphenyls, SVOCs = semi-volatile organic compounds, TOC = total organic carbon, TPH-Dx = total petroleum hydrocarbons diesel extended, TPH-Gx = total petroleum hydrocarbons gasoline extended, TSS = total suspended solids, VOCs = volatile organic compounds

Table D-4
RI Stormwater Sampling Summary
8th Avenue Terminals, Inc. Site

Station ID	Coordinates[1]		Sample ID	Sampling Method	Chemical Testing[2]
	Northing	Easting			
OF-1	198668.86	1272702.26	OF1-022014	Grab	Chloride, Metals, PCBs, PBDEs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
			OF-1-062613		Chloride, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
OF-2	198660.91	1272807.14	OF2-022014	Grab	Chloride, Metals, PCBs, PBDEs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
			OF9-022014		Chloride, Metals, PCBs, PBDEs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
			OF-2-062613		Chloride, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
OF-3	198691.49	1272924.68	OF3-022014	Grab	Chloride, Metals, PCBs, PBDEs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
			OF-3-062613		Chloride, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
OF-4	198835.07	1273082.77	OF4-022014	Grab	Chloride, Metals, PCBs, PBDEs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
			OF-4-062613		Chloride, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
OF-5	198930.66	1273185.18	OF5-022014	Grab	Chloride, Metals, PCBs, PBDEs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
			OF-5-062613		Chloride, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
OF-6	199300.86	1273358.66	OF6-022014	Grab	Chloride, Metals, PCBs, PBDEs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs
			OF-6-062613		Chloride, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TSS, VOCs

Notes:

[1] Horizontal datum: Washington State Plane North, NAD83, US Survey feet.

[2] Chemical Testing: Metals = 13 priority pollutant metals [antimony (Sb), arsenic (As), beryllium (Be), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni), selenium (Se), silver (Ag), thallium (Tl), zinc (Zn)], and Barium [Ba], PAHs = polycyclic aromatic hydrocarbons, PBDEs = polybrominated diphenyl ethers, PCBs = polychlorinated biphenyls, SVOCs = semi-volatile organic compounds, TOC = total organic carbon, TPH-Dx = total petroleum hydrocarbons diesel extended, TPH-Gx = total petroleum hydrocarbons gasoline extended, TSS = total suspended solids, VOCs = volatile organic compounds

Table D-5
RI Catch Basin Solids Sampling Summary
8th Avenue Terminals, Inc. Site

Station ID	Coordinates[1]		Sample ID	Chemical Testing[2]
	Northing	Easting		
DP1CB2	198822.04	1272695.60	DP1CB2-061113	GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs
DP1CB3	198919.45	1272697.99	DP1CB3-061013	GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs
DP2CB2	198816.54	1272816.18	DP2CB2-061113	GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs
DP2CB5	199114.02	1272821.33	DP2CB5-060613	GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs
DP3CB1	198729.47	1272934.53	DP3CB1-060613	GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs
			DP10CB1-060613	GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs
DP3CB3	198913.38	1272937.76	DP3CB3-060613	GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs
DP4CB2	199014.31	1273060.02	DP4CB2-061113	GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs
DP4CB4	199210.13	1273063.56	DP4CB4-021314	D/F, GS, Metals, PCBs, PAHs, PBDEs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs
			DP4CB4-061013	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs
DP5CB1	198954.89	1273180.03	DP5CB1-061113	GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs
DP5CB4	199207.06	1273285.47	DP5CB4-061113	GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs
DP6CB1	199309.50	1273187.30	DP6CB1-060613	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs
DP6CB4	199318.02	1272825.16	DP6CB4-021314	D/F, GS, Metals, PCBs, PAHs, PBDEs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs
			DP6CB4-061013	GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TPH-Gx, TS, VOCs

Notes:

[1] Horizontal datum: Washington State Plane North, NAD83, US Survey feet.

[2] Chemical Testing: D/F = dioxins/furans, GS = grain size, Metals = 13 priority pollutant metals [antimony (Sb), arsenic (As), beryllium (Be), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni), selenium (Se), silver (Ag), thallium (Tl), zinc (Zn)], and Barium [Ba], PAHs = polycyclic aromatic hydrocarbons, PBDEs = polybrominated diphenyl ethers, PCBs = polychlorinated biphenyls, SVOCs = semi-volatile organic compounds, TOC = total organic carbon, TPH-Dx = total petroleum hydrocarbons diesel extended, TPH-Gx = total petroleum hydrocarbons gasoline extended, TS = total solids, VOCs = volatile organic compounds

Table D-6
RI Intertidal Sediment Sampling Summary
8th Avenue Terminals, Inc. Site

Station ID	Coordinates[1]		Sample ID	Sampling Interval[2]	Chemical Testing[3]
	Northing	Easting			
IS-1	198652.20	1272725.25	IS-1	0-3 inches	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TS
IS-2	198654.83	1272813.77	IS-2	0-3 inches	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TS
IS-3	198683.41	1272928.31	IS-3	0-3 inches	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TS
IS-4	198795.38	1273045.00	IS-4	0-3 inches	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TS
IS-5	198930.82	1273198.95	IS-5	0-3 inches	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TPH-Dx, TS

Notes:

[1] Horizontal datum: Washington State Plane North, NAD83, US Survey feet.

[2] Interval depths below mudline

[3] Chemical Testing: D/F = dioxins/furans, GS = grain size, Metals = 13 priority pollutant metals [antimony (Sb), arsenic (As), beryllium (Be), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni), selenium (Se), silver (Ag), thallium (Tl), zinc (Zn)], and Barium [Ba], PAHs = polycyclic aromatic hydrocarbons, PCBs = polychlorinated biphenyls, SVOCs = semi-volatile organic compounds, TOC = total organic carbon, TPH-Dx = total petroleum hydrocarbons diesel extended, TS = total solids

Table D-7
RI Sediment Sampling Summary
8th Avenue Terminals, Inc. Site

Station ID	Coordinates[1]		Sample ID	Mudline Elevation (ft MLLW)[2]	Sampling Interval[3]	Chemical Testing[4]
	Northing	Easting				
Surface Sediment Samples						
SSED-01	198896.29	1273229.94	SSED-01	-10.5	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-02	198848.14	1273279.82	SSED-02	-11.3	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-03	198757.62	1273092.94	SSED-03	-11.9	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-04	198706.94	1273141.83	SSED-04	-12.1	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-05	198662.75	1272977.66	SSED-05	-11.4	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-06	198603.51	1273022.39	SSED-06	-13.4	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-56		0-10 cm	D/F, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-07	198606.08	1272841.99	SSED-07	-10.7	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-08	198542.15	1272840.05	SSED-08	-14.1	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-09	198648.85	1272633.63	SSED-09	-2.8	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-10	198600.12	1272735.18	SSED-10	-10.1	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-11	198545.68	1272739.32	SSED-11	-13.9	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-12	198599.85	1272607.73	SSED-12	-9.8	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-13A	198703.49	1272480.76	SSED-13A	-4.2	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-14	198781.65	1272482.81	SSED-14	+1.7	0-10 cm	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-15A	198646.87	1272475.14	SSED-15A	-15.5	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-16A	198752.74	1272480.77	SSED-16A	-1.0	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-17A	198545.62	1272616.81	SSED-17A	-15.9	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-18A	198597.75	1272468.05	SSED-18A	-18.4	0-10 cm	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
Subsurface Sediment Samples						
SSED-SB-12A	198597.06	1272607.39	SSED-SB-12A-2-4	-11.5	2-4 ft	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-SB-12A-4-6		4-6 ft	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-SB-12A-6-7.7		6-7.7 ft	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-SB-12A-8-10		8-10 ft	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-SB-13A	198701.91	1272474.68	SSED-SB-13A-0.5-2	-5.6	0.5-2 ft	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-SB-13A-3-5		3-5 ft	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-SB-14A	198778.87	1272485.02	SSED-SB-14A-0.5-2	+1.2	0.5-2 ft	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-SB-14A-2-4		2-4 ft	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-SB-14A-4-6		4-6 ft	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-SB-64A-4-6		4-6 ft	Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-SB-14A-7-9		7-9 ft	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-SB-16A	198750.42	1272484.31	SSED-SB-16A-1-2.7	-0.77	1-2.7 ft	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-SB-16A-4-6		4-6 ft	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-SB-19	198779.87	1272448.68	SSED-SB-19-2-4	-0.77	2-4 ft	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-SB-19-4-6		4-6 ft	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-SB-19-7-9		7-9 ft	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
SSED-SB-20	198726.83	1272437.20	SSED-SB-20-2-4	-6.5	2-4 ft	D/F, GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-SB-70-2-4		2-4 ft	D/F, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-SB-20-5-7		5-7 ft	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs
			SSED-SB-20-8-10		8-10 ft	GS, Metals, PCBs, PAHs, SVOCs, TOC, TS, VOCs

Notes:

[1] Horizontal datum: Washington State Plane North, NAD83, US Survey feet.

[2] ft = feet, MLLW = mean lower low water

[3] cm = centimeters, ft = feet, depths are below mudline

[4] Chemical Testing: D/F = dioxins/furans, GS = grain size, Metals = 13 priority pollutant metals [antimony (Sb), arsenic (As), beryllium (Be), cadmium (Cd), chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni), selenium (Se), silver (Ag), thallium (Tl), zinc (Zn)], and Barium [Ba], PAHs = polycyclic aromatic hydrocarbons, PCBs = polychlorinated biphenyls, SVOCs = semi-volatile organic compounds, TOC = total organic carbon, TS = total solids, VOCs = volatile organic compounds

Table D-8
Phase 2 RI Sediment Mudline Determinations
8th Avenue Terminals, Inc. Site

Location	Attempt	Date	Time	Sounder Depth (ft)	Lead Line (Water Depth) (ft)	Estimated Water Level * (MLLW)	Mudline Elevation (MLLW)
Surface Sediment Grabs							
SSED-01	1 of 1	12/10/2014	1051	20.8	22.2	9.6	-12.6
SSED-02	1 of 1	12/10/2014	1133	21.1	21.9	8.5	-13.4
SSED-03	1 of 1	12/9/2014	1545	21.9	22	7.9	-14.1
SSED-04	1 of 1	12/10/2014	905	25.5	25.5	11.5	-14
SSED-05	1 of 1	12/10/2014	940	25.3	24.4	11.1	-13.3
SSED-06	1 of 1	12/10/2014	1013	25.6	25.9	10.3	-15.6
SSED-07	1 of 1	12/9/2014	1425	N/A	19.8	6.8	-13
SSED-08	1 of 1	12/9/2014	1515	23.6	23.8	7.4	-16.4
SSED-09	1 of 1	12/10/2014	1450	11.5	11.8	6.2	-5.6
SSED-10	1 of 1	12/10/2014	1248	19.5	19.3	6.8	-12.5
SSED-11	1 of 1	12/10/2014	1322	21.9	22.8	6.4	-16.4
SSED-12	1 of 1	12/10/2014	1358	19.2	18.6	6.1	-12.5
SSED-13A[1]	1 of 1	12/12/2014	1100	15.8	16.6	10.5	-6.1
SSED-14	1 of 1	12/10/2014	1526	7.9	8.3	6.6	-1.7
SSED-15A[1]	1 of 1	12/12/2014	1026	25	28.5	11	-17.5
SSED-16A[1]	1 of 1	12/12/2014	835	14.1	14.6	11.2	-3.4
SSED-17A[1]	1 of 1	12/12/2014	912	28.1	29.5	11.5	-18
SSED-18A[1]	1 of 1	12/12/2014	950	30.8	31.7	11.4	-20.3
Subsurface Sediment Cores							
SSED-SB-12A[1]	1 of 1	12/12/2014	1440	N/A	18.8	5.7	-13.1
SSED-SB-13A[1]	1 of 3	12/13/2014	1014	N/A	14.9	11.3	-3.6
SSED-SB-13A[1]	2 of 3	12/13/2014	1046	N/A	16.8	11.1	-5.7
SSED-SB-13A[1]	3 of 3	12/13/2014	1110	N/A	17.7	10.8	-6.9
SSED-SB-14A[1]	1 of 2	12/12/2014	1525	N/A	5.9	5.3	-0.6
SSED-SB-14A[1]	2 of 2	12/12/2014	817	N/A	10.5	11	0.5
SSED-SB-16A[1]	1 of 1	12/12/2014	1540	N/A	7.7	5.3	-2.4
SSED-SB-19	1 of 1	12/13/2014	859	N/A	13.2	10.9	-2.3
SSED-SB-20	1 of 1	12/13/2014	937	N/A	19.2	11.2	-8

Notes:

[1] The station location was moved due to field conditions.

* - Gauging station provided estimates of tide height at 8th Avenue in Seattle. No real time data available.

Table D-9
Subsurface Sediment Collection Details
8th Avenue Terminals, Inc. Site

Station ID	Attempt	Date Collected	Date Processed	Sampling Equipment	Water Depth - Lead Line (feet)	Drive Penetration (feet)	Core Tube Length (feet)	Measured Headspace (feet)	Measured Recovery (feet)	Core Recovery (%)	Recovery Compaction Factor (x)	Drive Notes
SSED-SB-12A	1 of 1	12/12/2014	12/15/2014	Vibracore	18.8	15.0	15.0	1.9	13.1	87%	1.15	0-8': Easy coring 8-15': Moderate coring
SSED-SB-13A	1 of 3	12/13/2014	--	Vibracore	14.9	13.8	15.0	7.1	6.7	49%	2.04	0-10': Moderate coring 10-14': Very hard coring Moved off location because there was debris on the bottom causing vibracore to tilt.
SSED-SB-13A	2 of 3	12/13/2014	--	Vibracore	16.6	5.5	15.0	11.5	3.5	64%	1.56	1-3': Hard coring 3-5': Moderate coring 5-5.5': Hard coring Refusal at 5.5'.
SSED-SB-13A	3 of 3	12/13/2014	12/15/2014	Vibracore	17.7	14.0	15.0	2.9	12.1	86%	1.16	0-8': Easy coring 8-11': Grading to hard coring 11'14': Hard coring
SSED-SB-14A	1 of 2	12/12/2014	--	Vibracore	5.9	--	--	--	--	--	--	Hard penetration in section, potential debris. Lost core tube: sample not processed.
SSED-SB-14A	2 of 2	12/12/2014	12/15/2014	Vibracore	10.5	14.0	15.0	1.2	13.8	99%	1.01	0-6': Debris, easy to penetrate with intermittant debris 6-15': Moderate coring
SSED-SB-16A	1 of 1	12/12/2014	12/15/2014	Vibracore	7.7	15.0	15.0	2.7	12.3	82%	1.22	Debris on the way down, potentially gravel or wood in 1st 8 ft. 0-8': Intermittant hard coring 8-15': N/A
SSED-SB-19	1 of 1	12/13/2014	12/16/2014	Vibracore	13.2	14	15.0	1.7	13.3	95%	1.05	0-9': Easy coring 9-15': Moderately easy coring
SSED-SB-20	1 of 1	12/13/2014	12/16/2014	Vibracore	19.2	14	15.0	2.9	12.1	86%	1.16	0-15': Easy coring

Table D-10
Monitoring Well Installation Details
8th Avenue Terminals, Inc. Site

Well ID	Zone [1]	Shoreline Well	Coordinates [2]		Top of Casing Elevation (ft) NAVD88 [3]	Bottom of Well Screen (ft) NAVD 88	Total Well Depth (ft btoc)	Top of Well Screen (ft btoc)	Bottom of Well Screen (ft btoc)
			Northing	Easting					
CMW-1 [4]	shallow	X	199375.36	1273356.80	16.1	-1.4	17.8	2.5	17.5
CMW-2 [4]	shallow	X	199223.67	1273303.67	16.3	-1.2	17.8	2.5	17.5
CMW-3 [4]	shallow	X	199072.08	1273239.41	16.46	-2.0	18.8	3.5	18.5
CMW-4 [4]	shallow	X	198940.14	1273167.51	16.01	-2.0	18.4	2.5	18.0
CMW-5 [4]	shallow	X	198829.50	1273003.17	16.6	-1.4	18.4	3.0	18.0
CMW-6 [4]	shallow	X	198692.03	1272872.72	16.42	-3.1	19.9	5.0	19.5
CMW-7 [4]	shallow	X	198703.24	1272711.78	16.44	-2.9	19.7	4.5	19.3 [5]
SLR-1	shallow		199652.19	1273064.50	12.05	-2.8	15.1	5.0	14.8
SLR-2	shallow		199673.90	1273280.25	11.26	-2.7	14.3	4.2	14.0
SLR-3	shallow		199530.53	1273163.01	11.86	-1.8	14.0	3.9	13.7
SLR-6	shallow		199543.67	1273285.44	12.37	-1.3	14.0	3.9	13.7
SLR-7	shallow		199538.61	1272997.42	14.15	0.2	14.3	4.2	14.0
DMW-2	shallow		199181.92	1272715.23	16.46	-2.5	19.0	5.0	19.0
DMW-3	shallow		199085.93	1272715.09	16.47	-2.5	19.0	5.0	19.0
DMW-6	shallow		198920.40	1272851.44	16.39	-2.6	20.0	5.0	19.0
DMW-6a	shallow		198906.35	1272869.03	16.38	-3.6	20.0	5.0	20.0
MW-2 [4]	shallow		199699.31	1273225.15	11.98	-3.0	15.0	3.5	15.0
HC-4 [4]	shallow		198785.55	1272720.30	16.45	-0.1	16.5	6.5	16.5
HC-19 [4]	shallow		199037.21	1272865.84	16.57	-5.4	22.0	12.0	22.0
HC-20 [4]	shallow		199231.28	1272652.10	16.66	-2.8	19.5	9.5	19.5
EMW-1S	shallow		199762.87	1272940.19	16.13	-3.7	20.0	5.0	19.8
EMW-2S	shallow		199571.31	1273329.79	12.66	-6.9	19.8	4.8	19.6
EMW-3S	shallow	X	199487.42	1273364.83	16.43	-3.4	20.0	5.0	19.8
EMW-4D	intermediate	X	199352.33	1273365.96	16.8	-33.0	50.0	40.0	49.8
EMW-5S	shallow		199380.03	1273148.38	16.64	-3.2	20.0	5.0	19.8
EMW-5Sa	shallow		199397.01	1273133.30	16.34	-3.5	20.0	5.0	19.8
EMW-6S	shallow		199487.50	1272871.49	16.17	-3.6	20.0	5.0	19.8
EMW-7S	shallow		199379.09	1272655.29	16.71	-3.1	20.0	5.0	19.8
EMW-8S	shallow		199223.49	1272897.26	16.55	-3.3	20.0	5.0	19.8
EMW-9S	shallow		199146.84	1273044.63	16.63	-3.2	20.0	5.0	19.8
EMW-10D	intermediate		199094.38	1272714.09	16.82	-33.0	50.0	40.0	49.8
EMW-11S	shallow		199007.93	1272657.71	16.61	-3.2	20.0	5.0	19.8
EMW-12S	shallow	X	198751.82	1272670.76	16.81	-3.0	20.0	5.0	19.8
EMW-13S	shallow	X	198667.92	1272788.91	16.39	-3.4	20.0	5.0	19.8
EMW-14D	intermediate	X	198695.81	1272872.68	16.42	-33.1	49.7	39.5	49.5
EMW-15D	intermediate	X	198939.73	1273164.77	16.07	-33.4	49.7	39.5	49.5
EMW-16D	intermediate	X	198688.30	1272699.81	16.52	-32.8	49.5	39.5	49.3
EMW-17S	shallow		199365.38	1272611.79	16.04	-4.0	20.3	5.0	20.0
EMW-18S	shallow		199134.80	1272603.63	15.21	-4.8	20.3	5.0	20.0
EMW-19D	deep		199096.93	1272734.26	16.50	-63.5	80.3	75.0	80.0
EMW-20D	deep	X	198936.36	1273157.51	15.97	-64.0	80.3	75.0	80.0
EMW-21D	deep	X	198670.55	1272750.99	16.18	-63.8	80.3	75.0	80.0
EMW-22D	deep	X	199362.73	1273355.76	15.98	-64.0	80.3	75.0	80.0
Stilling Well	--		198912.40	1273224.34	17.1	--	--	--	--

Notes

[1] For zone: "shallow" = up to 20 feet (approx); "intermediate" = 40 to 50 feet; "deep" = 75 to 80 feet.

[2] Horizontal datum is North American Datum 83 State Plane Washington north, US feet.

[3] Top of casing elevations were surveyed relative to the NAVD 88 datum by Signature Surveying & Mapping (for Phase 1 wells) and by APS Surveyors (for Phase 2 wells).

[4] Well installation details (total constructed well depth, top of screen and bottom of screen) are estimated from the boring log.

btoc = below top of casing

ft = feet

Table D-11
RI Groundwater Monitoring Summary
8th Avenue Terminals, Inc. Site

Well Number	Top of Casing Elevation[a] (feet)	Date Measured	Depth to Groundwater[b] (feet)	Groundwater Elevation (feet)	Depth to Surface Water[b] (feet)	Surface Water Elevation (feet)
Slip 4 Stilling Well						
Stilling Well	17.10	7/10/2013	-	-	19.57[c]	-2.47
		9/23/2013	-	-	8.27[d]	8.83
		10/2/2013	-	-	16.42[c]	0.68
Shallow Groundwater Monitoring Wells						
CMW-1	16.10	7/10/2013	10.60[c]	5.50	-	-
		9/23/2013	9.44[d]	6.66	-	-
		10/2/2013	9.83[c]	6.27	-	-
		12/15/2014	8.45	7.65		
CMW-2	16.30	7/10/2013	12.17[c]	4.13	-	-
		9/23/2013	7.60[d]	8.70	-	-
		10/2/2013	11.65[c]	4.65	-	-
		12/15/2014	11.02	5.28		
CMW-3	16.46	7/10/2013	14.51[c]	1.95	-	-
		9/23/2013	9.96[d]	6.50	-	-
		10/2/2013	12.99[c]	3.47	-	-
		12/18/2014	12.6	3.86		
CMW-4	16.01	7/10/2013	14.10[c]	1.91	-	-
		9/23/2013	NM	--	-	-
		10/2/2013	NM	--	-	-
		12/18/2014	12.48	3.53		
CMW-5	16.60	7/10/2013	14.97[c]	1.63	-	-
		9/23/2013	10.38[d]	6.22	-	-
		10/2/2013	13.32[c]	3.28	-	-
		12/22/2014	13.48	3.12		
CMW-6	16.42	7/10/2013	15.13[c]	1.29	-	-
		9/23/2013	9.94[d]	6.48	-	-
		10/2/2013	13.43[c]	2.99	-	-
		12/16/2014	12.02	4.40		
CMW-7	16.44	7/10/2013	15.24[c]	1.20	-	-
		9/23/2013	9.37[d]	7.07	-	-
		10/2/2013	13.58[c]	2.86	-	-
		12/16/2014	13.09	3.35		
DMW-2	16.46	7/10/2013	12.74[c]	3.72	-	-
		9/23/2013	11.01[d]	5.45	-	-
		10/2/2013	11.86[c]	4.60	-	-
		12/16/2014	9.11	7.35		
DMW-3	16.47	7/10/2013	12.85[c]	3.62	-	-
		9/23/2013	10.81[d]	5.66	-	-
		10/2/2013	12.06[c]	4.41	-	-
		12/18/2014	8.94	7.53		
DMW-6	16.39	7/10/2013	13.43[c]	2.96	-	-
		9/23/2013	10.56[d]	5.83	-	-
		10/2/2013	12.33[c]	4.06	-	-
DMW-6A	16.38	12/17/2014	10.56	5.82		
HC-4	16.45	7/10/2013	13.98[c]	2.47	-	-
		9/23/2013	10.00[d]	6.45	-	-
		10/2/2013	12.73[c]	3.72	-	-
HC-19	16.57	7/10/2013	NM	--	-	-
		9/23/2013	NM	--	-	-
		10/2/2013	NM	--	-	-
HC-20	16.66	7/10/2013	12.78[c]	3.88	-	-
		9/23/2013	11.33[d]	5.33	-	-
		10/2/2013	11.96[c]	4.70	-	-
		12/16/2014	9.38	7.28	-	-
SLR-1	12.05	7/10/2013	7.12[c]	4.93	-	-
		9/23/2013	6.14[d]	5.91	-	-
		10/2/2013	NM	--	-	-
		12/18/2014	5.2	6.85	-	-
SLR-2	11.26	7/10/2013	6.31[c]	4.94	-	-
		9/23/2013	5.00[d]	6.25	-	-
		10/2/2013	4.02c	7.23	-	-
		12/17/2014	3.83	7.43	-	-
SLR-3	11.86	7/10/2013	7.71c	4.15	-	-
		9/23/2013	5.47d	6.39	-	-
		10/2/2013	6.77c	5.09	-	-
		12/15/2014	5.44	6.42	-	-

Table D-11
RI Groundwater Monitoring Summary
8th Avenue Terminals, Inc. Site

Well Number	Top of Casing Elevation[a] (feet)	Date Measured	Depth to Groundwater[b] (feet)	Groundwater Elevation (feet)	Depth to Surface Water[b] (feet)	Surface Water Elevation (feet)
SLR-6	12.37	7/10/2013	8.87c	3.50	-	-
		9/23/2013	6.44d	5.93	-	-
		10/2/2013	7.80c	4.57	-	-
		12/17/2014	6.85	5.52	-	-
SLR-7	14.15	7/10/2013	9.48c	4.67	-	-
		9/23/2013	8.60d	5.55	-	-
		10/2/2013	8.60c	5.55	-	-
		12/15/2014	6.75	7.40	-	-
EMW-1S	16.13	7/10/2013	10.25c	5.88	-	-
		9/23/2013	10.18d	5.95	-	-
		10/2/2013	9.94c	6.19	-	-
		12/15/2014	7.95	8.18	-	-
EMW-2S	12.66	7/10/2013	8.88c	3.78	-	-
		9/23/2013	6.52d	6.14	-	-
		10/2/2013	7.86c	4.80	-	-
		12/17/2014	6.91	5.75	-	-
EMW-3S	16.43	7/10/2013	14.14c	2.29	-	-
		9/23/2013	9.72d	6.71	-	-
		10/2/2013	12.51c	3.92	-	-
		12/15/2014	10.42	6.01	-	-
EMW-5S	16.64	7/10/2013	13.18c	3.46	-	-
		9/23/2013	10.51d	6.13	-	-
		10/2/2013	12.09c	4.55	-	-
EMW-5Sa	16.34	12/15/2014	9.54	7.10	-	-
EMW-6S	16.17	7/10/2013	11.71c	4.46	-	-
		9/23/2013	10.51d	5.66	-	-
		10/2/2013	10.81c	5.36	-	-
		12/15/2014	7.35	8.82	-	-
EMW-7S	16.71	7/10/2013	12.58c	4.13	-	-
		9/23/2013	11.04d	5.67	-	-
		10/2/2013	11.77c	4.94	-	-
		12/16/2014	8.92	7.79		
EMW-8S	16.55	7/10/2013	12.98c	3.57	-	-
		9/23/2013	10.57d	5.98	-	-
		10/2/2013	11.95c	4.60	-	-
		12/17/2014	9.86	6.69	-	-
EMW-9S	16.63	7/10/2013	13.60c	3.03	-	-
		9/23/2013	10.37d	6.26	-	-
		10/2/2013	12.41c	4.22	-	-
		12/17/2014	10.32	6.31	-	-
EMW-10D	16.82	12/17/2014	9.04	7.78	-	-
EMW-11S	16.61	7/10/2013	12.93c	3.68	-	-
		9/23/2013	10.97d	5.64	-	-
		10/2/2013	12.06c	4.55	-	-
		12/16/2014	8.99	7.62	-	-
EMW-12S	16.81	7/10/2013	14.95c	1.86	-	-
		9/23/2013	10.14d	6.67	-	-
		10/2/2013	13.45c	3.36	-	-
		12/19/2014	13.25	3.56	-	-
EMW-13S	16.39	7/10/2013	13.49[c]	2.90	-	-
		9/23/2013	8.99[d]	7.40	-	-
		10/2/2013	12.03[c]	4.36	-	-
		12/16/2014	10.64	5.75	-	-
Intermediate and Deep Groundwater Monitoring Wells						
EMW-4D	16.80	7/10/2013	15.71[c]	1.09	-	-
		9/23/2013	9.52[d]	7.28	-	-
		10/2/2013	13.81[c]	2.99	-	-
		12/15/2014	9.46	7.34	-	-
EMW-10D	16.82	7/10/2013	13.09[c]	3.73	-	-
		9/23/2013	11.00[d]	5.82	-	-
		10/2/2013	12.29[c]	4.53	-	-
		12/17/2014	9.04	7.78	-	-
EMW-14D	16.42	7/10/2013	15.14[c]	1.28	-	-
		9/23/2013	9.80[d]	6.62	-	-
		10/2/2013	13.51[c]	2.91	-	-
		12/16/2014	10.86	5.56	-	-
EMW-15D	16.07	7/10/2013	14.86[c]	1.21	-	-
		9/23/2013	NM	--	-	-
		10/2/2013	13.02[c]	3.05	-	-
		12/18/2014	11.52	4.55	-	-

Table D-11
RI Groundwater Monitoring Summary
8th Avenue Terminals, Inc. Site

Well Number	Top of Casing Elevation[a] (feet)	Date Measured	Depth to Groundwater[b] (feet)	Groundwater Elevation (feet)	Depth to Surface Water[b] (feet)	Surface Water Elevation (feet)
EMW-16D	16.52	7/10/2013	15.86[c]	0.66	-	-
		9/23/2013	9.14[d]	7.38	-	-
		10/2/2013	13.97[c]	2.55	-	-
		12/16/2014	11.53	4.99	-	-
EMW-17S	16.04	12/18/2014	8.5	7.54	--	--
EMW-18S	15.21	12/17/2014	7.72	7.49	--	--
EMW-19D	16.50	12/18/2014	8.78	7.72	--	--
EMW-20D	15.97	12/16/2014	8.00	7.97	--	--
EMW-21D	16.18	12/16/2014	7.47	8.71	--	--
EMW-22D	15.98	12/17/2014	7.89	8.09	--	--

Notes:

[a] Top of casing elevations were surveyed relative to the NAVD 88 datum by Signature Surveying & Mapping.

[b] Measurements in feet below the top of the well casing

[c] Measured during low tide conditions in the LDW.

[d] Measured during high tide conditions in the LDW.

LDW = Lower Duwamish Waterway; NM = not measured because well was not accesible