TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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TestAmerica Job ID: 580-78750-1
Client Project/Site: Portland Harbor Pre-Remedial Design
Revision: 1

For:
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Attn: Amy Dahl

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Authorized for release by:
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Laboratory: TestAmerica Seattle

Narrative

CASE NARRATIVE
Client: AECOM
Project: Portland Harbor Pre-Remedial Design
Report Number: 580-78750-1

REVISION 1: NOVEMBER 6, 2018
This report is revised for the following: QC data was missing for BEHP in prep batch 283557 and Acenaphthylene was missing from the MB and LCS in prep batch 285535. In addition Total Solids @ 70C was omitted from the report and has been added.

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

RECEIPT
Three samples were received on 7/11/2018 1:40 PM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.8° C.

The following samples were activated for all on hold analysis by the client on 8/16/18: PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2) and PDI-SG-B477 (580-78750-3).

The following samples were canceled for Atterberg limits by the client on 8/23/18: PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2) and PDI-SG-B477 (580-78750-3).

A sample container was provided to be archived frozen at the TestAmerica Sacramento laboratory pending potential additional analyses.

This report contains results of all analyses performed by TestAmerica Seattle.

All samples were frozen to preserve the holding times. Samples were originally received and frozen at TestAmerica Sacramento on 7/12/18. Frozen samples were shipped to the Seattle laboratory on 9/10/18 and received/frozen in Seattle on 9/11/18.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

SEMIVOLATILE ORGANIC COMPOUNDS (GC-MS)
Samples PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2) and PDI-SG-B477 (580-78750-3) were analyzed for semivolatile organic compounds (GC-MS) in accordance with 8270D. The samples were prepared on 09/15/2018 and 09/19/2018 and analyzed on 09/20/2018, 09/21/2018 and 10/08/2018.

Bis(2-ethylhexyl) phthalate was detected in method blank MB 580-283557/1-A at a level that was above the method detection limit bu below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a

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Laboratory: TestAmerica Seattle (Continued)

result above the MDL and/or RL, the result has been flagged. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and/or re-analysis of samples were not performed.

Bis(2-ethylhexyl) phthalate was detected in method blank MB 580-284043/1-A at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and/or re-analysis of samples were not performed.

Bis(2-ethylhexyl) phthalate was detected in method blank MB 580-284408/1-A at a level level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and/or re-analysis of samples were not performed.

Terphenyl-d14 (Surr) failed the surrogate recovery criteria high for MB 580-284408/1-A. Since the affected samples were within control limits and the method blank did not have a detection above 1/2 the RL for the affected analyte, the data is qualified and reported.

The following samples were frozen within holding time: PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2), and PDI-SG-B477 (580-78750-3). Samples were removed from the freezer on 9/12/2018.

The opening CCV for analytical batch 284395 was 3% above %D criteria for surrogate Terphenyl-d14. Since all samples and batch QC were well above 3% of the lower %R limit for this surrogate, the small bias has not causing any of the data to be artificially passing due to the instrument bias. Therefore the data is qualified and reported. PDI-SG-B475 (580-78750-1), (CCVIS 580-284395/3), and (MB 580-284043/1-A).

The opening CCV for analytical batch 284567 was 1% above %D criteria for surrogate Terphenyl-d14. Since all samples and batch QC were well above 1% %R for this surrogate, the small bias has not caused any of the data to be artificially passing due to the instrument bias. Therefore the data is qualified and reported PDI-SG-B476 (580-78750-2), and (CCVIS 580-284567/3).

The CCVIS failed 11% above %D limits for surrogate Terphenyl-d14 (Surr). Since the affected samples are both well within acceptance criteria (both are above 80%R with a lower recovery limit of 58%), the data is qualified and reported. PDI-SG-B477 (580-78750-3) and (CCVIS 580-285903/3).

Please note - the following sample contains the incorrect reference spectra for Fluoranthene: PDI-SG-B475 (580-78750-1). However, the following samples do contain the correct reference spectra and can be utilized in review of the samples with incorrect spectra: PDI-SG-B476 (580-78750-2) and PDI-SG-B477 (580-78750-3).

The following samples were diluted due to the nature of the sample matrix: PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2), and (PDI-SG-B477 (580-78750-3). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

SEMIVOLATILE ORGANIC COMPOUNDS - SELECTED ION MODE (SIM)

Samples PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2) and PDI-SG-B477 (580-78750-3) were analyzed for semivolatile organic compounds - Selected Ion Mode (SIM) in accordance with SW846 8270D_SIM. The samples were prepared on 09/15/2018 and 10/03/2018 and analyzed on 09/19/2018, 10/04/2018 and 10/06/2018.

The 8270D SIM reference spectra for Fluoranthene is incorrect in the raw data for sample PDI-SG-B475 (580-78750-1). However, this reference spectra is correct for samples PDI-SG-B476 (580-78750-2) and PDI-SG-B477 (580-78750-3) and this reference spectra can be utilized for review of data for sample PDI-SG-B475 (580-78750-1).

The following samples were frozen by the laboratory in hold, thawed, and extracted before the holding time expired: PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2) and PDI-SG-B477 (580-78750-3). Samples were removed from freezer on 09/12/18 and 10/02/18.

The following samples were diluted due to the nature of the sample matrix: PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2) and

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Laboratory: TestAmerica Seattle (Continued)

PDI-SG-B477 (580-78750-3). Elevated reporting limits (RLs) are provided.

The following samples and batch QC were re-analyzed due to a failing CCVIS for the reported analytes: PDI-SG-B476 (580-78750-2), PDI-SG-B477 (580-78750-3), (LCS 580-285535/2-A), and (MB 580-285535/1-A).

The opening CCV for analytical batch 285645 was 2% below the %D criteria for surrogate Terphenyl-d14. Since all samples and batch QC were well within the %R for this surrogate, the small bias has not caused any of the data to be artificially passing due to the instrument bias. Therefore the data is qualified and reported. The following samples are impacted: MB 580-285535/1-A, LCS 580-285535/2-A and (CCVIS 580-285645/3).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

ORGANOTINS BY GC/MS

Samples PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2) and PDI-SG-B477 (580-78750-3) were analyzed for organotins by GC/MS in accordance with the Krone Method. The samples were prepared on 09/15/2018 and 09/19/2018 and analyzed on 09/23/2018 and 09/24/2018.

The following samples were frozen by the laboratory in hold, thawed, and extracted before the holding time expired: PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2), and PDI-SG-B477 (580-78750-3). Samples were removed from the freezer for prep 09/12/18 .

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

DIESEL AND EXTENDED RANGE ORGANICS

Samples PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2) and PDI-SG-B477 (580-78750-3) were analyzed for diesel and extended range organics in accordance with Method NWTPH-Dx. The samples were prepared on 09/16/2018 and 09/19/2018 and analyzed on 09/20/2018 and 09/22/2018.

Continuing calibration verification (CCV) standard associated with batch 580-284335 recovered outside %Drift acceptance criteria for o-Terphenyl surrogate. The %Recovery is within acceptance criteria for the surrogate in the CCV and associated samples; therefore, the data are qualified and reported. (CCV 580-284335/14), (CCV 580-284335/25), (CCVRT 580-284335/3), (LCS 580-284058/2-A), (LCSD 580-284058/3-A), and (MB 580-284058/1-A).

The following samples contained a hydrocarbon pattern in the diesel range; however, the elution pattern was later than the typical diesel fuel pattern used by the laboratory for quantitative purposes: PDI-SG-B476 (580-78750-2), PDI-SG-B477 (580-78750-3) and (580-78750-2 DU).

The following samples were frozen by the laboratory in hold, thawed, and extracted before the holding time expired: PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2) and PDI-SG-B477 (580-78750-3).. The samples were removed from the freezer on the evening of 09/15/18.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

METALS (ICPMS)

Sample PDI-SG-B475 (580-78750-1) was analyzed for Metals (ICPMS) in accordance with 6020A_LL. The samples were prepared on 08/21/2018 and analyzed on 08/22/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL MERCURY

Samples PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2) and PDI-SG-B477 (580-78750-3) were analyzed for total mercury in accordance with EPA SW-846 Method 7471A. The samples were prepared on 08/23/2018 and analyzed on 08/23/2018 and 08/24/2018.

The following samples were prepared outside of preparation holding time due to client requesting analysis after holding time expired: PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2), and PDI-SG-B477 (580-78750-3). Mercury does not get the hold time extended

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Laboratory: TestAmerica Seattle (Continued)

by freezing the samples.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL ORGANIC CARBON

Sample PDI-SG-B475 (580-78750-1) was analyzed for total organic carbon in accordance with EPA SW-846 Method 9060. The samples were analyzed on 09/19/2018.

Total Organic Carbon - Duplicates was detected in method blank MB 580-284391/5 at a level that was above the method detection limit but below the reporting limit. The value should be considered an estimate, and has been flagged. If the associated sample reported a result above the MDL and/or RL, the result has been flagged. This target analyte concentration was less than half the reporting limit (1/2RL); therefore, re-extraction and/or re-analysis of samples were not performed.

The following samples were frozen upon receipt: PDI-SG-B475 (580-78750-1), PDI-SG-B476 (580-78750-2), and PDI-SG-B477 (580-78750-3). The samples were removed from the freezer on 09/18/18.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

TOTAL SOLIDS @ 70C

Sample PDI-SG-B475 (580-78750-1) was analyzed for Total Solids @ 70C. The samples were analyzed on 07/29/2018.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Qualifiers

GC/MS Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
X	Surrogate is outside control limits

GC Semi VOA

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Metals

Qualifier	Qualifier Description
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.
H	Sample was prepped or analyzed beyond the specified holding time

General Chemistry

Qualifier	Qualifier Description
H	Sample was prepped or analyzed beyond the specified holding time
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Client Sample ID: PDI-SG-B475

Date Collected: 07/09/18 14:00
Date Received: 07/11/18 13:40

Lab Sample ID: 580-78750-1

Matrix: Solid
Percent Solids: 51.8

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		47	4.2	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Acenaphthene	ND		47	5.7	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Acenaphthylene	ND		47	4.7	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Anthracene	ND		47	5.7	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Benzo[a]anthracene	**7.7**	**J**	47	7.2	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Benzo[a]pyrene	**12**	**J**	47	3.8	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Benzo[b]fluoranthene	**11**	**J**	47	5.6	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Benzo[g,h,i]perylene	**6.9**	**J**	47	4.7	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Benzo[k]fluoranthene	ND		47	5.7	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Chrysene	ND		47	14	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Dibenz(a,h)anthracene	ND		47	6.8	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Fluoranthene	**19**	**J**	47	13	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Fluorene	ND		47	4.7	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Indeno[1,2,3-cd]pyrene	ND		47	5.7	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Naphthalene	**9.8**	**J**	47	7.6	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Phenanthrene	**13**	**J**	47	6.5	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25
Pyrene	**19**	**J**	47	9.2	ug/Kg	☼	09/15/18 08:40	09/19/18 01:58	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*70*		*57 - 120*	*09/15/18 08:40*	*09/19/18 01:58*	*25*

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		1400	170	ug/Kg	☼	09/15/18 08:47	09/20/18 02:00	25

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14 (Surr)	*107*		*58 - 120*	*09/15/18 08:47*	*09/20/18 02:00*	*25*

Method: Organotins - Organotins, PSEP (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		140	36	ug/Kg	☼	09/15/18 09:00	09/23/18 01:03	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tripentyltin	*41*		*10 - 113*	*09/15/18 09:00*	*09/23/18 01:03*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	**63**	**J**	88	22	mg/Kg	☼	09/16/18 09:40	09/20/18 03:26	1
Motor Oil (>C24-C36)	**380**		88	31	mg/Kg	☼	09/16/18 09:40	09/20/18 03:26	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*95*		*50 - 150*	*09/16/18 09:40*	*09/20/18 03:26*	*1*

Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	**4.8**		0.43	0.086	mg/Kg	☼	08/21/18 14:19	08/22/18 11:43	5
Cadmium	**0.27**	**J**	0.34	0.066	mg/Kg	☼	08/21/18 14:19	08/22/18 11:43	5
Copper	**40**		0.86	0.19	mg/Kg	☼	08/21/18 14:19	08/22/18 11:43	5
Lead	**9.1**		0.43	0.041	mg/Kg	☼	08/21/18 14:19	08/22/18 11:43	5
Zinc	**98**		4.3	1.4	mg/Kg	☼	08/21/18 14:19	08/22/18 11:43	5

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78750-1

Client Sample ID: PDI-SG-B475
Date Collected: 07/09/18 14:00
Date Received: 07/11/18 13:40

Lab Sample ID: 580-78750-1
Matrix: Solid
Percent Solids: 51.8

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.057	H	0.038	0.011	mg/Kg	☼	08/23/18 13:53	08/24/18 06:26	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	25000	B	2000	44	mg/Kg			09/19/18 13:32	1
Total Solids @ 70°C	49	H	0.10	0.10	%			07/29/18 10:03	1

Client Sample ID: PDI-SG-B476
Date Collected: 07/09/18 15:05
Date Received: 07/11/18 13:40

Lab Sample ID: 580-78750-2
Matrix: Solid
Percent Solids: 50.3

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	3.1	J	18	1.6	ug/Kg	☼	10/03/18 09:05	10/04/18 18:20	10
Acenaphthylene	ND		18	1.8	ug/Kg	☼	10/03/18 09:05	10/04/18 18:20	10
Anthracene	9.5	J	18	2.2	ug/Kg	☼	10/03/18 09:05	10/04/18 18:20	10
Benzo[a]anthracene	15	J	18	2.7	ug/Kg	☼	10/03/18 09:05	10/04/18 18:20	10
Benzo[a]pyrene	14	J	18	1.4	ug/Kg	☼	10/03/18 09:05	10/04/18 18:20	10
Benzo[g,h,i]perylene	21		18	1.8	ug/Kg	☼	10/03/18 09:05	10/04/18 18:20	10
Chrysene	22		18	5.4	ug/Kg	☼	10/03/18 09:05	10/04/18 18:20	10
Dibenz(a,h)anthracene	ND		18	2.6	ug/Kg	☼	10/03/18 09:05	10/04/18 18:20	10
Indeno[1,2,3-cd]pyrene	21		18	2.2	ug/Kg	☼	10/03/18 09:05	10/04/18 18:20	10
Naphthalene	9.9	J	18	2.9	ug/Kg	☼	10/03/18 09:05	10/04/18 18:20	10
Phenanthrene	23		18	2.5	ug/Kg	☼	10/03/18 09:05	10/04/18 18:20	10
Pyrene	31		18	3.5	ug/Kg	☼	10/03/18 09:05	10/04/18 18:20	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*97*		*57 - 120*	*10/03/18 09:05*	*10/04/18 18:20*	*10*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	ND		18	2.2	ug/Kg	☼	10/03/18 09:05	10/06/18 15:11	10
Benzo[b]fluoranthene	25		18	2.1	ug/Kg	☼	10/03/18 09:05	10/06/18 15:11	10
Benzo[k]fluoranthene	6.8	J	18	2.2	ug/Kg	☼	10/03/18 09:05	10/06/18 15:11	10
Fluoranthene	33		18	5.0	ug/Kg	☼	10/03/18 09:05	10/06/18 15:11	10
Fluorene	5.4	J	18	1.8	ug/Kg	☼	10/03/18 09:05	10/06/18 15:11	10

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		590	69	ug/Kg	☼	09/19/18 17:04	09/21/18 15:18	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14 (Surr)	*101*		*58 - 120*	*09/19/18 17:04*	*09/21/18 15:18*	*10*

Method: Organotins - Organotins, PSEP (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		150	38	ug/Kg	☼	09/26/18 09:35	10/09/18 20:09	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tripentyltin	*22*		*10 - 113*	*09/26/18 09:35*	*10/09/18 20:09*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	91	J	98	24	mg/Kg	☼	09/19/18 16:08	09/22/18 18:43	1
Motor Oil (>C24-C36)	400		98	34	mg/Kg	☼	09/19/18 16:08	09/22/18 18:43	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*102*		*50 - 150*	*09/19/18 16:08*	*09/22/18 18:43*	*1*

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.053	H	0.051	0.015	mg/Kg	☼	08/23/18 13:53	08/23/18 17:41	1

Client Sample ID: PDI-SG-B477
Date Collected: 07/09/18 12:45
Date Received: 07/11/18 13:40

Lab Sample ID: 580-78750-3
Matrix: Solid
Percent Solids: 60.6

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	9.1		7.8	0.70	ug/Kg	☼	10/03/18 09:05	10/04/18 18:45	5
Acenaphthylene	13		7.8	0.78	ug/Kg	☼	10/03/18 09:05	10/04/18 18:45	5
Anthracene	73		7.8	0.94	ug/Kg	☼	10/03/18 09:05	10/04/18 18:45	5
Benzo[a]anthracene	89		7.8	1.2	ug/Kg	☼	10/03/18 09:05	10/04/18 18:45	5
Benzo[a]pyrene	76		7.8	0.62	ug/Kg	☼	10/03/18 09:05	10/04/18 18:45	5
Benzo[g,h,i]perylene	57		7.8	0.78	ug/Kg	☼	10/03/18 09:05	10/04/18 18:45	5
Chrysene	97		7.8	2.3	ug/Kg	☼	10/03/18 09:05	10/04/18 18:45	5
Dibenz(a,h)anthracene	9.8		7.8	1.1	ug/Kg	☼	10/03/18 09:05	10/04/18 18:45	5
Indeno[1,2,3-cd]pyrene	57		7.8	0.94	ug/Kg	☼	10/03/18 09:05	10/04/18 18:45	5
Naphthalene	21		7.8	1.2	ug/Kg	☼	10/03/18 09:05	10/04/18 18:45	5
Phenanthrene	360		7.8	1.1	ug/Kg	☼	10/03/18 09:05	10/04/18 18:45	5
Pyrene	480		7.8	1.5	ug/Kg	☼	10/03/18 09:05	10/04/18 18:45	5

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*106*		*57 - 120*	*10/03/18 09:05*	*10/04/18 18:45*	*5*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	6.3	J	7.8	0.94	ug/Kg	☼	10/03/18 09:05	10/06/18 15:35	5
Benzo[b]fluoranthene	130		7.8	0.92	ug/Kg	☼	10/03/18 09:05	10/06/18 15:35	5
Benzo[k]fluoranthene	40		7.8	0.94	ug/Kg	☼	10/03/18 09:05	10/06/18 15:35	5
Fluoranthene	290		7.8	2.2	ug/Kg	☼	10/03/18 09:05	10/06/18 15:35	5
Fluorene	24		7.8	0.78	ug/Kg	☼	10/03/18 09:05	10/06/18 15:35	5

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	ND		490	58	ug/Kg	☼	09/08/18 14:48	10/08/18 15:34	10

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14 (Surr)	*90*		*58 - 120*	*09/08/18 14:48*	*10/08/18 15:34*	*10*

Method: Organotins - Organotins, PSEP (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		120	31	ug/Kg	☼	09/26/18 09:35	10/09/18 20:35	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tripentyltin	*11*		*10 - 113*	*09/26/18 09:35*	*10/09/18 20:35*	*1*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	53	J	82	20	mg/Kg	☼	09/19/18 16:08	09/22/18 19:24	1
Motor Oil (>C24-C36)	170		82	29	mg/Kg	☼	09/19/18 16:08	09/22/18 19:24	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*106*		*50 - 150*	*09/19/18 16:08*	*09/22/18 19:24*	*1*

Method: 7471A - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.046	H	0.032	0.0095	mg/Kg	☼	08/23/18 13:53	08/23/18 17:44	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 580-283557/1-A
Matrix: Solid
Analysis Batch: 283620

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 283557

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.12	J	30	3.6	ug/Kg		09/08/18 14:48	09/10/18 15:32	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14 (Surr)	*90*		*58 - 120*	*09/08/18 14:48*	*09/10/18 15:32*	*1*

Lab Sample ID: LCS 580-283557/2-A
Matrix: Solid
Analysis Batch: 283620

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 283557

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bis(2-ethylhexyl) phthalate	50.0	42.3		ug/Kg		85	59 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14 (Surr)	*88*		*58 - 120*

Lab Sample ID: MB 580-284043/1-A
Matrix: Solid
Analysis Batch: 284395

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 284043

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	3.89	J	30	3.6	ug/Kg		09/15/18 08:47	09/19/18 17:23	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14 (Surr)	*107*		*58 - 120*	*09/15/18 08:47*	*09/19/18 17:23*	*1*

Lab Sample ID: LCS 580-284043/2-A
Matrix: Solid
Analysis Batch: 284567

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 284043

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bis(2-ethylhexyl) phthalate	50.0	46.4		ug/Kg		93	59 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14 (Surr)	*113*		*58 - 120*

Lab Sample ID: MB 580-284408/1-A
Matrix: Solid
Analysis Batch: 284567

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 284408

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bis(2-ethylhexyl) phthalate	5.71	J	30	3.6	ug/Kg		09/19/18 17:04	09/21/18 13:15	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14 (Surr)	*129*	*X*	*58 - 120*	*09/19/18 17:04*	*09/21/18 13:15*	*1*

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 580-284408/2-A
Matrix: Solid
Analysis Batch: 284567

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 284408

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Bis(2-ethylhexyl) phthalate	50.0	48.6		ug/Kg		97	59 - 123

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14 (Surr)	*99*		*58 - 120*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM)

Lab Sample ID: MB 580-284042/1-A
Matrix: Solid
Analysis Batch: 284269

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 284042

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		1.0	0.090	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Acenaphthene	ND		1.0	0.12	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Acenaphthylene	ND		1.0	0.10	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Anthracene	ND		1.0	0.12	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Benzo[a]anthracene	ND		1.0	0.15	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Benzo[a]pyrene	ND		1.0	0.080	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Benzo[b]fluoranthene	ND		1.0	0.12	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Benzo[g,h,i]perylene	ND		1.0	0.10	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Benzo[k]fluoranthene	ND		1.0	0.12	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Chrysene	ND		1.0	0.30	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Dibenz(a,h)anthracene	ND		1.0	0.14	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Fluoranthene	ND		1.0	0.28	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Fluorene	ND		1.0	0.10	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Indeno[1,2,3-cd]pyrene	ND		1.0	0.12	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Naphthalene	ND		1.0	0.16	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Phenanthrene	ND		1.0	0.14	ug/Kg		09/15/18 08:40	09/18/18 16:04	1
Pyrene	ND		1.0	0.19	ug/Kg		09/15/18 08:40	09/18/18 16:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*88*		*57 - 120*	*09/15/18 08:40*	*09/18/18 16:04*	*1*

Lab Sample ID: LCS 580-284042/2-A
Matrix: Solid
Analysis Batch: 284269

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 284042

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	200	178		ug/Kg		89	68 - 120
Acenaphthene	200	178		ug/Kg		89	68 - 120
Acenaphthylene	200	187		ug/Kg		94	68 - 120
Anthracene	200	183		ug/Kg		92	73 - 125
Benzo[a]anthracene	200	189		ug/Kg		95	66 - 120
Benzo[a]pyrene	200	174		ug/Kg		87	72 - 124
Benzo[b]fluoranthene	200	192		ug/Kg		96	63 - 121
Benzo[g,h,i]perylene	200	199		ug/Kg		100	63 - 120
Benzo[k]fluoranthene	200	200		ug/Kg		100	63 - 123

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 580-284042/2-A
Matrix: Solid
Analysis Batch: 284269

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 284042

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chrysene	200	176		ug/Kg		88	69 - 120
Dibenz(a,h)anthracene	200	194		ug/Kg		97	70 - 125
Fluoranthene	200	185		ug/Kg		92	74 - 125
Fluorene	200	181		ug/Kg		91	73 - 120
Indeno[1,2,3-cd]pyrene	200	183		ug/Kg		92	65 - 121
Naphthalene	200	158		ug/Kg		79	70 - 120
Phenanthrene	200	177		ug/Kg		88	73 - 120
Pyrene	200	182		ug/Kg		91	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14	*82*		*57 - 120*

Lab Sample ID: MB 580-285535/1-A
Matrix: Solid
Analysis Batch: 285645

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 285535

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Methylnaphthalene	ND		1.0	0.090	ug/Kg		10/03/18 09:05	10/04/18 10:55	1
Acenaphthylene	ND		1.0	0.10	ug/Kg		10/03/18 09:05	10/04/18 10:55	1
Anthracene	ND		1.0	0.12	ug/Kg		10/03/18 09:05	10/04/18 10:55	1
Benzo[a]anthracene	ND		1.0	0.15	ug/Kg		10/03/18 09:05	10/04/18 10:55	1
Benzo[a]pyrene	ND		1.0	0.080	ug/Kg		10/03/18 09:05	10/04/18 10:55	1
Benzo[g,h,i]perylene	ND		1.0	0.10	ug/Kg		10/03/18 09:05	10/04/18 10:55	1
Chrysene	ND		1.0	0.30	ug/Kg		10/03/18 09:05	10/04/18 10:55	1
Dibenz(a,h)anthracene	ND		1.0	0.14	ug/Kg		10/03/18 09:05	10/04/18 10:55	1
Indeno[1,2,3-cd]pyrene	ND		1.0	0.12	ug/Kg		10/03/18 09:05	10/04/18 10:55	1
Naphthalene	ND		1.0	0.16	ug/Kg		10/03/18 09:05	10/04/18 10:55	1
Phenanthrene	ND		1.0	0.14	ug/Kg		10/03/18 09:05	10/04/18 10:55	1
Pyrene	ND		1.0	0.19	ug/Kg		10/03/18 09:05	10/04/18 10:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Terphenyl-d14	*83*		*57 - 120*	*10/03/18 09:05*	*10/04/18 10:55*	*1*

Lab Sample ID: LCS 580-285535/2-A
Matrix: Solid
Analysis Batch: 285645

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 285535

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2-Methylnaphthalene	200	170		ug/Kg		85	68 - 120
Acenaphthylene	200	209		ug/Kg		104	68 - 120
Anthracene	200	196		ug/Kg		98	73 - 125
Benzo[a]anthracene	200	184		ug/Kg		92	66 - 120
Benzo[a]pyrene	200	181		ug/Kg		91	72 - 124
Benzo[g,h,i]perylene	200	195		ug/Kg		97	63 - 120
Chrysene	200	175		ug/Kg		88	69 - 120
Dibenz(a,h)anthracene	200	188		ug/Kg		94	70 - 125
Indeno[1,2,3-cd]pyrene	200	190		ug/Kg		95	65 - 121
Naphthalene	200	173		ug/Kg		86	70 - 120

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) (Continued)

Lab Sample ID: LCS 580-285535/2-A
Matrix: Solid
Analysis Batch: 285645

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 285535

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Phenanthrene	200	189		ug/Kg		95	73 - 120
Pyrene	200	183		ug/Kg		92	70 - 120

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Terphenyl-d14	*70*		*57 - 120*

Method: 8270D SIM - Semivolatile Organic Compounds (GC/MS SIM) - RA

Lab Sample ID: MB 580-285535/1-A
Matrix: Solid
Analysis Batch: 285848

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 285535

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene - RA	ND		1.0	0.12	ug/Kg		10/03/18 09:05	10/06/18 11:29	1
Benzo[b]fluoranthene - RA	ND		1.0	0.12	ug/Kg		10/03/18 09:05	10/06/18 11:29	1
Benzo[k]fluoranthene - RA	ND		1.0	0.12	ug/Kg		10/03/18 09:05	10/06/18 11:29	1
Fluoranthene - RA	ND		1.0	0.28	ug/Kg		10/03/18 09:05	10/06/18 11:29	1
Fluorene - RA	ND		1.0	0.10	ug/Kg		10/03/18 09:05	10/06/18 11:29	1
Phenanthrene - RA	ND		1.0	0.14	ug/Kg		10/03/18 09:05	10/06/18 11:29	1
Pyrene - RA	ND		1.0	0.19	ug/Kg		10/03/18 09:05	10/06/18 11:29	1

Lab Sample ID: LCS 580-285535/2-A
Matrix: Solid
Analysis Batch: 285848

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 285535

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene - RA	200	178		ug/Kg		89	68 - 120
Benzo[b]fluoranthene - RA	200	195		ug/Kg		97	63 - 121
Benzo[k]fluoranthene - RA	200	190		ug/Kg		95	63 - 123
Fluoranthene - RA	200	181		ug/Kg		91	74 - 125
Fluorene - RA	200	187		ug/Kg		93	73 - 120
Phenanthrene - RA	200	180		ug/Kg		90	73 - 120
Pyrene - RA	200	175		ug/Kg		87	70 - 120

Method: Organotins - Organotins, PSEP (GC/MS)

Lab Sample ID: MB 580-284045/1-A
Matrix: Solid
Analysis Batch: 284676

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 284045

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		75	20	ug/Kg		09/15/18 09:00	09/22/18 18:04	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tripentyltin	*52*		*10 - 113*	*09/15/18 09:00*	*09/22/18 18:04*	*1*

Method: Organotins - Organotins, PSEP (GC/MS) (Continued)

Lab Sample ID: LCS 580-284045/2-A
Matrix: Solid
Analysis Batch: 284676

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 284045

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Tributyltin	71.8	46.9	J	ug/Kg		65	14 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tripentyltin	*64*		*10 - 113*

Lab Sample ID: MB 580-284918/1-A
Matrix: Solid
Analysis Batch: 285981

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 284918

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tributyltin	ND		75	20	ug/Kg		09/26/18 09:35	10/09/18 16:44	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tripentyltin	*54*		*10 - 113*	*09/26/18 09:35*	*10/09/18 16:44*	*1*

Lab Sample ID: LCS 580-284918/2-A
Matrix: Solid
Analysis Batch: 285981

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 284918

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Tributyltin	178	95.2		ug/Kg		53	14 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tripentyltin	*52*		*10 - 113*

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Lab Sample ID: MB 580-284058/1-A
Matrix: Solid
Analysis Batch: 284335

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 284058

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/15/18 15:32	09/19/18 22:17	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		09/15/18 15:32	09/19/18 22:17	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
o-Terphenyl	*93*		*50 - 150*	*09/15/18 15:32*	*09/19/18 22:17*	*1*

Lab Sample ID: LCS 580-284058/2-A
Matrix: Solid
Analysis Batch: 284335

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 284058

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
#2 Diesel (C10-C24)	500	499		mg/Kg		100	70 - 125
Motor Oil (>C24-C36)	500	504		mg/Kg		101	70 - 129

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCS 580-284058/2-A
Matrix: Solid
Analysis Batch: 284335

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 284058

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	113		50 - 150

Lab Sample ID: LCSD 580-284058/3-A
Matrix: Solid
Analysis Batch: 284335

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 284058

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	515		mg/Kg		103	70 - 125	3	16
Motor Oil (>C24-C36)			500	515		mg/Kg		103	70 - 129	2	16

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
o-Terphenyl	119		50 - 150

Lab Sample ID: 580-78750-1 DU
Matrix: Solid
Analysis Batch: 284335

Client Sample ID: PDI-SG-B475
Prep Type: Total/NA
Prep Batch: 284058

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	63	J		66.0	J	mg/Kg	☼			5	35
Motor Oil (>C24-C36)	380			349		mg/Kg	☼			8	35

Surrogate	DU %Recovery	DU Qualifier	Limits
o-Terphenyl	104		50 - 150

Lab Sample ID: MB 580-284396/1-A
Matrix: Solid
Analysis Batch: 284670

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 284396

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		50	12	mg/Kg		09/19/18 16:08	09/22/18 14:52	1
Motor Oil (>C24-C36)	ND		50	18	mg/Kg		09/19/18 16:08	09/22/18 14:52	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
o-Terphenyl	104		50 - 150	09/19/18 16:08	09/22/18 14:52	1

Lab Sample ID: LCS 580-284396/2-A
Matrix: Solid
Analysis Batch: 284670

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 284396

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
#2 Diesel (C10-C24)			500	471		mg/Kg		94	70 - 125		
Motor Oil (>C24-C36)			500	484		mg/Kg		97	70 - 129		

Surrogate	LCS %Recovery	LCS Qualifier	Limits
o-Terphenyl	97		50 - 150

Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC) (Continued)

Lab Sample ID: LCSD 580-284396/3-A
Matrix: Solid
Analysis Batch: 284670

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 284396

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
#2 Diesel (C10-C24)			500	476		mg/Kg		95	70 - 125	1	16
Motor Oil (>C24-C36)			500	495		mg/Kg		99	70 - 129	2	16

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
o-Terphenyl	*96*		*50 - 150*

Lab Sample ID: 580-78750-2 DU
Matrix: Solid
Analysis Batch: 284670

Client Sample ID: PDI-SG-B476
Prep Type: Total/NA
Prep Batch: 284396

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
#2 Diesel (C10-C24)	91	J		72.7	J	mg/Kg	☼			22	35
Motor Oil (>C24-C36)	400			345		mg/Kg	☼			14	35

Surrogate	*DU %Recovery*	*DU Qualifier*	*Limits*
o-Terphenyl	*105*		*50 - 150*

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 580-282094/12-A
Matrix: Solid
Analysis Batch: 282241

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 282094

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.25	0.050	mg/Kg		08/21/18 14:19	08/22/18 10:58	5
Cadmium	ND		0.20	0.039	mg/Kg		08/21/18 14:19	08/22/18 10:58	5
Copper	ND		0.50	0.11	mg/Kg		08/21/18 14:19	08/22/18 10:58	5
Lead	ND		0.25	0.024	mg/Kg		08/21/18 14:19	08/22/18 10:58	5
Zinc	ND		2.5	0.81	mg/Kg		08/21/18 14:19	08/22/18 10:58	5

Lab Sample ID: LCS 580-282094/13-A
Matrix: Solid
Analysis Batch: 282241

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 282094

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic			200	201		mg/Kg		101	80 - 120
Cadmium			5.00	4.86		mg/Kg		97	80 - 120
Copper			25.0	25.2		mg/Kg		101	80 - 120
Lead			50.0	48.6		mg/Kg		97	80 - 120
Zinc			200	198		mg/Kg		99	80 - 120

Lab Sample ID: LCSD 580-282094/14-A
Matrix: Solid
Analysis Batch: 282241

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 282094

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic			200	201		mg/Kg		100	80 - 120	0	20
Cadmium			5.00	4.93		mg/Kg		99	80 - 120	1	20

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: LCSD 580-282094/14-A
Matrix: Solid
Analysis Batch: 282241

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 282094

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Copper	25.0	25.1		mg/Kg		100	80 - 120	1	20
Lead	50.0	48.2		mg/Kg		96	80 - 120	1	20
Zinc	200	197		mg/Kg		98	80 - 120	0	20

Method: 7471A - Mercury (CVAA)

Lab Sample ID: MB 580-282304/16-A
Matrix: Solid
Analysis Batch: 282350

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 282304

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.030	0.0090	mg/Kg		08/23/18 13:53	08/23/18 17:25	1

Lab Sample ID: LCS 580-282304/17-A
Matrix: Solid
Analysis Batch: 282350

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 282304

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.167	0.160		mg/Kg		96	80 - 120

Lab Sample ID: LCSD 580-282304/18-A
Matrix: Solid
Analysis Batch: 282350

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 282304

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.167	0.153		mg/Kg		92	80 - 120	5	20

Lab Sample ID: 580-78750-1 MS
Matrix: Solid
Analysis Batch: 282350

Client Sample ID: PDI-SG-B475
Prep Type: Total/NA
Prep Batch: 282304

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	0.057	H	0.210	0.298		mg/Kg	☼	115	80 - 120

Lab Sample ID: 580-78750-1 MSD
Matrix: Solid
Analysis Batch: 282350

Client Sample ID: PDI-SG-B475
Prep Type: Total/NA
Prep Batch: 282304

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	0.057	H	0.214	0.296		mg/Kg	☼	112	80 - 120	1	20

Lab Sample ID: 580-78750-1 DU
Matrix: Solid
Analysis Batch: 282350

Client Sample ID: PDI-SG-B475
Prep Type: Total/NA
Prep Batch: 282304

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Mercury	0.057	H	0.0496		mg/Kg	☼	13	20

Method: 9060_PSEP - TOC (Puget Sound)

Lab Sample ID: MB 580-284391/5
Matrix: Solid
Analysis Batch: 284391

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon - Duplicates	119	J	2000	44	mg/Kg			09/19/18 12:31	1

Lab Sample ID: LCS 580-284391/6
Matrix: Solid
Analysis Batch: 284391

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Organic Carbon - Duplicates			4270	4310		mg/Kg		101	68 - 149		

Lab Sample ID: LCSD 580-284391/7
Matrix: Solid
Analysis Batch: 284391

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon - Duplicates			4270	3680		mg/Kg		86	68 - 149	16	32

Method: Moisture 70C - Percent Moisture, 70 C

Lab Sample ID: 580-78750-1 DU
Matrix: Solid
Analysis Batch: 280318

Client Sample ID: PDI-SG-B475
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Solids @ 70°C	49	H		48		%				2	20

Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78750-1

Client Sample ID: PDI-SG-B475
Date Collected: 07/09/18 14:00
Date Received: 07/11/18 13:40

Lab Sample ID: 580-78750-1
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	9060_PSEP		1	284391	09/19/18 13:32	TTN	TAL SEA
Total/NA	Analysis	Moisture 70C		1	280318	07/29/18 10:03	JSM	TAL SEA

Client Sample ID: PDI-SG-B475
Date Collected: 07/09/18 14:00
Date Received: 07/11/18 13:40

Lab Sample ID: 580-78750-1
Matrix: Solid
Percent Solids: 51.8

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			284043	09/15/18 08:47	DB	TAL SEA
Total/NA	Analysis	8270D		25	284395	09/20/18 02:00	ERZ	TAL SEA
Total/NA	Prep	3546			284042	09/15/18 08:40	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		25	284269	09/19/18 01:58	W1T	TAL SEA
Total/NA	Prep	Organotin Prep			284045	09/15/18 09:00	KMS	TAL SEA
Total/NA	Analysis	Organotins		1	284676	09/23/18 01:03	ERZ	TAL SEA
Total/NA	Prep	3546			284058	09/16/18 09:40	DB	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	284335	09/20/18 03:26	JCM	TAL SEA
Total/NA	Prep	3050B			282094	08/21/18 14:19	JKM	TAL SEA
Total/NA	Analysis	6020B		5	282241	08/22/18 11:43	FCW	TAL SEA
Total/NA	Prep	7471A			282304	08/23/18 13:53	T1H	TAL SEA
Total/NA	Analysis	7471A		1	282350	08/24/18 06:26	FCW	TAL SEA

Client Sample ID: PDI-SG-B476
Date Collected: 07/09/18 15:05
Date Received: 07/11/18 13:40

Lab Sample ID: 580-78750-2
Matrix: Solid
Percent Solids: 50.3

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			284408	09/19/18 17:04	SPS	TAL SEA
Total/NA	Analysis	8270D		10	284567	09/21/18 15:18	ERZ	TAL SEA
Total/NA	Prep	3546			285535	10/03/18 09:05	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		10	285696	10/04/18 18:20	W1T	TAL SEA
Total/NA	Prep	3546	RA		285535	10/03/18 09:05	BAH	TAL SEA
Total/NA	Analysis	8270D SIM	RA	10	285848	10/06/18 15:11	ERZ	TAL SEA
Total/NA	Prep	Organotin Prep			284918	09/26/18 09:35	APR	TAL SEA
Total/NA	Analysis	Organotins		1	285981	10/09/18 20:09	ERZ	TAL SEA
Total/NA	Prep	3546			284396	09/19/18 16:08	SPS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	284670	09/22/18 18:43	JCM	TAL SEA
Total/NA	Prep	7471A			282304	08/23/18 13:53	T1H	TAL SEA
Total/NA	Analysis	7471A		1	282350	08/23/18 17:41	FCW	TAL SEA

Lab Chronicle

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78750-1

Client Sample ID: PDI-SG-B477

Date Collected: 07/09/18 12:45
Date Received: 07/11/18 13:40

Lab Sample ID: 580-78750-3

Matrix: Solid
Percent Solids: 60.6

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	3550B			283557	09/08/18 14:48	KMS	TAL SEA
Total/NA	Analysis	8270D		10	285903	10/08/18 15:34	W1T	TAL SEA
Total/NA	Prep	3546			285535	10/03/18 09:05	BAH	TAL SEA
Total/NA	Analysis	8270D SIM		5	285696	10/04/18 18:45	W1T	TAL SEA
Total/NA	Prep	3546	RA		285535	10/03/18 09:05	BAH	TAL SEA
Total/NA	Analysis	8270D SIM	RA	5	285848	10/06/18 15:35	ERZ	TAL SEA
Total/NA	Prep	Organotin Prep			284918	09/26/18 09:35	APR	TAL SEA
Total/NA	Analysis	Organotins		1	285981	10/09/18 20:35	ERZ	TAL SEA
Total/NA	Prep	3546			284396	09/19/18 16:08	SPS	TAL SEA
Total/NA	Analysis	NWTPH-Dx		1	284670	09/22/18 19:24	JCM	TAL SEA
Total/NA	Prep	7471A			282304	08/23/18 13:53	T1H	TAL SEA
Total/NA	Analysis	7471A		1	282350	08/23/18 17:44	FCW	TAL SEA

Laboratory References:

TAL SEA = TestAmerica Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

Accreditation/Certification Summary

Client: AECOM
TestAmerica Job ID: 580-78750-1
Project/Site: Portland Harbor Pre-Remedial Design

Laboratory: TestAmerica Seattle

All accreditations/certifications held by this laboratory are listed. Not all accreditations/certifications are applicable to this report.

Authority	Program	EPA Region	Identification Number	Expiration Date
Alaska (UST)	State Program	10	17-024	01-19-19
ANAB	DoD ELAP		L2236	01-19-19
ANAB	ISO/IEC 17025		L2236	01-19-19
California	State Program	9	2901	11-05-18
Montana (UST)	State Program	8	N/A	04-30-20
Nevada	State Program	9	WA000502019-1	07-31-19
Oregon	NELAP	10	WA100007	11-05-19
US Fish & Wildlife	Federal		LE058448-0	07-31-19
USDA	Federal		P330-14-00126	02-10-20
Washington	State Program	10	C553	02-17-19

Sample Summary

Client: AECOM
Project/Site: Portland Harbor Pre-Remedial Design

TestAmerica Job ID: 580-78750-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-78750-1	PDI-SG-B475	Solid	07/09/18 14:00	07/11/18 13:40
580-78750-2	PDI-SG-B476	Solid	07/09/18 15:05	07/11/18 13:40
580-78750-3	PDI-SG-B477	Solid	07/09/18 12:45	07/11/18 13:40

SURFACE SEDIMENT
CHAIN OF CUSTODY

TestAmerica-Seattle	
5755-8th-Street-East	
Tacoma, WA 98424-1317	
Ph: 253-922-2310 Fax: 253-922-5047	
Client Contact	**Project Contact: Amy Dahl / Chelsey Cook**
AECOM	**Tel: (206) 438-2261 / (206) 438-2010**
1111 3rd Ave Suite 1600	**Analysis Turnaround Time**
Seattle, WA 98101	Calendar (C) or Work Days (W) _____
Phone: (206) 438-2700 Fax: 1+(866) 495-5288	☐ 21 days
Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling	☒ Other _ASAP_(sediments only)_____
Portland, OR	
Project #: 60566335 Study: Surface Sediment	
Sample Type: D/U	

Site Contact: Jennifer Ray
Laboratory Contact: Elaine-Walker
Carrier: Courier
7/5/2018
COC No: 1
__1__ of __1__ pages

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	Archive Archive -20 C	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LL, Kron/Unger	Atterberg Limits ASTM D4318	WQ - PCB Congeners 1668A	WQ - PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	WQ - Total Organic Carbon SM5310B	WQ - PAHs 8270-SIM	WQ - BEHP EPA 8270D-LL	WQ - Tributyltin Krone/Unger		Sample Specific Notes:
PDI-SG-B475	7/9/2018	14:00	SS		JH	8		H	H	x*	x*	x*	H	H	H									
PDI-SG-B476	7/9/2018	15:05	SS		JH	8		H	H	x*	x*	x*	H	H	H									
PDI-SG-B477	7/9/2018	12:45	SS		JH	8		H	H	x*	x*	x*	H	H	H									

580-78750 Chain of Custody

Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column
Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid
Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)

Sample Disposal
☐ *Return To Client* ☒ *Disposal By Lab* ☒ *Archive For 12 Months*

Special Instructions/QC Requirements & Comments:
Separate reports for each lab.
x*- Analyze for grain size, metals (6020B analytes only), Mn, and TOC (9060 @ 104C & 70C) ASAP. Rush TAT for these take precedent over remaining rush grain size analyses requested ASAP.
H - Hold analyses pending further instruction.

4.8

Relinquished by:	Company: Aecom	Date/Time: 7/11/18 1153	Received by:	Company: M-E-	Date/Time: 7/11/18 1153
Relinquished by:	Company: M-E-	Date/Time: 7/11/18 1340	Received by:	Company: TAOR	Date/Time: 7/11/18 1340
Relinquished by:	Company:	Date/Time:	Received by:	Company:	Date/Time:

SURFACE SEDIMENT
CHAIN OF CUSTODY

TestAmerica-Seattle 5755-8th-Street-East Tacoma, WA 98424-1317 **Ph: 253-922-2310 Fax: 253-922-5047**	**Project Contact: Amy Dahl / Chelsey Cook** **Tel: (206) 438-2261 / (206) 438-2010**	**Site Contact: Jennifer Ray** **Laboratory Contact: Elaine-Walker**	7/6/2018 COC No: 1 Carrier: Courier 1 of 1 pages
Client Contact AECOM 1111 3rd Ave Suite 1600 Seattle, WA 98101 Phone: (206) 438-2700 Fax: 1+(866) 495-5288 Project Name: Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland, OR Project #: 60566335 Study: Surface Sediment Sample Type: D/U	**Analysis Turnaround Time** Calendar (C) or Work Days (W) _____ ☐ 21 days ☒ Other _ASAP_(sediments only)_____		

Sample Identification	Sample Date	Sample Time	Matrix	QC Sample	Sampler's Initials	Total No. of Cont.	Fraction	PCB Congeners 1668A	PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	Grain size ASTM D7928/D6913	Total organic carbon, Total solids 9060 (104C & 70C)	Archive Archive -20 C	PAHs, BEHP, Tributyltin, 8270-SIM, 8270-LL, Kron/Unger	Atterberg Limits ASTM D4318	WQ - PCB Congeners 1668A	WQ - PCDD/Fs 1613B	TPH Diesel, Metals, Mercury NWTPH-Dx, 6020B, 7471A	WQ - Total Organic Carbon SM5310B	WQ - PAHs 8270-SIM	WQ - BEHP EPA 8270D-LL	WQ - Tributyltin Kronc/Unger		Sample Specific Notes:
PDI-SG-B475	7/9/2018	14:00	SS		JH	8		H	H	x*	x*	x*	H	H	H									
PDI-SG-B476	7/9/2018	15:05	SS		JH	8		H	H	x*	x*	x*	H	H	H									
PDI-SG-B477	7/9/2018	12:45	SS		JH	8		H	H	x*	x*	x*	H	H	H									

580-78750 Chain of Custody

Container Type: WMG=Wide Mouth Glass Jar, P=HDPE, PP=Polypropylene, AG=amber glass, G=glass, RC=Resin Column

Preservative: HCl = Hydrochloric Acid, H3PO4 = Phosphoric Acid, HNO3 = Nitric Acid

Fraction: D = Dissolved, PRT = Particulate, T = Total (unfiltered)

Sample Disposal
☐ Return To Client ☒ Disposal By Lab ☒ Archive For 12 Months

Special Instructions/QC Requirements & Comments:

Separate reports for each lab.

x*- Analyze for grain size, metals (6020B analytes only), Mn, and TOC (9060 @ 104C & 70C) ASAP. Rush TAT for these take precedent over remaining rush grain size analyses requested ASAP.
H - Hold analyses pending further instruction.

4.8

Relinquished by:	Company: Aecom	Date/Time: 7/11/18 1153	Received by:	Company: M-E-	Date/Time: 7/11/18 1153
Relinquished by:	Company: M-E-	Date/Time: 7/11/18 1340	Received by:	Company: TAPOR	Date/Time: 7/11/18 1340
Relinquished by:	Company: TAPOR	Date/Time: 7/11/18 1700	Received by: B. Sue	Company: SEA TR	Date/Time: 7/12/18 0910

Login Sample Receipt Checklist

Client: AECOM

Job Number: 580-78750-1

Login Number: 78750
List Number: 1
Creator: Antonson, Angeline D

List Source: TestAmerica Seattle

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Presley, Kim

From: Dahl, Amy <amy.dahl@aecom.com>
Sent: Friday, July 13, 2018 3:21 PM
To: Presley, Kim
Cc: Cook, Chelsey
Subject: REVISION: TestAmerica Seattle sample confirmation files from 580-78750-6 Portland Harbor Pre-Remedial Design
Attachments: SampleLoginAck_580-78750-6 [Std_Tal_Login_Ack].pdf; COC 580-78750 (201807121229).pdf

Importance: High

-External Email-

Hi Kim, so sorry to do this to you but this SDG (-6) has another sample that was cancelled for the Mn and rush metals and TOC. For sample 580-78750-1 (PDI-SG-B475) please:

- Remove manganese
- Move the metals, TOC, and TS tests to SDG 580-78750-1 for holding.

Let me know if there are problems with that.

Thanks much,

PRIVILEGED AND CONFIDENTIAL / JOINT DEFENSE COMMUNICATION / ATTORNEY CLIENT WORK PRODUCT

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Seattle, WA 98101, United States
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aecom.com

From: Presley, Kim [mailto:kim.presley@testamericainc.com]
Sent: Friday, July 13, 2018 1:40 PM
To: Dahl, Amy; Cook, Chelsey
Subject: TestAmerica Seattle sample confirmation files from 580-78750-6 Portland Harbor Pre-Remedial Design

Hello,

Attached please find the Seattle sample confirmation files for job 580-78750-6; Portland Harbor Pre-Remedial Design

Please feel free to contact me or your PM Elaine Walker if you have any questions.

Thank you.

Please let us know if we met your expectations by rating the service you received from TestAmerica on this project by visiting our website at: Project Feedback

KIM A PRESLEY
Project Manager Assistant

TestAmerica Seattle
THE LEADER IN ENVIRONMENTAL TESTING

Tel: 253.922.2310
www.testamericainc.com

Reference: [250666]
Attachments: 2