

Data Validation Report

Project:	Portland Harbor
Laboratory:	Alpha Analytical Laboratory
Environmental Test Record (ETR):	1510014
Analyses/Method:	Polycyclic Aromatic Hydrocarbons (PAH), and n-Alkanes and Total Petroleum Hydrocarbons (TPH), and Total Organic Carbon (TOC)

Summary

Twenty sediment samples were collected in Portland Harbor, Oregon on October 19, 2015. Samples were analyzed for polycyclic aromatic hydrocarbons (PAH) by EPA Method 8270D modified by selected ion monitoring mode (SIM), n-alkanes and total petroleum hydrocarbons (TPH) by EPA Method 8015D, and total organic carbon (TOC) by EPA Method 9060A by Alpha Analytical Laboratory located in Mansfield, Massachusetts. The laboratory provided Level 4 data packages containing samples results and associated quality assurance (QA) and quality control (QC) data, preparation logs, and raw instrument output. The following sediment samples are associated with the laboratory ETR 1510014.

Sample ID	Lab ID	Matrix
PH15-01-B	1510014-01	Sediment
PH15-01-C	1510014-02	Sediment
PH15-01-D	1510014-03	Sediment
PH15-02-A	1510014-04	Sediment
PH15-02-B	1510014-05	Sediment
PH15-02-C	1510014-06	Sediment
PH15-02-D	1510014-07	Sediment
PH15-03-B	1510014-08	Sediment
PH15-03-C	1510014-09	Sediment
PH15-03-D	1510014-10	Sediment
PH15-04-A	1510014-11	Sediment
PH15-04-A-FD	1510014-12	Sediment
PH15-04-B	1510014-13	Sediment
PH15-04-C	1510014-14	Sediment
PH15-05-A	1510014-15	Sediment
PH15-05-B	1510014-16	Sediment
PH15-05-C	1510014-17	Sediment
PH15-06-C	1510014-18	Sediment
PH15-07-D	1510014-19	Sediment
PH15-07-D-FD	1510014-20	Sediment

The data have been independently validated using *USEPA Contact Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review* EPA-540-R-2017-002, dated January 2017. Validation includes reconstruction of the analytical data to verify that data are traceable and



sufficiently complete in order for a qualified individual other than the originator to perform reconstruction of the data. The validation included the following checks:

- Sample Receipt/Transcription error check
- Sample preservation
- Sample holding times
- Tune Summary
- Initial calibration
- Continuing calibration verification (CCV)
- Laboratory blank contamination
- Equipment blank contamination
- Surrogate spike recoveries
- Internal Standard recoveries
- Matrix spike/Matrix spike duplicate (MS/MSD) recoveries, relative percent difference (RPD)
- Standard Reference Material Sediment accuracy check
- Laboratory control sample (LCS), LCS Duplicate (LCSD) recoveries, RPD values
- Calculation checks
- Contract Required Quantitation Limit (CRQL)
- Field duplicate results
- Laboratory duplicate results
- Overall assessment of the data

Data validation is based on the QC criteria documented in *Portland Harbor Supplemental Sediment Study, Portland Oregon Quality Assurance Project Plan (QAPP)*,¹ dated October 14, 2015, and the *Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Quality Assurance Project Plan (QAPP)*,² dated March 23, 2018. Data qualifiers assigned to results reported in this sample set are included in Table 1. Reason codes and explanations for qualified data are provided in Table 2.

Sample Receipt

Chain of custody documentation were reviewed for completeness of information relevant to the samples and requested analysis. Sample IDs and sample collection dates from the chain of custody records were matched to the reported data. No discrepancies noted.

All coolers were received within $4 \pm 2^\circ\text{C}$.

ORGANIC ANALYSES

Holding Time and Sample Preservation

All samples were extracted and analyzed within holding times.

GC/MS Instrument Performance Check – Acceptable

¹ NewFields. (2015). Portland Harbor Supplemental Sediment Study, Portland Oregon Quality Assurance Project Plan (QAPP). October 14, 2015.

² AECOM and Geosyntec. 2018. Portland Harbor Pre-Remedial Design Investigation and Baseline Sampling Portland Harbor Superfund Site, Quality Assurance Project Plan. March 23, 2018,



Initial Calibration and Continuing Calibration Verifications – Acceptable

Blanks – Acceptable except as noted below:

Method Blank: The method blank met the QC acceptance criteria for PAH. PAH were detected in the method blank below the reporting limit. However, with the exception of the analytes below, the associated sample results were either non-detect or were greater than 10X the blank concentration. Samples containing the below listed analytes at concentrations below the reporting limit were qualified as not detected, and were flagged “U” at the reporting limit based on the method blank result.

PAH Compounds	Result	Unit	Lab Qualifier
Naphthalene	0.0336	µg/Kg	J
Fluorene	0.0395	µg/Kg	J
Anthracene	0.0225	µg/Kg	J
Phenanthrene	0.0515	µg/Kg	J
Fluoranthene	0.0283	µg/Kg	J
Pyrene	0.0253	µg/Kg	J
Chrysene/Triphenylene	0.0163	µg/Kg	J

The method blank met the QC acceptance criteria for n-alkanes and TPH. n-Alkanes were detected in the method blank below the reporting limit. However, with the exception of the analytes below, the associated sample results were either non-detect or were greater than 10X the blank concentration. Samples containing the below listed analytes at concentrations below the reporting limit were qualified as not detected, and were flagged “U” at the reporting limit based on the method blank result.

n-Alkanes and TPH Compounds	Result	Unit	Lab Qualifier
n-Tetradecane (C14)	0.000333	mg/Kg	J
n-Pentadecane (C15)	0.00193	mg/Kg	J
n-Hexadecane (C16)	0.000600	mg/Kg	J
n-Octadecane (C18)	0.0286	mg/Kg	JC
n-Eicosane (C20)	0.000600	mg/Kg	J
n-Docosane (C22)	0.000400	mg/Kg	J
n-Pentacosane (C25)	0.0331	mg/Kg	CJ
n-Nonacosane (C29)	0.000533	mg/Kg	J
Total Saturated Hydrocarbons	0.0664	mg/Kg	J

Rinsate Blank: One rinsate blank (PH15-01-RB) was collected on October 21, 2015 (ETR 1510012) and is associated with the sediment samples in this ETR. Detections of target compounds in rinsate blanks were evaluated relative to sediment method detection limits (MDL). No target analytes were found in rinsate blanks at relative concentrations at, or above, the sediment MDL. No data were qualified based on the rinsate blank results.

Surrogate Spikes – Acceptable.

Internal Standard Areas – Acceptable.

Laboratory Control Samples – Acceptable.

Matrix Spike/Spike Duplicate – Acceptable.



Standard Reference Material – Acceptable.

Field Duplicate– Two field duplicates are associated with this ETR. The results are acceptable except as noted below:

A field duplicate was submitted for PH15-04-A and was identified as PH15-04-A-FD. Eighty-nine percent (89%) of the results for the field duplicates exceeded the QC limit of 50%.

The samples contained highly elevated PAHs indicative tar-derived residues. Heterogeneity of sample matrix expected and reconciles with QC exceedance. The results for the analytes exceeding the QC criteria were qualified as estimated and flagged “J” based on elevated field duplicates.

A field duplicate was submitted for PH15-07-D and was identified as PH15-07-D-FD. The results for the field duplicates were comparable except as noted below.

Sample ID	Field Duplicate ID	Analyte	RPD (%)	QC Limit (%)
PH15-07-D	PH15-07-D-FD	C3-Phenanthrenes/Anthracenes	52	50
		n-Octadecane (C18)	138	50
		Total Saturated Hydrocarbons	70	50

The samples contained elevated PAHs indicative tar-derived residues. Heterogeneity of sample matrix expected and reconciles with QC exceedance. The results for the analytes listed above were qualified as estimated and flagged “J” based on elevated field duplicates.

Laboratory Duplicate– Acceptable except as noted below:

Sample ID	Analytes	RPD (%)	QC Limit (%)
PH15-07-D-FD	Naphthalene	40	30
	C4-Naphthalenes	32	30
	Biphenyl	43	30
	C1-Fluorenes	33	30
	C2-Fluorenes	39	30
	C3-Fluorenes	31	30
	C1-Phenanthrenes/Anthracenes	39	30
	C2-Phenanthrenes/Anthracenes	40	30
	C3-Phenanthrenes/Anthracenes	52	30
	C4-Phenanthrenes/Anthracenes	58	30
	Retene	84	30
	C1-Dibenzothiophenes	36	30
	C2-Dibenzothiophenes	40	30
	C3-Dibenzothiophenes	40	30
	C4-Dibenzothiophenes	56	30
	Benzo(b)fluorene	37	30
	Fluoranthene	35	30
	Pyrene	33	30
	C1-Fluoranthenes/Pyrenes	38	30
	C2-Fluoranthenes/Pyrenes	44	30



Sample ID	Analytes	RPD (%)	QC Limit (%)
	C3-Fluoranthenes/Pyrenes	48	30
	C4-Fluoranthenes/Pyrenes	49	30
	Naphthobenzothiophenes	34	30
	C1-Naphthobenzothiophenes	39	30
	C2-Naphthobenzothiophenes	45	30
	C3-Naphthobenzothiophenes	46	30
	Benz[a]anthracene	35	30
	Chrysene/Triphenylene	31	30
	C1-Chrysenes	42	30
	C2-Chrysenes	45	30
	C3-Chrysenes	51	30
	Benzo[b]fluoranthene	31	30
	Benzo[j]fluoranthene/Benzo[k]fluoranthene	32	30
	Benzo[e]pyrene	32	30
	Benzo[a]pyrene	32	30
	Dibenz[ah]anthracene/Dibenz[ac]anthracene	31	30
	4-Methyldibenzothiophene	37	30
	2/3-Methyldibenzothiophene	45	30
	1-Methyldibenzothiophene	39	30
	3-Methylphenanthrene	37	30
	2-Methylphenanthrene	41	30
	2-Methylanthracene	41	30
	9/4-Methylphenanthrene	38	30
	1-Methylphenanthrene	41	30
	2-Methylnaphthalene	50	30
	n-Heptadecane (C17)	35	30
	n-Tetracosane (C24)	70	30
	n-Hexacosane (C26)	37	30
	n-Triacontane (C30)	36	30
	n-Tritriacontane (C33)	33	30
	n-Pentatriacontane (C35)	33	30

The samples contained elevated PAHs indicative tar-derived residues. Heterogeneity of sample matrix expected and reconciles with QC exceedance. The results for the analytes listed above were qualified as estimated and flagged “J” based on elevated laboratory duplicates.

Target Compound Identifications– Acceptable.

Compound Quantitation and CRQLs – Acceptable.

CONVENTIONAL ANALYSES

Holding Time and Sample Preservation – Acceptable.

Initial Calibration and Continuing Calibration Verifications – Acceptable.



Blanks– Acceptable.

Matrix Spike/Spike Duplicate – Acceptable.

Standard Reference Material – Acceptable.

Field Duplicate– Acceptable except as noted below:

Sample ID	Analytes	RPD (%)	QC Limit (%)
PH15-07-D-FD	TOC	52	50

The result for TOC in sample PH15-07-D was qualified as estimated and flagged “J” based on the field duplicate results.

Laboratory Duplicate– Acceptable.

Compound Quantitation and CRQLs – Acceptable

OVERALL ASSESSMENT OF DATA

The data reported in this laboratory ETR is considered usable for meeting the project objectives.

The completeness is calculated by the number of usable data points divided by the total number of data points generated, multiplied by 100. The completeness for the laboratory ETR is 100%.

Validation performed by and Date:

George Desreuisseau, Mike Mitchel and Kerylynn Krahforst, December 2018.



Staff Scientists - NewFields

Table 1. QA/QC Summary Review

Sdg	SoilSampID	Lab_ID	AnalMeth	Analyte	Result	Lab_Flag	Units	NFG Result	NFG Qualifier	validator_reason_code
1510014	PH15-01-B	1510014-01	EPA 8270D	Pyrene	0.216	JB	µg/Kg	0.9777	U	bl
1510014	PH15-01-B	1510014-01	EPA 8270D	Fluorene	0.213	JB	µg/Kg	0.9777	U	bl
1510014	PH15-01-B	1510014-01	EPA 8270D	Fluoranthene	0.182	JB	µg/Kg	0.9777	U	bl
1510014	PH15-01-C	1510014-02	EPA 8270D	Fluorene	0.15	JB	µg/Kg	1.0142	U	bl
1510014	PH15-01-D	1510014-03	EPA 8270D	Fluorene	0.201	JB	µg/Kg	0.9936	U	bl
1510014	PH15-01-D	1510014-03	EPA 8270D	Fluoranthene	0.199	JB	µg/Kg	0.9936	U	bl
1510014	PH15-02-A	1510014-04	EPA 8270D	Fluorene	0.247	JB	µg/Kg	1.0266	U	bl
1510014	PH15-02-A	1510014-04	EPA 8270D	Fluoranthene	0.194	JB	µg/Kg	1.0266	U	bl
1510014	PH15-02-B	1510014-05	EPA 8270D	Fluorene	0.232	JB	µg/Kg	0.9394	U	bl
1510014	PH15-02-C	1510014-06	EPA 8270D	Phenanthrene	0.506	JB	µg/Kg	0.9791	U	bl
1510014	PH15-02-C	1510014-06	EPA 8270D	Fluorene	0.153	JB	µg/Kg	0.9791	U	bl
1510014	PH15-02-D	1510014-07	EPA 8270D	Fluorene	0.24	JB	µg/Kg	1.3036	U	bl
1510014	PH15-03-D	1510014-10	EPA 8270D	Fluorene	0.315	JB	µg/Kg	1.0206	U	bl
1510014	PH15-04-B	1510014-13	EPA 8270D	Phenanthrene	0.43	JB	µg/Kg	0.9238	U	bl
1510014	PH15-04-B	1510014-13	EPA 8270D	Fluoranthene	0.182	JB	µg/Kg	0.9238	U	bl
1510014	PH15-04-B	1510014-13	EPA 8270D	Chrysene/Triphenylene	0.155	JB	µg/Kg	0.9238	U	bl
1510014	PH15-04-B	1510014-13	EPA 8270D	Fluorene	0.0834	JB	µg/Kg	0.9238	U	bl
1510014	PH15-04-C	1510014-14	EPA 8270D	Phenanthrene	0.259	JB	µg/Kg	1.4023	U	bl
1510014	PH15-04-C	1510014-14	EPA 8270D	Pyrene	0.218	JB	µg/Kg	1.4023	U	bl
1510014	PH15-04-C	1510014-14	EPA 8270D	Fluorene	0.0909	JB	µg/Kg	1.4023	U	bl
1510014	PH15-04-C	1510014-14	EPA 8270D	Fluoranthene	0.166	JB	µg/Kg	1.4023	U	bl
1510014	PH15-04-C	1510014-14	EPA 8270D	Chrysene/Triphenylene	0.141	JB	µg/Kg	1.4023	U	bl
1510014	PH15-05-B	1510014-16	EPA 8270D	Phenanthrene	0.25	JB	µg/Kg	0.894	U	bl
1510014	PH15-05-B	1510014-16	EPA 8270D	Fluorene	0.104	JB	µg/Kg	0.894	U	bl
1510014	PH15-05-C	1510014-17	EPA 8270D	Phenanthrene	0.345	JB	µg/Kg	1.0046	U	bl
1510014	PH15-05-C	1510014-17	EPA 8270D	Pyrene	0.123	JB	µg/Kg	1.0046	U	bl
1510014	PH15-05-C	1510014-17	EPA 8270D	Chrysene/Triphenylene	0.067	JB	µg/Kg	1.0046	U	bl
1510014	PH15-05-C	1510014-17	EPA 8270D	Fluorene	0.125	JB	µg/Kg	1.0046	U	bl
1510014	PH15-05-C	1510014-17	EPA 8270D	Fluoranthene	0.0683	JB	µg/Kg	1.0046	U	bl
1510014	PH15-01-B	1510014-01	EPA 8270D	Naphthalene	0.288	JB	µg/Kg	0.9777	U	bl
1510014	PH15-01-B	1510014-01	EPA 8270D	Anthracene	0.0707	JB	µg/Kg	0.9777	U	bl
1510014	PH15-01-C	1510014-02	EPA 8270D	Naphthalene	0.175	JB	µg/Kg	1.0142	U	bl
1510014	PH15-01-C	1510014-02	EPA 8270D	Anthracene	0.094	JB	µg/Kg	1.0142	U	bl
1510014	PH15-01-D	1510014-03	EPA 8270D	Naphthalene	0.305	JB	µg/Kg	0.9936	U	bl
1510014	PH15-01-D	1510014-03	EPA 8270D	Anthracene	0.0819	JB	µg/Kg	0.9936	U	bl
1510014	PH15-02-A	1510014-04	EPA 8270D	Naphthalene	0.233	JB	µg/Kg	1.0266	U	bl
1510014	PH15-02-A	1510014-04	EPA 8270D	Anthracene	0.0845	JB	µg/Kg	1.0266	U	bl
1510014	PH15-02-B	1510014-05	EPA 8270D	Naphthalene	0.271	JB	µg/Kg	0.9394	U	bl
1510014	PH15-02-B	1510014-05	EPA 8270D	Anthracene	0.178	JB	µg/Kg	0.9394	U	bl
1510014	PH15-02-C	1510014-06	EPA 8270D	Anthracene	0.0663	JB	µg/Kg	0.9791	U	bl
1510014	PH15-02-C	1510014-06	EPA 8270D	Naphthalene	0.206	JB	µg/Kg	0.9791	U	bl
1510014	PH15-02-D	1510014-07	EPA 8270D	Naphthalene	0.225	JB	µg/Kg	1.3036	U	bl
1510014	PH15-02-D	1510014-07	EPA 8270D	Anthracene	0.121	JB	µg/Kg	1.3036	U	bl
1510014	PH15-03-C	1510014-09	EPA 8270D	Naphthalene	0.292	JB	µg/Kg	1.0587	U	bl
1510014	PH15-03-D	1510014-10	EPA 8270D	Naphthalene	0.216	JB	µg/Kg	1.0206	U	bl
1510014	PH15-03-D	1510014-10	EPA 8270D	Anthracene	0.148	JB	µg/Kg	1.0206	U	bl
1510014	PH15-04-B	1510014-13	EPA 8270D	Anthracene	0.0771	JB	µg/Kg	0.9238	U	bl
1510014	PH15-04-B	1510014-13	EPA 8270D	Naphthalene	0.13	JB	µg/Kg	0.9238	U	bl
1510014	PH15-04-C	1510014-14	EPA 8270D	Naphthalene	0.142	JB	µg/Kg	1.4023	U	bl
1510014	PH15-04-C	1510014-14	EPA 8270D	Anthracene	0.0747	JB	µg/Kg	1.4023	U	bl
1510014	PH15-05-B	1510014-16	EPA 8270D	Anthracene	0.111	JB	µg/Kg	0.894	U	bl
1510014	PH15-05-B	1510014-16	EPA 8270D	Naphthalene	0.151	JB	µg/Kg	0.894	U	bl
1510014	PH15-05-C	1510014-17	EPA 8270D	Naphthalene	0.117	JB	µg/Kg	1.0046	U	bl
1510014	PH15-05-C	1510014-17	EPA 8270D	Anthracene	0.0397	JB	µg/Kg	1.0046	U	bl
1510014	PH15-04-A	1510014-11	EPA 8270D	C2-Phenanthrenes/Anthracenes	55.9		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C3-Naphthalenes	10.1		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C3-Fluorenes	28	G	µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C3-Fluoranthenes/Pyrenes	61.4		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C3-Dibenzothiophenes	12.5		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C3-Decalins	8.19		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C2-Naphthobenzothiophenes	16.3		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C2-Fluoranthenes/Pyrenes	97.2		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Dibenzothiophene	49.9		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C2-Dibenzothiophenes	13.2		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C2-Naphthalenes	15.5		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C2-Fluorenes	13		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C3-Naphthobenzothiophenes	20.4		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C3-Chrysenes	57.3		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C3-Phenanthrenes/Anthracenes	28.8		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C4-Chrysenes	25.4		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C4-Decalins	13		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C4-Dibenzothiophenes	8.69		µg/Kg	J		fd

Sdg	SoilSampID	Lab_ID	AnalMeth	Analyte	Result	Lab_Flag	Units	NFG		validator_ reason_code
								Result	Qualifier	
1510014	PH15-04-A	1510014-11	EPA 8270D	C4-Fluoranthenes/Pyrenes	54.9		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C4-Naphthalenes	9.29		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C4-Naphthobenzothiophenes	9.46		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Carbazole	238		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Chrysene/Triphenylene	992		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Dibenz[ah]anthracene/Dibenz[ac]anthracene	156		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Dibenzofuran	60.2		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C2-Chrysenes	75		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	2,6-Dimethylnaphthalene	7.7		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C4-Phenanthrenes/Anthracenes	14.3		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Benzo[a]pyrene	1340		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Indeno[1,2,3-cd]pyrene	884		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	1-Methylnaphthalene	11.9		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	1-Methylphenanthrene	26.1		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	2-Methylanthracene	14.7		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	2-Methylphenanthrene	50		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	3-Methylphenanthrene	38		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	4-Methyldibenzothiophene	4.17		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	9/4-Methylphenanthrene	30		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Acenaphthene	300		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Acenaphthylene	6.31		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Anthracene	248		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Benz[a]anthracene	945		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	2-Methylnaphthalene	19		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Benzo[a]fluoranthene	196		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C1-Phenanthrenes/Anthracenes	161		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Benzo[b]fluoranthene	1060		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Benzo[e]pyrene	799		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Benzo[g,h,i]perylene	953		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Benzo[j]fluoranthene/Benzo[k]fluoranthene	987		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Biphenyl	7.02		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C1-Chrysenes	220		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C1-Decalins	3.36		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C1-Dibenzothiophenes	14.3		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C1-Fluoranthenes/Pyrenes	470		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C1-Fluorenes	15.2		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C1-Naphthalenes	19.5		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	C1-Naphthobenzothiophenes	34.6		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Benzo(b)fluorene	206		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Fluorene	115		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Naphthobenzothiophenes	125		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Fluoranthene	2230		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Naphthalene	23.3		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Perylene	415		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Phenanthrene	1300		µg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8270D	Pyrene	2130		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Dibenzofuran	5.79		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Dibenzothiophene	2.88		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Fluoranthene	35.3		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Fluorene	6.11		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Naphthobenzothiophenes	6.72		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Naphthalene	11.1		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Dibenz[ah]anthracene/Dibenz[ac]anthracene	3.07		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C4-Decalins	7.37		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Indeno[1,2,3-cd]pyrene	15.3		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Chrysene/Triphenylene	31.4		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Carbazole	1.36		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C4-Phenanthrenes/Anthracenes	8.23		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C4-Naphthobenzothiophenes	2.59		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C4-Naphthalenes	4.75		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C4-Dibenzothiophenes	3.58		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C4-Chrysenes	6.49		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C3-Phenanthrenes/Anthracenes	11.2		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C4-Fluoranthenes/Pyrenes	5.72		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Pyrene	74.6		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Phenanthrene	46.9		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Perylene	27.3		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C3-Naphthobenzothiophenes	3.73		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	4-Methyldibenzothiophene	1.02		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Benzo[j]fluoranthene/Benzo[k]fluoranthene	19.5		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Benzo[g,h,i]perylene	19.4		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Benzo[e]pyrene	17.8		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Benzo[b]fluoranthene	19.4		µg/Kg	J		fd

Sdg	SoilSampID	Lab_ID	AnalMeth	Analyte	Result	Lab_Flag	Units	NFG Result	NFG Qualifier	validator_reason_code
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Benzo[a]pyrene	22.8		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Benzo[a]fluoranthene	4.18		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Benzo(b)fluorene	7.91		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Anthracene	8.4		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Biphenyl	1.94		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	9/4-Methylphenanthrene	3.48		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Benz[a]anthracene	23.8		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	3-Methylphenanthrene	3.98		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	2-Methylphenanthrene	5.14		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	2-Methylnaphthalene	5.18		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	2-Methylanthracene	1.73		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	2,6-Dimethylnaphthalene	2.37		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	1-Methylnaphthalene	1.83		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	1-Methylphenanthrene	2.85		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C3-Naphthalenes	3.24		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Acenaphthene	6.85		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C3-Dibenzothiophenes	5.96		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C3-Fluorenes	6.26		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	Acenaphthylene	2.56		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C3-Fluoranthenes/Pyrenes	6.95		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C1-Chrysenes	14.4		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C3-Decalins	4.65		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C3-Chrysenes	8.92		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C2-Phenanthrenes/Anthracenes	14.7		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C2-Naphthobenzothiophenes	4.75		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C2-Naphthalenes	3.43		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C2-Fluorenes	4.77		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C2-Fluoranthenes/Pyrenes	10.3		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C1-Fluoranthenes/Pyrenes	25.4		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C2-Dibenzothiophenes	4.93		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C1-Dibenzothiophenes	2.6		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C1-Decalins	1.76		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C1-Fluorenes	2.21		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C1-Naphthalenes	4.48		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C1-Naphthobenzothiophenes	4.49		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C1-Phenanthrenes/Anthracenes	17.7		µg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8270D	C2-Chrysenes	10.1		µg/Kg	J		fd
1510014	PH15-07-D	1510014-19	EPA 8270D	C3-Phenanthrenes/Anthracenes	4.27		µg/Kg	J		fd
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	Pyrene	59.8		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	Retene	1.06		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	Naphthobenzothiophenes	5.58		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	Naphthalene	1.06		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	Fluoranthene	48.8		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C4-Phenanthrenes/Anthracenes	1.13		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	Chrysene/Triphenylene	23.3		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	Dibenz[ah]anthracene/Dibenz[ac]anthracene	2.24		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	3-Methylphenanthrene	3.85		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C4-Naphthalenes	2.13		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	Benz[a]anthracene	14.7		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	9/4-Methylphenanthrene	2.9		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C4-Fluoranthenes/Pyrenes	0.957		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	1-Methylphenanthrene	2.31		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	2-Methylanthracene	1.43		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	4-Methyldibenzothiophene	1.03		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	Benzo(b)fluorene	3.11		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	Benzo[a]pyrene	20.5		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	Benzo[b]fluoranthene	12.5		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	Benzo[e]pyrene	12.6		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	Benzo[j]fluoranthene/Benzo[k]fluoranthene	13.1		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C1-Chrysenes	5.92		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C1-Dibenzothiophenes	2.59		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C3-Dibenzothiophenes	1.39		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C3-Naphthobenzothiophenes	0.834		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	2-Methylphenanthrene	4.77		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C1-Fluoranthenes/Pyrenes	12.4		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C3-Fluorenes	1.91	G	µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C3-Fluoranthenes/Pyrenes	1.77		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C3-Chrysenes	1.91		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C2-Dibenzothiophenes	2.25		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C2-Naphthobenzothiophenes	1.14		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C2-Fluorenes	2.12		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C1-Fluorenes	2.34		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C2-Fluoranthenes/Pyrenes	3.54		µg/Kg	J		ld

Sdg	SoilSampID	Lab_ID	AnalMeth	Analyte	Result	Lab_Flag	Units	NFG Result	NFG Qualifier	validator_reason_code
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C2-Phenanthrenes/Anthracenes	6.95		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C1-Naphthobenzothiophenes	1.96		µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C1-Phenanthrenes/Anthracenes	15.4		µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C3-Naphthobenzothiophenes	1.34	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C3-Fluorenes	2.62	G⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C3-Fluoranthenes/Pyrenes	2.9	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C2-Phenanthrenes/Anthracenes	10.5	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C3-Chrysenes	3.22	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C3-Phenanthrenes/Anthracenes	4.27	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	Naphthobenzothiophenes	7.82	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C2-Naphthobenzothiophenes	1.8	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C3-Dibenzothiophenes	2.09	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C4-Fluoranthenes/Pyrenes	1.58	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C4-Naphthalenes	2.95	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C4-Phenanthrenes/Anthracenes	2.06	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	Chrysene/Triphenylene	31.8	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	Dibenz[ah]anthracene/Dibenz[ac]anthracene	3.06	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	Naphthalene	1.59	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	Pyrene	83.1	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C2-Fluorenes	3.13	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	3-Methylphenanthrene	5.58	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	Fluoranthene	69.4	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	Benzo[e]pyrene	17.3	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	Retene	2.59	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	1-Methylphenanthrene	3.51	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	2-Methylanthracene	2.17	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	2-Methylphenanthrene	7.21	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	4-Methyldibenzothiophene	1.5	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	Benz[a]anthracene	21	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	Benzo(b)fluorene	4.53	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	9/4-Methylphenanthrene	4.28	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	Benzo[b]fluoranthene	17	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C2-Fluoranthenes/Pyrenes	5.56	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	Benzo[j]fluoranthene/Benzo[k]fluoranthene	18	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C1-Chrysenes	9.06	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C1-Dibenzothiophenes	3.74	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C1-Fluoranthenes/Pyrenes	18.2	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C1-Fluorenes	3.26	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C1-Naphthobenzothiophenes	2.92	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C1-Phenanthrenes/Anthracenes	23	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	C2-Dibenzothiophenes	3.35	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD-DUP	1510014-20D	EPA 8270D	Benzo[a]pyrene	28.3	⌘	µg/Kg	J		ld
1510014	PH15-07-D-FD	1510014-20	EPA 8270D	C3-Phenanthrenes/Anthracenes	2.5		µg/Kg	J		ld, fd
1510014	PH15-01-B	1510014-01	EPA 8015M	n-Octadecane (C18)	0.0491	JB	mg/Kg	0.0978	U	bl
1510014	PH15-01-B	1510014-01	EPA 8015M	n-Pentadecane (C15)	0.0045	JB	mg/Kg	0.0978	U	bl
1510014	PH15-01-C	1510014-02	EPA 8015M	n-Docosane (C22)	0.00233	JB	mg/Kg	0.1014	U	bl
1510014	PH15-01-C	1510014-02	EPA 8015M	n-Octadecane (C18)	0.0354	CJB	mg/Kg	0.1014	U	bl
1510014	PH15-01-C	1510014-02	EPA 8015M	n-Pentacosane (C25)	0.0721	JB	mg/Kg	0.1014	U	bl
1510014	PH15-01-C	1510014-02	EPA 8015M	n-Pentadecane (C15)	0.00578	JB	mg/Kg	0.1014	U	bl
1510014	PH15-01-D	1510014-03	EPA 8015M	n-Octadecane (C18)	0.0398	JB	mg/Kg	0.0994	U	bl
1510014	PH15-01-D	1510014-03	EPA 8015M	n-Pentadecane (C15)	0.00527	JB	mg/Kg	0.0994	U	bl
1510014	PH15-02-A	1510014-04	EPA 8015M	n-Octadecane (C18)	0.0399	CJB	mg/Kg	0.1027	U	bl
1510014	PH15-02-B	1510014-05	EPA 8015M	n-Octadecane (C18)	0.0363	CJB	mg/Kg	0.0939	U	bl
1510014	PH15-02-B	1510014-05	EPA 8015M	n-Pentadecane (C15)	0.00629	JB	mg/Kg	0.0939	U	bl
1510014	PH15-02-C	1510014-06	EPA 8015M	n-Octadecane (C18)	0.0404	CJB	mg/Kg	0.0979	U	bl
1510014	PH15-02-C	1510014-06	EPA 8015M	n-Pentadecane (C15)	0.00627	JB	mg/Kg	0.0979	U	bl
1510014	PH15-02-D	1510014-07	EPA 8015M	n-Octadecane (C18)	0.042	CJB	mg/Kg	0.1304	U	bl
1510014	PH15-03-B	1510014-08	EPA 8015M	n-Octadecane (C18)	0.043	CJB	mg/Kg	0.1029	U	bl
1510014	PH15-03-B	1510014-08	EPA 8015M	n-Pentadecane (C15)	0.0137	JB	mg/Kg	0.1029	U	bl
1510014	PH15-03-C	1510014-09	EPA 8015M	n-Pentadecane (C15)	0.00773	JB	mg/Kg	0.1059	U	bl
1510014	PH15-03-C	1510014-09	EPA 8015M	n-Octadecane (C18)	0.0444	CJB	mg/Kg	0.1059	U	bl
1510014	PH15-03-D	1510014-10	EPA 8015M	n-Octadecane (C18)	0.0478	JB	mg/Kg	0.1021	U	bl
1510014	PH15-04-A	1510014-11	EPA 8015M	n-Pentacosane (C25)	0.181	CJB	mg/Kg	0.3022	U	bl
1510014	PH15-04-A	1510014-11	EPA 8015M	n-Octadecane (C18)	0.0411	JB	mg/Kg	0.3022	U	bl
1510014	PH15-04-A-FD	1510014-12	EPA 8015M	n-Pentadecane (C15)	0.00933	JB	mg/Kg	0.0897	U	bl
1510014	PH15-04-A-FD	1510014-12	EPA 8015M	n-Octadecane (C18)	0.0401	CJB	mg/Kg	0.0897	U	bl
1510014	PH15-04-B	1510014-13	EPA 8015M	n-Octadecane (C18)	0.0437	CJB	mg/Kg	0.0924	U	bl
1510014	PH15-04-B	1510014-13	EPA 8015M	n-Docosane (C22)	0.000831	JB	mg/Kg	0.0924	U	bl
1510014	PH15-04-B	1510014-13	EPA 8015M	n-Pentacosane (C25)	0.0457	CJB	mg/Kg	0.0924	U	bl
1510014	PH15-04-B	1510014-13	EPA 8015M	n-Pentadecane (C15)	0.00499	JB	mg/Kg	0.0924	U	bl
1510014	PH15-04-C	1510014-14	EPA 8015M	n-Octadecane (C18)	0.0423	CJB	mg/Kg	0.1402	U	bl
1510014	PH15-04-C	1510014-14	EPA 8015M	n-Pentacosane (C25)	0.0627	CJB	mg/Kg	0.1402	U	bl
1510014	PH15-04-C	1510014-14	EPA 8015M	n-Pentadecane (C15)	0.00659	JB	mg/Kg	0.1402	U	bl

Sdg	SoilSampID	Lab_ID	AnalMeth	Analyte	Result	Lab_Flag	Units	NFG NFG		validator_ reason_code
								Result	Qualifier	
1510014	PH15-04-C	1510014-14	EPA 8015M	n-Docosane (C22)	0.000982	JB	mg/Kg	0.1402	U	bl
1510014	PH15-04-C	1510014-14	EPA 8015M	n-Nonacosane (C29)	0.00519	JB	mg/Kg	0.1402	U	bl
1510014	PH15-05-A	1510014-15	EPA 8015M	n-Octadecane (C18)	0.0441	JB	mg/Kg	0.0907	U	bl
1510014	PH15-05-B	1510014-16	EPA 8015M	n-Octadecane (C18)	0.0385	CJB	mg/Kg	0.0894	U	bl
1510014	PH15-05-B	1510014-16	EPA 8015M	n-Pentacosane (C25)	0.0493	CJB	mg/Kg	0.0894	U	bl
1510014	PH15-05-B	1510014-16	EPA 8015M	n-Pentadecane (C15)	0.00456	JB	mg/Kg	0.0894	U	bl
1510014	PH15-05-B	1510014-16	EPA 8015M	n-Docosane (C22)	0.00143	JB	mg/Kg	0.0894	U	bl
1510014	PH15-05-C	1510014-17	EPA 8015M	n-Docosane (C22)	0.000904	JB	mg/Kg	0.1005	U	bl
1510014	PH15-05-C	1510014-17	EPA 8015M	n-Octadecane (C18)	0.0456	CJB	mg/Kg	0.1005	U	bl
1510014	PH15-05-C	1510014-17	EPA 8015M	n-Pentacosane (C25)	0.0462	CJB	mg/Kg	0.1005	U	bl
1510014	PH15-05-C	1510014-17	EPA 8015M	n-Pentadecane (C15)	0.00512	JB	mg/Kg	0.1005	U	bl
1510014	PH15-06-C	1510014-18	EPA 8015M	n-Octadecane (C18)	0.0389	CJB	mg/Kg	0.0915	U	bl
1510014	PH15-06-C	1510014-18	EPA 8015M	n-Pentacosane (C25)	0.0541	JB	mg/Kg	0.0915	U	bl
1510014	PH15-07-D	1510014-19	EPA 8015M	n-Octadecane (C18)	0.0337	CJB	mg/Kg	0.0748	U	bl
1510014	PH15-07-D	1510014-19	EPA 8015M	n-Pentacosane (C25)	0.0382	CJB	mg/Kg	0.0748	U	bl
1510014	PH15-07-D-FD	1510014-20	EPA 8015M	n-Docosane (C22)	0.000887	JB	mg/Kg	0.0739	U	bl
1510014	PH15-07-D-FD	1510014-20	EPA 8015M	n-Pentacosane (C25)	0.0369	JB	mg/Kg	0.0739	U	bl
1510014	PH15-01-B	1510014-01	EPA 8015M	n-Eicosane (C20)	0.00303	JB	mg/Kg	0.0978	U	bl
1510014	PH15-01-B	1510014-01	EPA 8015M	n-Hexadecane (C16)	0.00147	JB	mg/Kg	0.0978	U	bl
1510014	PH15-01-B	1510014-01	EPA 8015M	n-Tetradecane (C14)	0.000782	JB	mg/Kg	0.0978	U	bl
1510014	PH15-01-C	1510014-02	EPA 8015M	n-Eicosane (C20)	0.00142	JB	mg/Kg	0.1014	U	bl
1510014	PH15-01-C	1510014-02	EPA 8015M	n-Hexadecane (C16)	0.00112	JB	mg/Kg	0.1014	U	bl
1510014	PH15-01-C	1510014-02	EPA 8015M	n-Tetradecane (C14)	0.000406	JB	mg/Kg	0.1014	U	bl
1510014	PH15-01-D	1510014-03	EPA 8015M	n-Eicosane (C20)	0.00537	JB	mg/Kg	0.0994	U	bl
1510014	PH15-01-D	1510014-03	EPA 8015M	n-Tetradecane (C14)	0.00109	JB	mg/Kg	0.0994	U	bl
1510014	PH15-01-D	1510014-03	EPA 8015M	n-Hexadecane (C16)	0.00278	JB	mg/Kg	0.0994	U	bl
1510014	PH15-02-A	1510014-04	EPA 8015M	n-Tetradecane (C14)	0.000821	JB	mg/Kg	0.1027	U	bl
1510014	PH15-02-B	1510014-05	EPA 8015M	n-Hexadecane (C16)	0.00103	JB	mg/Kg	0.0939	U	bl
1510014	PH15-02-B	1510014-05	EPA 8015M	n-Eicosane (C20)	0.00291	JB	mg/Kg	0.0939	U	bl
1510014	PH15-02-B	1510014-05	EPA 8015M	n-Tetradecane (C14)	0.000845	JB	mg/Kg	0.0939	U	bl
1510014	PH15-02-C	1510014-06	EPA 8015M	n-Hexadecane (C16)	0.000881	JB	mg/Kg	0.0979	U	bl
1510014	PH15-02-C	1510014-06	EPA 8015M	n-Eicosane (C20)	0.00137	JB	mg/Kg	0.0979	U	bl
1510014	PH15-02-C	1510014-06	EPA 8015M	n-Tetradecane (C14)	0.00049	JB	mg/Kg	0.0979	U	bl
1510014	PH15-02-D	1510014-07	EPA 8015M	n-Hexadecane (C16)	0.00183	JB	mg/Kg	0.1304	U	bl
1510014	PH15-02-D	1510014-07	EPA 8015M	n-Eicosane (C20)	0.00287	JB	mg/Kg	0.1304	U	bl
1510014	PH15-02-D	1510014-07	EPA 8015M	n-Tetradecane (C14)	0.00117	JB	mg/Kg	0.1304	U	bl
1510014	PH15-03-B	1510014-08	EPA 8015M	n-Hexadecane (C16)	0.00165	JB	mg/Kg	0.1029	U	bl
1510014	PH15-03-B	1510014-08	EPA 8015M	n-Tetradecane (C14)	0.000926	JB	mg/Kg	0.1029	U	bl
1510014	PH15-03-B	1510014-08	EPA 8015M	n-Eicosane (C20)	0.00515	JB	mg/Kg	0.1029	U	bl
1510014	PH15-03-C	1510014-09	EPA 8015M	n-Hexadecane (C16)	0.00116	JB	mg/Kg	0.1059	U	bl
1510014	PH15-03-C	1510014-09	EPA 8015M	n-Eicosane (C20)	0.00254	JB	mg/Kg	0.1059	U	bl
1510014	PH15-03-C	1510014-09	EPA 8015M	n-Tetradecane (C14)	0.000953	JB	mg/Kg	0.1059	U	bl
1510014	PH15-03-D	1510014-10	EPA 8015M	n-Hexadecane (C16)	0.00194	JB	mg/Kg	0.1021	U	bl
1510014	PH15-03-D	1510014-10	EPA 8015M	n-Tetradecane (C14)	0.000918	JB	mg/Kg	0.1021	U	bl
1510014	PH15-04-A	1510014-11	EPA 8015M	n-Tetradecane (C14)	0.00332	JB	mg/Kg	0.3022	U	bl
1510014	PH15-04-A-FD	1510014-12	EPA 8015M	n-Tetradecane (C14)	0.00233	JB	mg/Kg	0.0897	U	bl
1510014	PH15-04-A-FD	1510014-12	EPA 8015M	n-Hexadecane (C16)	0.00251	JB	mg/Kg	0.0897	U	bl
1510014	PH15-04-B	1510014-13	EPA 8015M	n-Hexadecane (C16)	0.00102	JB	mg/Kg	0.0924	U	bl
1510014	PH15-04-B	1510014-13	EPA 8015M	n-Tetradecane (C14)	0.000739	JB	mg/Kg	0.0924	U	bl
1510014	PH15-04-C	1510014-14	EPA 8015M	n-Hexadecane (C16)	0.000841	JB	mg/Kg	0.1402	U	bl
1510014	PH15-04-C	1510014-14	EPA 8015M	n-Tetradecane (C14)	0.000701	JB	mg/Kg	0.1402	U	bl
1510014	PH15-04-C	1510014-14	EPA 8015M	Total Saturated Hydrocarbons	0.139	JB	mg/Kg	0.1402	U	bl
1510014	PH15-05-B	1510014-16	EPA 8015M	n-Hexadecane (C16)	0.00134	JB	mg/Kg	0.0894	U	bl
1510014	PH15-05-B	1510014-16	EPA 8015M	n-Tetradecane (C14)	0.000715	JB	mg/Kg	0.0894	U	bl
1510014	PH15-05-C	1510014-17	EPA 8015M	n-Tetradecane (C14)	0.000502	JB	mg/Kg	0.1005	U	bl
1510014	PH15-07-D	1510014-19	EPA 8015M	n-Tetradecane (C14)	0.000374	JB	mg/Kg	0.0748	U	bl
1510014	PH15-07-D-FD	1510014-20	EPA 8015M	n-Tetradecane (C14)	0.000665	JB	mg/Kg	0.0739	U	bl
1510014	PH15-04-A	1510014-11	EPA 8015M	Total Saturated Hydrocarbons	2.2		mg/Kg	J		fd
1510014	PH15-04-A	1510014-11	EPA 8015M	Total Petroleum Hydrocarbons (C9-C44)	72.3		mg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8015M	Total Saturated Hydrocarbons	0.787		mg/Kg	J		fd
1510014	PH15-04-A-FD	1510014-12	EPA 8015M	Total Petroleum Hydrocarbons (C9-C44)	30.2		mg/Kg	J		fd
1510014	PH15-07-D	1510014-19	EPA 8015M	Total Saturated Hydrocarbons	0.16	B	mg/Kg	J		fd
1510014	PH15-07-D-FD	1510014-20	EPA 8015M	Total Saturated Hydrocarbons	0.331	B	mg/Kg	J		fd
1510014	PH15-07-D	1510014-19	EPA 9060	Total Organic Carbon	0.028		%	J		fd
1510014	PH15-07-D-FD	1510014-20	EPA 9060	Total Organic Carbon	0.0475		%	J		fd

Table 2. Reason Codes and Explanations

Reason Code	Explanation
bf	Field blank contamination
bl	Laboratory blank contamination
C	Calibration issue
el	Clean-up standard recovery
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding Times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
le	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results