November 2, 2018

James R. Matters
Corman Kokosing Construction, Inc.
12001 Guilford Road
Annapolis Junction, Maryland 20701
(410) 792-9400 (ext 218)
(410) 320-7534
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Re: Geotechnical Sampling and Testing
Maintenance Dredging – Phase 1 – 13-0966(R2)
Sediment Sampling Program – Wetlands License Testing
Sparrows Point, MD
RBB Project No. 16993-0 MD

Dear Mr. Matters:

The Robert B. Balter Company (Balter) has recently completed our drilling and laboratory services for the above-mentioned project. Our work was performed in accordance with our proposal and the supplied Scope of Work from Tradepoint Atlantic. The results of our work are provided below. Detailed geotechnical analyses, evaluations, and recommendations were not part of the scope of this project.

Project Background

Tradepoint Atlantic (TPA) is planning to perform maintenance dredging of the access channel and berthing areas in the Patapsco River between Sparrows Point Terminal and Brewerton Channel. The proposed dredge depths are between 40 feet to 45 feet below mean low water.

Physical and chemical characterization of the material to be dredged was required in order to satisfy the State Wetlands License and the Maryland Port Administration.

This geotechnical data report provides the laboratory testing results for Phase 1 of the proposed dredge work. In total, there are 2 phases of dredging planned. The Phase 1 results were requested by TPA on an expedited basis.

Scope of Work

A total of nine (9) soil borings were performed as part of Phase 1 of this scope. The soil borings (A-1 through A-9) were drilled using a tracked-mounted drill rig. The drill rig was placed on a work barge with spuds and a drilling well that was provided by Corman Marine. Corman Marine navigated the barge to within approximately 10-20 feet of each specified boring location. However, two (2) Phase 1 boring locations (A-1 and A-6) were shifted slightly over 20 feet in order to obtain adequate samples due to deeper than proposed dredge depths at the original sample points. Additionally, multiple samples were taken in the vicinity of Boring A-9 in order to collect adequate sample volume for testing. The approximate boring locations are shown on the attached **Plate 2**, Boring Location Plans.

GPS Coordinates for the planned Boring Locations are provided below. As discussed above, borings were performed within approximately 20 feet of the planned locations. The borings were located by Corman Marine using a handheld GPS unit on the barge.

Table 1 – Soil Boring Locations

Boring	***Depth Sampled (ft.)[(1)]***	***Northing[(2)]***	***Easting[(2)]***	***Comments***
A-1	40	563,106.0	1,460,027.3	Moved approx. 100 feet south
A-2	40	562,988.4	1,459,766.0	---
A-3	40	563,081.9	1,458,856.3	---
A-4	40	562,695.1	1,458,562.7	---
A-5	40	562,115.7	1,458,571.0	---
A-6	40	560,836.0	1,458,601.4	Moved approx. 50 feet west
A-7	40	558,850.9	1,458,833.0	---
A-8	40	557,981.0	1,458,919.5	---
A-9	40	556,837.2	1,459,442.7	Multiple samples taken in close proximimity to A-9

Notes: [(1)] Depth below Mean Low Water
[(2)] Coordinates provided are based on NAD83 Maryland State Plane Zone, US Foot MD83F

Soil borings were advanced to a maximum depth of 40 feet below mean low water, as directed in the scope of work. The borings were advanced in approximate 2-foot depth increments, once the bottom of the water was reached. The approximate depth below mean low water was determined by measuring the water depth with a weighted measuring tape, and recording the tide height at the time of sampling. Samples were collected using 3-inch diameter split spoon samplers, after advancing the 4-inch diameter casing to the required depths. After each advance, the sampler was withdrawn, and collected soils were removed and placed in clean plastic bags marked with the location. The collected soils were visually examined on site by our engineer who estimated their classifications and provided descriptions. After visual classification was complete, the bags were placed in a cooler with ice for return to Balter's laboratory.

Following sample collection, the samples were mixed into composite samples with approximate equal parts from each boring location to create an "average" sample. The samples were mixed in accordance with the supplied scope of work. Phase 1 composite samples were mixed as follows:

- P1-1: Borings A-1 through A-6
- P1-2: Borings A-7 and A-8
- P1-3: Boring A-9 (multiple locations in close proximity to A-9 to collect adequate amount)

The composited sample material was then placed into glass jars, or glass vials with appropriate preservatives depending on the required testing. The glass jars with the composite sample were then kept refrigerated or on ice in a cooler through transport to the environmental testing lab.

Limited physical characteristic laboratory testing was performed on the composite soil samples in Balter's laboratory as well. Testing on the selected soil samples generally included Natural Moisture Contents, Atterberg limits, Sieve Analyses, Hydrometer analyses, and Specific Gravity testing.

Chemical characterization was provided by a National Environmental Laboratory Accreditation Program (NELAP)-certified laboratory. Tests within the Wetlands License scope of work included:

- Priority Pollutant Metals (including Mercury)
- Hexavalent Chromium
- TPH Diesel Range Organics
- TPH Gas Range Organics
- Oil and Grease
- Priority Pollutant Volatile Organic Compounds
- Priority Pollutant Semi-Volatile Organic Compounds
- PCBs
- Cyanide

All of the environmental testing was performed in accordance with the previously approved EPA Methods and Procedures. Proper Chain of Custody (COC) procedures were also used. Completed COC forms have already been submitted to Corman and TPA, and have also been attached to this letter for reference. Samples collected from the Phase 1 area were transported to the testing laboratory within approximately 24-30 hours of collection, which is well within the specified holding times for testing.

Subsurface Conditions

General - The subsurface conditions encountered during our exploration operations are indicative of the conditions at the field test locations at the time of the work. The soil stratigraphy shown on the attached subsurface logs is based on discrete soil and decomposed rock samples taken at the above listed sample intervals. The actual transition between soil types at the boring locations may be more gradual than indicated on the boring logs. Additionally, significant variations may occur outside the specific sample locations.

Sediment Soils – Sediment soils that have deposited within the channels were encountered in each of the borings within the studied areas. Based on visual observations of the collected soil samples, the natural soils consisted of very soft Silt (CL-ML, ML), and Clay (CL, CL-ML).

The attached boring logs include a description and visually estimated classification for each soil layer, DCP Values (where applicable) and boring depths. The method of classification used in preparing the strata descriptions is based on our interpretation of the Unified Soils Classification System (USCS). Visual classifications were performed by an experienced Geotechnical Engineer. Final descriptions on the Boring Logs reflect any laboratory test results.

It should be noted that the boring location plan and the boring log represent an integral part of this report, and separating these figures may lead to misinterpretation by others.

Laboratory Results

General - Composited samples were subjected to laboratory analyses to estimate their classifications according to the Unified Soils Classification System. This testing included natural moisture contents, Atterberg limits determinations, Grain size Analyses (Sieve and Hydrometer), and Specific Gravity. Those results are presented at the end of this letter report and are summarized in the following table.

Table 2 - Classification Test Results for Soil

Sample	*USCS* [1]	*Moisture Content (%)*	*Specific Gravity*	*Atterberg Limits*			*+#200 Sieve (%)*		*-#200 Sieve (%)*	
				LL	**PL**	**PI**	**% Gravel**	**% Sand**	**% Silt**	**%Clay**
P1-1	MH	195.1	2.710	76	43	33	0.0	7.3	43.6	49.1
P1-2	MH	227.7	2.580	86	48	38	0.0	0.8	42.5	56.7
P1-3	MH	270.4	2.723	92	48	44	0.0	0.8	38.3	60.9

Notes: [1] Organic content testing not included in scope of work

It should be noted that the samples were visually identified to contain organic material. However, organic content testing was not included in our scope of work. Therefore, lab testing could not identify whether the soils classify as Organic SILT (OH) materials.

Environmental Testing - Additionally, average composite samples from the areas discussed above were subjected to environmental testing as required in the Scope of Work.

Table 3 – Priority Pollutant Metals Test Results (EPA 6020)[1]

	P1-1 (mg/kg)	***P1-2 (mg/kg)***	***P1-3 (mg/kg)***
Antimony	ND	ND	ND
Arsenic	**31**	**22**	**18**
Beryllium	ND	ND	ND
Cadmium	ND	ND	ND
Chromium	**180**	**130**	**100**
Copper	**420**	**82**	**64**
Lead	**350**	**110**	**78**
Mercury	**0.90**	**0.37**	ND
Nickel	**62**	**59**	**51**
Selenium	ND	ND	ND
Silver	ND	ND	ND
Thallium	ND	ND	ND
Zinc	**1,100**	**430**	**350**

Notes: [1] Not detected at or above reporting limit

Table 3- Hexavalent Chromium Test Results (EPA 7196A)[1]

	P1-1 (mg/kg)	***P1-2 (mg/kg)***	***P1-3 (mg/kg)***
Hexavalent Chromium	ND	ND	ND

Notes: [1] Not detected at or above reporting limit

Table 4 – Total Petroleum Hydrocarbons (EPA 8015) (1)

	P1-1 (mg/kg)	***P1-2 (mg/kg)***	***P1-3 (mg/kg)***
TPH Diesel Range Organics	ND	ND	ND
TPH Gas Range Organics	ND	ND	ND

Notes: (1) Not detected at or above reporting limit

Table 5 – Inorganic Chemicals Test Results

	P1-1 (mg/kg)	***P1-2 (mg/kg)***	***P1-3 (mg/kg)***
Cyanide (EPA 9014)	**7.8(1)**	**5.9**	**5.6**

Notes: (1) Matrix spike exceedances identified

Table 6 – Organic Chemicals Test Results (1)

	P1-1 (mg/kg)	***P1-2 (mg/kg)***	***P1-3 (mg/kg)***
Oil and Grease (EPA 9071B)	ND	ND	ND
PCBs (EPA 8082)	ND	ND	ND

Notes: (1) Not detected at or above reporting limit

Table 7- Priority Pollutant Volatile Organic Compounds (EPA 8260B) (1)

	P1-1 (µg/kg)	***P1-2 (µg/kg)***	***P1-3 (µg/kg)***
1,1,1-Trichloroethane	ND	ND	ND
1,1,2,2-Tetrachloroethane	ND	ND	ND
1,1,2-Trichloroethane	ND	ND	ND
1,1-Dichloroethane	ND	ND	ND
1,1-Dichloroethene	ND	ND	ND
1,2,4-Trichlorobenzene	ND	ND	ND
1,2-Dichlorobenzene	ND	ND	ND
1,2-Dichloroethane	ND	ND	ND
1,2-Dichloropropane	ND	ND	ND
1,3-Dichlorobenzene	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND
2-Chloroethylvinyl Ether	ND	ND	ND
Acrolein	ND	ND	ND
Acrylonitrile	ND	ND	ND
Benzene	ND	ND	ND
Bromodichloromethane	ND	ND	ND
Bromoform	ND	ND	ND
Bromomethane	ND	ND	ND
Carbon tetrachloride	ND	ND	ND
Chlorobenzene	ND	ND	ND
Chloroethane	ND	ND	ND
Chloroform	ND	ND	ND

Notes: (1) Not detected at or above reporting limit

Table 7 (continued) - Priority Pollutant Volatile Organic Compounds (EPA 8260B) [(1)]

Chloromethane	ND	ND	ND
cis-1,3-Dichloropropene	ND	ND	ND
Dibromochloromethane	ND	ND	ND
Ethylbenzene	ND	ND	ND
Methylene chloride	ND	ND	ND
Tetrachloroethene	ND	ND	ND
Toluene	ND	ND	ND
trans-1,2-Dichloroethene	ND	ND	ND
trans-1,3-	ND	ND	ND
Trichloroethene	ND	ND	ND
Trichlorofluoromethane	ND	ND	ND
Vinyl chloride	ND	ND	ND

Notes: [(1)] Not detected at or above reporting limit

Table 8- Priority Pollutant Semi-Volatile Organic Compounds (EPA 8270C) [(1)]

	P1-1 (µg/kg)	***P1-2 (µg/kg)***	***P1-3 (µg/kg)***
1,2,4-Trichlorobenzene	ND	ND	ND
1,2'-Dichlorobenzene	ND	ND	ND
1,2-Diphenylhydrazine	ND	ND	ND
1,3'-Dichlorobenzene	ND	ND	ND
1,4-Dichlorobenzene	ND	ND	ND
2,4,6-Trichlorophenol	ND	ND	ND
2,4-Dichlorophenol	ND	ND	ND
2,4-dimethylphenol	ND	ND	ND
2,4-Dinitrophenol	ND	ND	ND
2,4-Dinitrotoluene	ND	ND	ND
2,6-Dinitrotoluene	ND	ND	ND
2-Chloronaphthalene	ND	ND	ND
2-Chlorophenol	ND	ND	ND
2-Nitrophenol	ND	ND	ND
3,3-Dichlorobenzidine	ND	ND	ND
4,6-dinitro-2-methyl phenol	ND	ND	ND
4-Bromophenylphenyl ether	ND	ND	ND
4-Chloro-3-methyl phenol	ND	ND	ND
4-Chlorophenyl phenyl ether	ND	ND	ND
4-Nitrophenol	ND	ND	ND
Acenaphthene	ND	ND	ND
Acenaphthylene	ND	ND	ND
Anthracene	ND	ND	ND
Benzidine	ND	ND	ND
Benzo(a)anthracene	ND	ND	ND

Notes: [(1)] Not detected at or above reporting limit

Table 8 (continued) - Priority Pollutant Semi-Volatile Organic Compounds (EPA 8270C) [(1)]

Benzo(a)pyrene	ND	ND	ND
Benzo(b)fluoranthene	ND	ND	ND
Benzo(g,h,i)perylene	ND	ND	ND
Benzo(k)fluoranthene	ND	ND	ND
bis(2-chloroethoxy) methane	ND	ND	ND
bis(2-chloroethyl) ether	ND	ND	ND
bis(2-chloroisopropyl) ether	ND	ND	ND
bis(2-ethylhexyl) phthalate	ND	ND	ND
Butyl benzyl phthalate	ND	ND	ND
Chrysene	ND	ND	ND
Dibenz(a,h)anthracene	ND	ND	ND
Diethyl phthalate	ND	ND	ND
Dimethyl phthalate	ND	ND	ND
Di-n-butyl phthalate	ND	ND	ND
Di-n-octyl phthalate	ND	ND	ND
Fluoranthene	ND	ND	ND
Fluorene	ND	ND	ND
Hexachlorobenzene	ND	ND	ND
Hexachlorobutadiene	ND	ND	ND
Hexachlorocyclopentadiene	ND	ND	ND
Hexachloroethane	ND	ND	ND
Indeno(1,2,3-c,d)Pyrene	ND	ND	ND
Isophorone	ND	ND	ND
Naphthalene	**71**	ND	ND
Nitrobenzene	ND	ND	ND
N-Nitrosodimethylamine	ND	ND	ND
N-Nitrosodi-n-propyl amine	ND	ND	ND
N-Nitrosodiphenylamine	ND	ND	ND
Pentachlorophenol	ND	ND	ND
Phenanthrene	ND	ND	ND
Phenol	ND	ND	ND
Pyrene	ND	ND	ND

Notes: [(1)] Not detected at or above reporting limit

Environmental recommendations or interpretation of test results was not included in Balter's scope of work.

We appreciated the opportunity to assist you with this project. If you should have any comments or questions, please feel free to contact us.

Sincerely,

THE ROBERT B. BALTER COMPANY

Professional Certification. I hereby certify that these documents were prepared or approved by me, and that I am a duly licensed professional engineer under the laws of the State of Maryland. License No. 48168, Expiration Date: 01/06/2020

11/2/2018

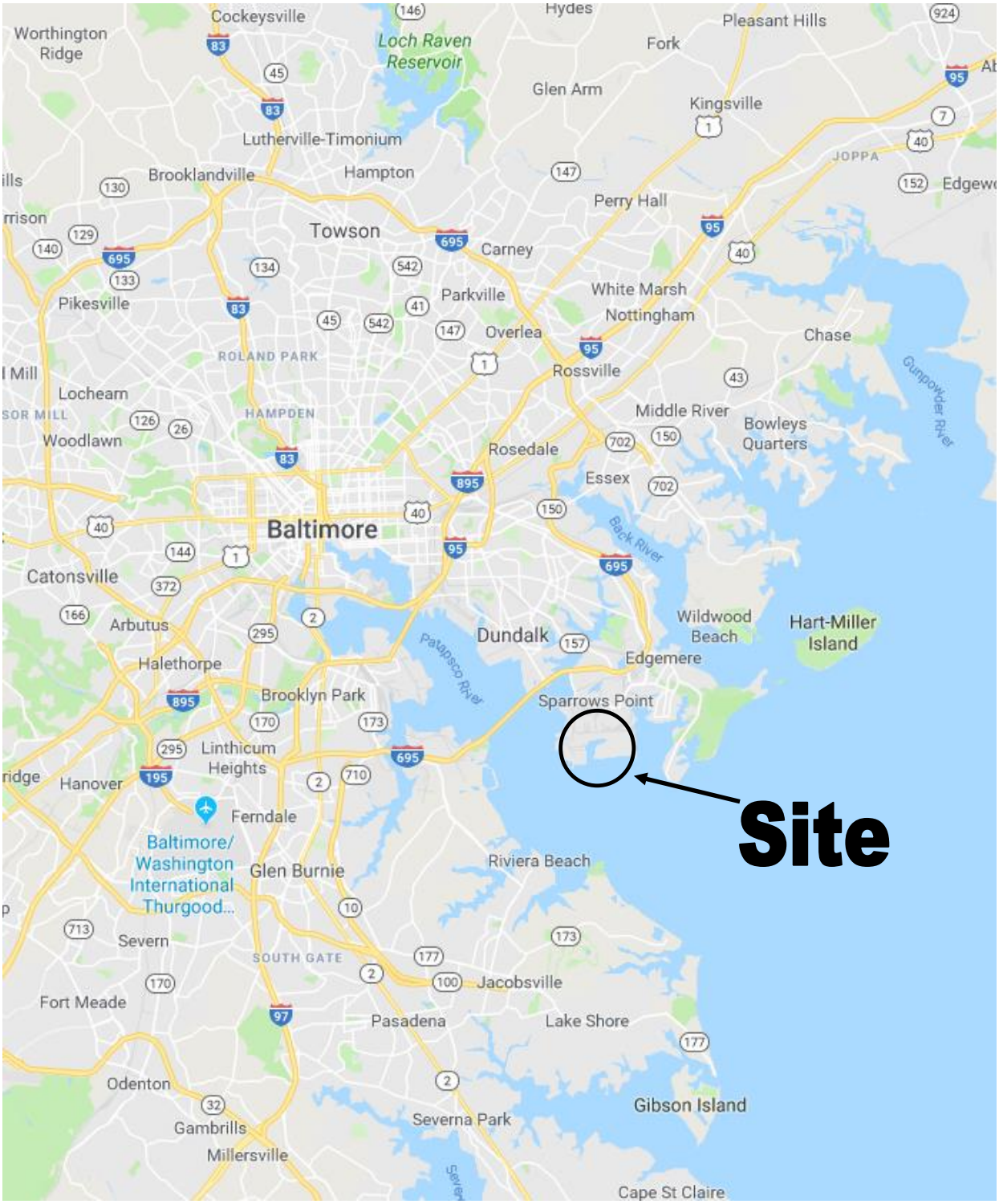
Matthew J. Leone, P.E.
Geotechnical Engineer

STATE OF MARYLAND
MATTHEW J. LEONE
48168
PROFESSIONAL ENGINEER

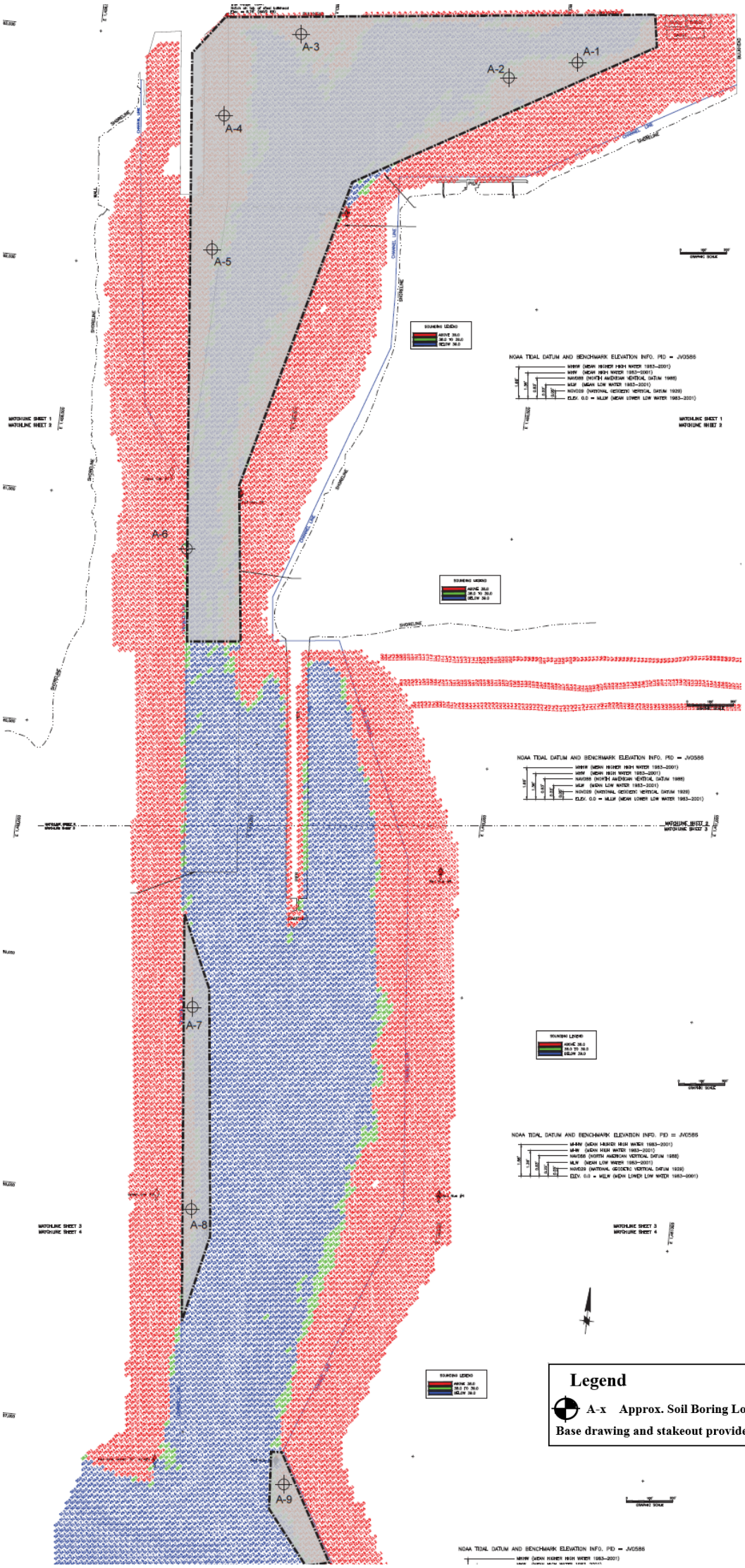
11/2/2018

Kristopher M. Crist, P.G., P.E.
Senior Engineer

STATE OF MARYLAND
KRISTOPHER M CRIST
No. 41312
PROFESSIONAL ENGINEER



Sparrows Point Dredging **Sparrows Point, MD** THE ROBERT B. BALTER COMPANY® Geotechnical and Geo-environmental Engineers	**Site Vicinity Map**		**Project No.** **16993-0 MD**
	Scale: None	**Date: NOV 2018**	**PLATE 1**



THE ROBERT B. BALTER COMPANY®
Geotechnical and Geo-environmental Engineers

Subsurface Sampling
Sparrows Point Maint. Dredging
Sparrows Point, Maryland

Project No. 16770-0

PLATE 2
Boring Location Plan

APPENDIX A - BORING LOGS

THE ROBERT B. BALTER COMPANY

IDENTIFICATION OF SOIL SAMPLES

Soils are described in the boring logs according to the following criteria with the principal constituents written in capital letters. Other constituents are preceded by descriptive terminology that is used to denote the percentage of weight of each component. Soil descriptions are determined visually except where laboratory classification test data are available. Classifications are based on The Robert B. Balter Company's interpretation of ASTM D 2487-00.

COARSE GRAINED SOIL > 50% Retained on No. 200 Sieve	**GRAVEL**	0 to 5% Fines	Well Graded		**GW**	GRAVEL
			Poorly Graded		**GP**	GRAVEL
		6 to 12% Fines	Silty Fines	Well Graded	**GW-GM**	GRAVEL with Silt
				Poorly Graded	**GP-GM**	GRAVEL with Silt
			Clayey Fines	Well Graded	**GW-GC**	GRAVEL with Clay
				Poorly Graded	**GP-GC**	GRAVEL with Clay
		13 to 50% Fines	Silty Fines		**GM**	Silty GRAVEL
			Silty Clay Fines		**GC-GM**	Silty, Clayey GRAVEL
			Clayey Fines		**GC**	Clayey GRAVEL
	SAND	0 to 5% Fines	Well Graded		**SW**	SAND
			Poorly Graded		**SP**	SAND
		6 to 12% Fines	Silty Fines	Well Graded	**SW-SM**	SAND with Silt
				Poorly Graded	**SP-SM**	SAND with Silt
			Clayey Fines	Well Graded	**SW-SC**	SAND with Clay
				Poorly Graded	**SP-SC**	SAND with Clay
		13 to 50% Fines	Silty Fines		**SM**	Silty SAND
			Silty, Clayey Fines		**SC-SM**	Silty, Clayey SAND
			Clayey Fines		**SC**	Clayey SAND
FINE GRAINED SOIL ≥ 50% Passing No. 200 Sieve	**SILT & CLAY (LL<50)**	Low Plastic Fines, PI<4	Plots below "A" line		**ML**	SILT
		Low Plastic Fines, 4≤PI≤7	Plots on or above "A" line		**CL-ML**	Silty CLAY
		Plastic Fines, PI>7	Plots on or above "A" line		**CL**	Lean CLAY
		Significant Organics, PI<4	Plots below "A" line		**OL**	Organic SILT
		Significant Organics, PI≥4	Plots on or above "A" line		**OL**	Organic CLAY
	SILT & CLAY (LL≥50)	Elastic Fines	Plots below "A" line		**MH**	Elastic SILT
		Plastic Fines	Plots on or above "A" line		**CH**	Fat CLAY
		Significant Organics	Plots below "A" line		**OH**	Organic SILT
		Significant Organics	Plots on or above "A" line		**OH**	Organic CLAY
HIGHLY ORGANIC SOIL		Dark, highly organic, decomposed vegetative tissue			**PT**	PEAT

ADDITIONAL TERMINOLOGY:

Descriptive Components

Descriptive Terms	Proportions
Trace	1 - 5%
Little (Sand, Gravel)	6 - 14%
With (Sand, Gravel)	15 – 30%
With (Silt, Clay)	6 – 12%
Adjective Form (**Sandy, Gravelly**)	31 - 50%
Adjective Form (**Silty, Clayey**)	13 - 50%

Density or Consistency

SAND and GRAVEL		SILT and CLAY	
N-Value	**Density**	**N-Value**	**Consistency**
0-4	Very Loose	0-1	Very Soft
5-10	Loose	2-4	Soft
11-30	Medium Dense	5-8	Medium Stiff
31-50	Dense	9-15	Stiff
> 50	Very Dense	16-30	Very Stiff
		> 30	Hard

Fill materials are placed by man, and may be identified by unnatural artifacts, unnatural mixed grain sizes or layering, or trustworthy documentation of fill placement.
Possible Fill materials are difficult to distinguish from natural soils, exhibiting minor distinctions.
Decomposed Rock consists of residual soil with SPT N-values between 50 blows per foot and blows per 4 inches (50/4").
Highly Weathered Rock consists of residual soil with SPT N-values between 50/3" and 50/1".

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

BORING LOG

BORING A-1

CLIENT Corman Kokosing **PROJECT NAME** Sparrows Point Sediment Sampling

PROJECT LOCATION Sparrows Point , MD **PROJECT NUMBER** 16993-0 **DATE TESTED**

RIG Tracked Mobile B45 **METHOD** Rotary Wash **SAMPLER:** 3-in OD SS **HAMMER:** 140# **FALL:** 30" **AUTO?** Yes

DATE STARTED 10/22/18 **COMPLETED** 10/22/18

DRILLER J. Derubeis **HELPER** Dustin Hurd

REVIEWED BY Matt Leone **SITE DELAYS**

LOCATION 100' South **BULK SAMPLES**

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)

DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	STRATUM CHANGE DEPTH/EL (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION	PP (tsf)	NMC %	- #200	ATTERBERGS PL	ATTERBERGS LL	ATTERBERGS PI	REMARKS
								SURFACE EL = Unknown							
								Water to 38' Below Mean Low Water							
10															
20															
30															
40	S1	WOH-WOH-WOH-WOH	0	38.0 40.0		MH		Very Wet, Very Soft, Dark Gray and Black Elastic SILT with Clay and Organics Terminated at 40.0 feet							

REMARKS:

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Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
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BORING LOG

BORING A-2

CLIENT Corman Kokosing **PROJECT NAME** Sparrows Point Sediment Sampling

PROJECT LOCATION Sparrows Point , MD **PROJECT NUMBER** 16993-0 **DATE TESTED**

RIG Tracked Mobile B45 **METHOD** Rotary Wash **SAMPLER:** 3-in OD SS **HAMMER:** 140# **FALL:** 30" **AUTO?** Yes

DATE STARTED 10/22/18 **COMPLETED** 10/22/18

DRILLER J. Derubeis **HELPER** Dustin Hurd

REVIEWED BY Matt Leone **SITE DELAYS**

LOCATION As Staked **BULK SAMPLES**

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)

DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	STRATUM CHANGE DEPTH/EL (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION	PP (tsf)	NMC %	- #200	ATTERBERGS PL	ATTERBERGS LL	ATTERBERGS PI	REMARKS
								SURFACE EL = Unknown							
								Water to 38' Below Mean Low Water							
10															
20															
30															
40	S1	WOH-WOH-WOH-WOH	0	38.0 40.0		MH		Very Wet, Very Soft, Dark Gray and Black Elastic SILT with Clay and Organics Terminated at 40.0 feet							

REMARKS:

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BORING LOG

BORING A-3

CLIENT Corman Kokosing **PROJECT NAME** Sparrows Point Sediment Sampling

PROJECT LOCATION Sparrows Point , MD **PROJECT NUMBER** 16993-0 **DATE TESTED**

RIG Tracked Mobile B45 **METHOD** Rotary Wash **SAMPLER:** 3-in OD SS **HAMMER:** 140# **FALL:** 30" **AUTO?** Yes

DATE STARTED 10/22/18 **COMPLETED** 10/22/18

DRILLER J. Derubeis **HELPER** Dustin Hurd

REVIEWED BY Matt Leone **SITE DELAYS**

LOCATION As Staked **BULK SAMPLES**

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)

DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	STRATUM CHANGE DEPTH/EL (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION	PP (tsf)	NMC %	- #200	ATTERBERGS PL	ATTERBERGS LL	ATTERBERGS PI	REMARKS
								SURFACE EL = Unknown							
								Water to 37.5' Below Mean Low Water							
10															
20															
30															
				37.5											
40	S1	WOH-WOH-WOH-WOH	0	40.0		MH		Very Wet, Very Soft, Dark Gray and Black Elastic SILT with Clay and Organics							
								Terminated at 40.0 feet							

REMARKS:

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Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

BORING LOG

BORING A-4

CLIENT Corman Kokosing **PROJECT NAME** Sparrows Point Sediment Sampling

PROJECT LOCATION Sparrows Point , MD **PROJECT NUMBER** 16993-0 **DATE TESTED**

RIG Tracked Mobile B45 **METHOD** Rotary Wash **SAMPLER:** 3-in OD SS **HAMMER:** 140# **FALL:** 30" **AUTO?** Yes

DATE STARTED 10/22/18 **COMPLETED** 10/22/18

DRILLER J. Derubeis **HELPER** Dustin Hurd

REVIEWED BY Matt Leone **SITE DELAYS**

LOCATION As Staked **BULK SAMPLES**

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)

DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	STRATUM CHANGE DEPTH/EL (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION	PP (tsf)	NMC %	- #200	ATTERBERGS PL	ATTERBERGS LL	ATTERBERGS PI	REMARKS
								SURFACE EL = Unknown							
								Water to 33' Below Mean Low Water							
10															
20															
30															
	S1	WOH-WOH-	0	33.0		MH		Very Wet, Very Soft, Dark Gray and Black Elastic SILT with Clay and Organics							
	S2	WOH-WOH	0												
	S3	WOH-WOH-	0												
40	S4	WOH-WOH		40.0				Terminated at 40.0 feet							
		WOH-WOH-													
		WOH-WOH													
		WOH-WOH													

REMARKS:

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

BORING LOG

BORING A-5

CLIENT Corman Kokosing **PROJECT NAME** Sparrows Point Sediment Sampling

PROJECT LOCATION Sparrows Point , MD **PROJECT NUMBER** 16993-0 **DATE TESTED**

RIG Tracked Mobile B45 **METHOD** Rotary Wash **SAMPLER:** 3-in OD SS **HAMMER:** 140# **FALL:** 30" **AUTO?** Yes

DATE STARTED 10/22/18 **COMPLETED** 10/22/18

DRILLER J. Derubeis **HELPER** Dustin Hurd

REVIEWED BY Matt Leone **SITE DELAYS**

LOCATION As Staked **BULK SAMPLES**

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)

DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	STRATUM CHANGE DEPTH/EL (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION	PP (tsf)	NMC %	- #200	ATTERBERGS PL	ATTERBERGS LL	ATTERBERGS PI	REMARKS
								SURFACE EL = Unknown							
								Water to 33' Below Mean Low Water							
10															
20															
30															
	S1	WOH- WOH-	0	33.0		MH		Very Wet, Very Soft, Dark Gray and Black Elastic SILT with Clay and Organics							
	S2	WOH- WOH	0												
		WOH-													
40	S3	WOH- WOH- WOH	0	40.0				Terminated at 40.0 feet							
		WOH- WOH- WOH- WOH													

REMARKS:

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

BORING LOG

BORING A-6

CLIENT Corman Kokosing **PROJECT NAME** Sparrows Point Sediment Sampling

PROJECT LOCATION Sparrows Point , MD **PROJECT NUMBER** 16993-0 **DATE TESTED**

RIG Tracked Mobile B45 **METHOD** Rotary Wash **SAMPLER:** 3-in OD SS **HAMMER:** 140# **FALL:** 30" **AUTO?** Yes

DATE STARTED 10/22/18 **COMPLETED** 10/22/18

DRILLER J. Derubeis **HELPER** Dustin Hurd

REVIEWED BY Matt Leone **SITE DELAYS**

LOCATION 50' West **BULK SAMPLES**

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)

DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	STRATUM CHANGE DEPTH/EL (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION	PP (tsf)	NMC %	- #200	ATTERBERGS PL	ATTERBERGS LL	ATTERBERGS PI	REMARKS
								SURFACE EL = Unknown							
								Water to 36' Below Mean Low Water							
10															
20															
30															
	S1	WOH-WOH-	0	36.0		MH		Very Wet, Very Soft, Dark Gray and Black Elastic SILT with Clay and Organics							
40	S2	WOH-WOH	0	40.0				Terminated at 40.0 feet							
		WOH-WOH-WOH-WOH													

REMARKS:

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

BORING LOG

BORING A-7

CLIENT Corman Kokosing **PROJECT NAME** Sparrows Point Sediment Sampling

PROJECT LOCATION Sparrows Point , MD **PROJECT NUMBER** 16993-0 **DATE TESTED**

RIG Tracked Mobile B45 **METHOD** Rotary Wash **SAMPLER:** 3-in OD SS **HAMMER:** 140# **FALL:** 30" **AUTO?** Yes

DATE STARTED 10/22/18 **COMPLETED** 10/22/18

DRILLER J. Derubeis **HELPER** Dustin Hurd

REVIEWED BY Matt Leone **SITE DELAYS**

LOCATION As Staked **BULK SAMPLES**

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)

DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	STRATUM CHANGE DEPTH/EL (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION	PP (tsf)	NMC %	- #200	ATTERBERGS PL	ATTERBERGS LL	ATTERBERGS PI	REMARKS
								SURFACE EL = Unknown							
								Water to 36' Below Mean Low Water							
10															
20															
30															
	S1	WOH-WOH-	0	36.0		MH		Very Wet, Very Soft, Dark Gray and Black Elastic SILT with Clay and Organics							
40	S2	WOH-WOH	0	40.0				Terminated at 40.0 feet							
		WOH-WOH-WOH-WOH													

REMARKS:

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

BORING LOG

BORING A-8

CLIENT Corman Kokosing **PROJECT NAME** Sparrows Point Sediment Sampling

PROJECT LOCATION Sparrows Point , MD **PROJECT NUMBER** 16993-0 **DATE TESTED**

RIG Tracked Mobile B45 **METHOD** Rotary Wash **SAMPLER:** 3-in OD SS **HAMMER:** 140# **FALL:** 30" **AUTO?** Yes

DATE STARTED 10/23/18 **COMPLETED** 10/23/18

DRILLER Dustin Hurd **HELPER** Kenny Putman

REVIEWED BY Matt Leone **SITE DELAYS**

LOCATION As Staked **BULK SAMPLES**

WATER LEVELS

DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)

DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	STRATUM CHANGE DEPTH/EL (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION	PP (tsf)	NMC %	- #200	ATTERBERGS PL	ATTERBERGS LL	ATTERBERGS PI	REMARKS
								SURFACE EL = Unknown							
								Water to 36.5' Below Mean Low Water							
10															
20															
30															
	S1	WOH-WOH-	0	36.5		MH		Very Wet, Very Soft, Dark Gray and Black Elastic SILT with Clay and Organics							
40	S2	WOH-WOH	0	40.0				Slightly stiffer at 38.5'							
		WOH-WOH-WOH						Terminated at 40.0 feet							

REMARKS:

The Robert B. Balter Company
Geotechnical and Environmental Engineers
Materials and Construction Inspection and Testing
Telephone No. (410) 363-1555
www.balterco.com

BORING LOG

BORING A-9

CLIENT Corman Kokosing **PROJECT NAME** Sparrows Point Sediment Sampling

PROJECT LOCATION Sparrows Point , MD **PROJECT NUMBER** 16993-0 **DATE TESTED**

RIG Tracked Mobile B45 **METHOD** Rotary Wash **SAMPLER:** 3-in OD SS **HAMMER:** 140# **FALL:** 30" **AUTO?** Yes

DATE STARTED 10/23/18 **COMPLETED** 10/23/18

DRILLER Dustin Hurd **HELPER** Kenny Putman

REVIEWED BY Matt Leone **SITE DELAYS**

LOCATION As Staked **BULK SAMPLES**

WATER LEVELS

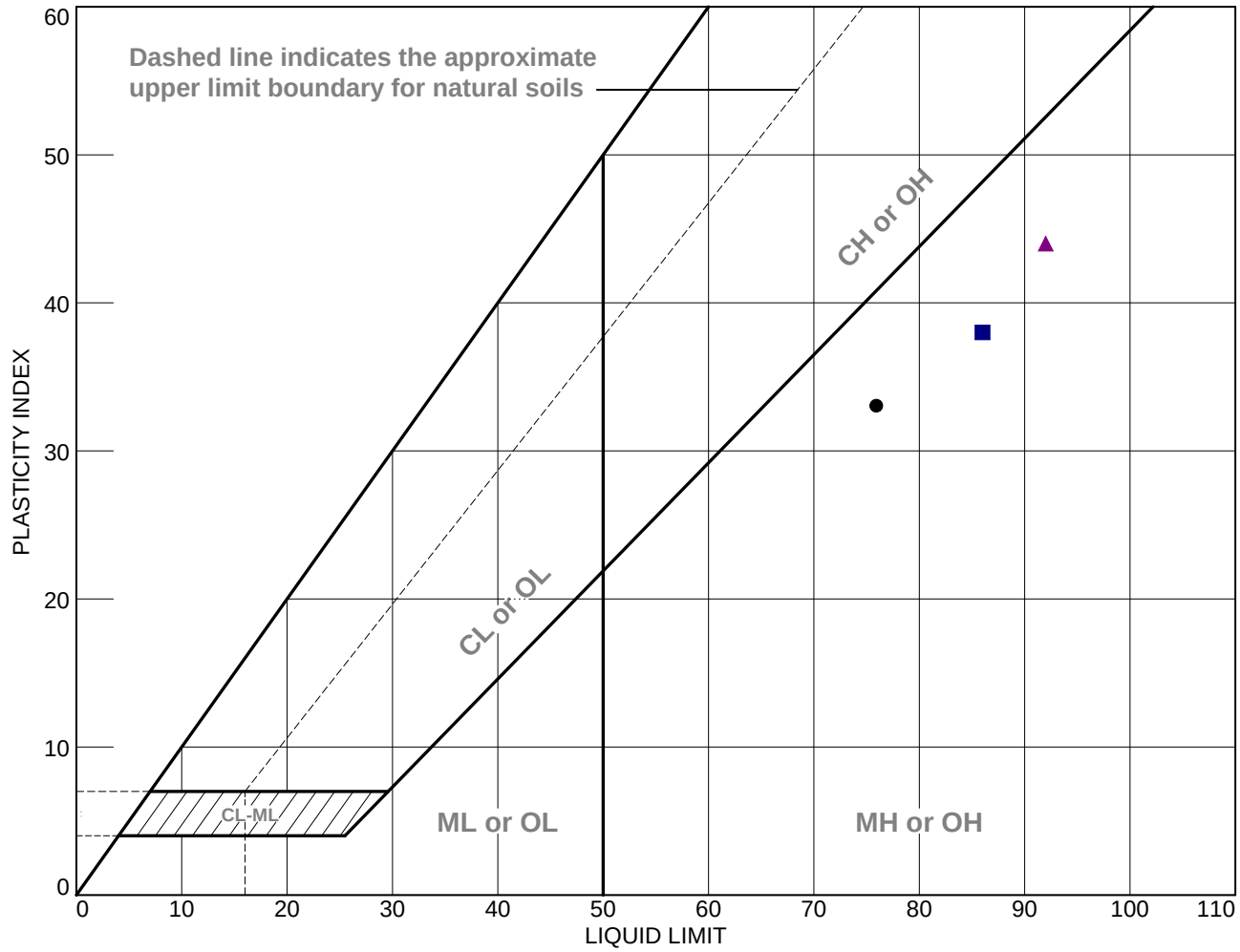
DATE	TIME	ELAPSED HOURS	CASING DEPTH (ft)	HOLE DEPTH (ft)	WATER DEPTH (ft)	WATER ELEV (ft)

DEPTH (ft)	SAMPLE TYPE AND NUMBER	SPT BLOWS/6" OR REC IN/IN %	N VALUE OR CORE RQD	STRATUM CHANGE DEPTH/EL (ft)	GRAPHIC LOG	USCS	WATER LEVEL	MATERIAL DESCRIPTION	PP (tsf)	NMC %	- #200	ATTERBERGS PL	ATTERBERGS LL	ATTERBERGS PI	REMARKS
								SURFACE EL = Unknown							
								Water to 38' Below Mean Low Water							
10															
20															
30															
40	S1	WOH-WOH-WOH-WOH	0	38.0		MH		Very Wet, Very Soft, Dark Gray and Black Elastic SILT with Clay and Organics							(1)
				40.0				Terminated at 40.0 feet							

REMARKS: (1)Samples taken from multiple locations in close proximity to A-9

APPENDIX B - LABORATORY TEST RESULTS

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

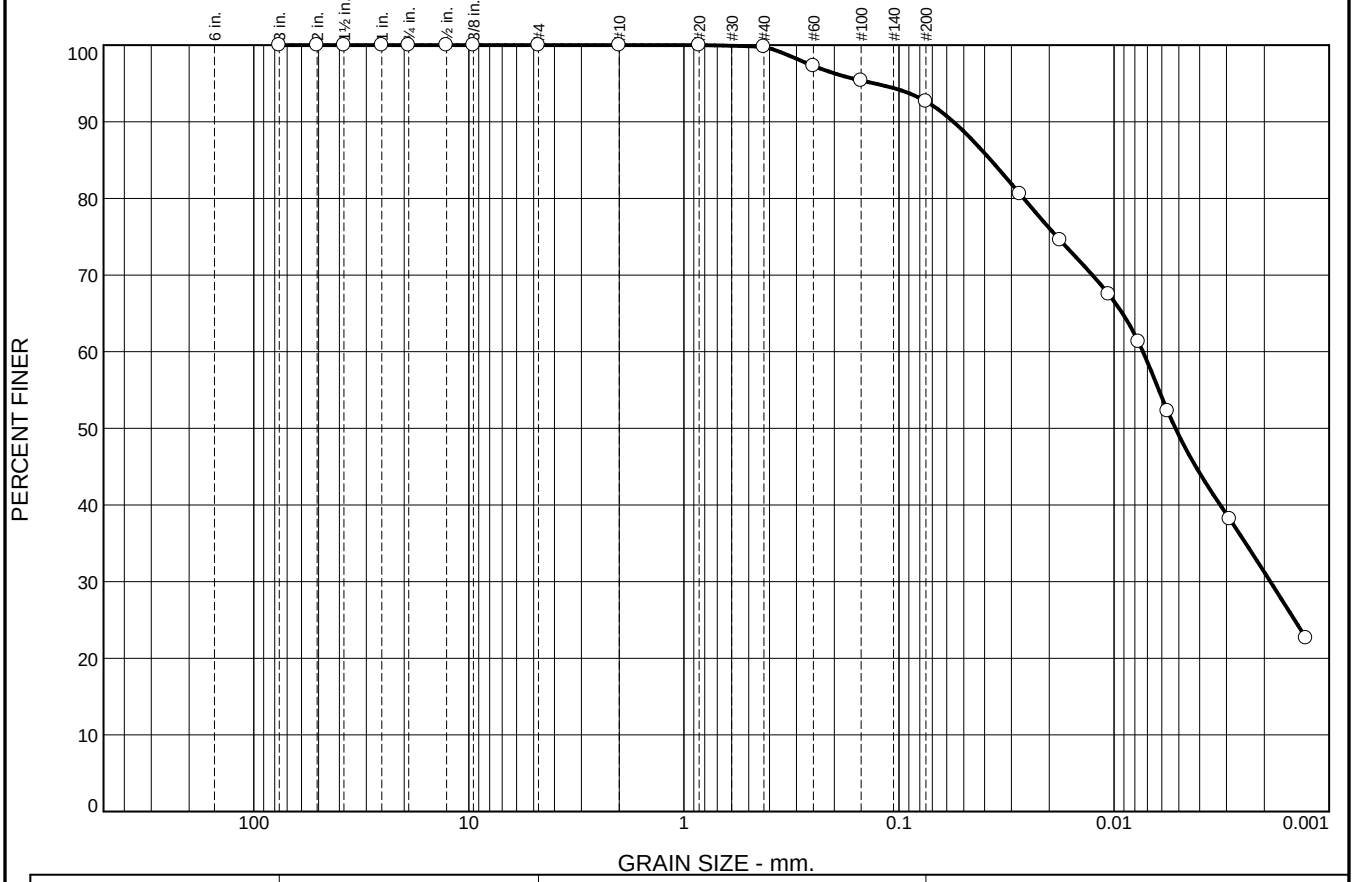
SYMBOL	SOURCE	SAMPLE NO.	DEPTH	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	USCS
●	P1-1	1	Composite	195.1	43	76	33	MH
■	P1-2	1	Composite	227.7	48	86	38	MH
▲	P1-3	1	Composite	270.4	48	92	44	MH

The Robert B. Balter Company

Client: Corman Kokosing Construction, Inc
Project: Sparrows Point Sediment

Project No.: 16993-0 **Figure**

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.2	7.1	43.6	49.1

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_u
○	76	43	0.0374	0.0073	0.0052	0.0019				

Material Description	USCS	AASHTO
○ Dark Gray Elastic Silt	MH	A-7-5(40)

Project No. 16993-0 **Client:** Corman Kokosing Construction, Inc

Project: Sparrows Point Sediment

○ **Source of Sample:** P1-1 **Depth:** Composite **Sample Number:** 1

Remarks:

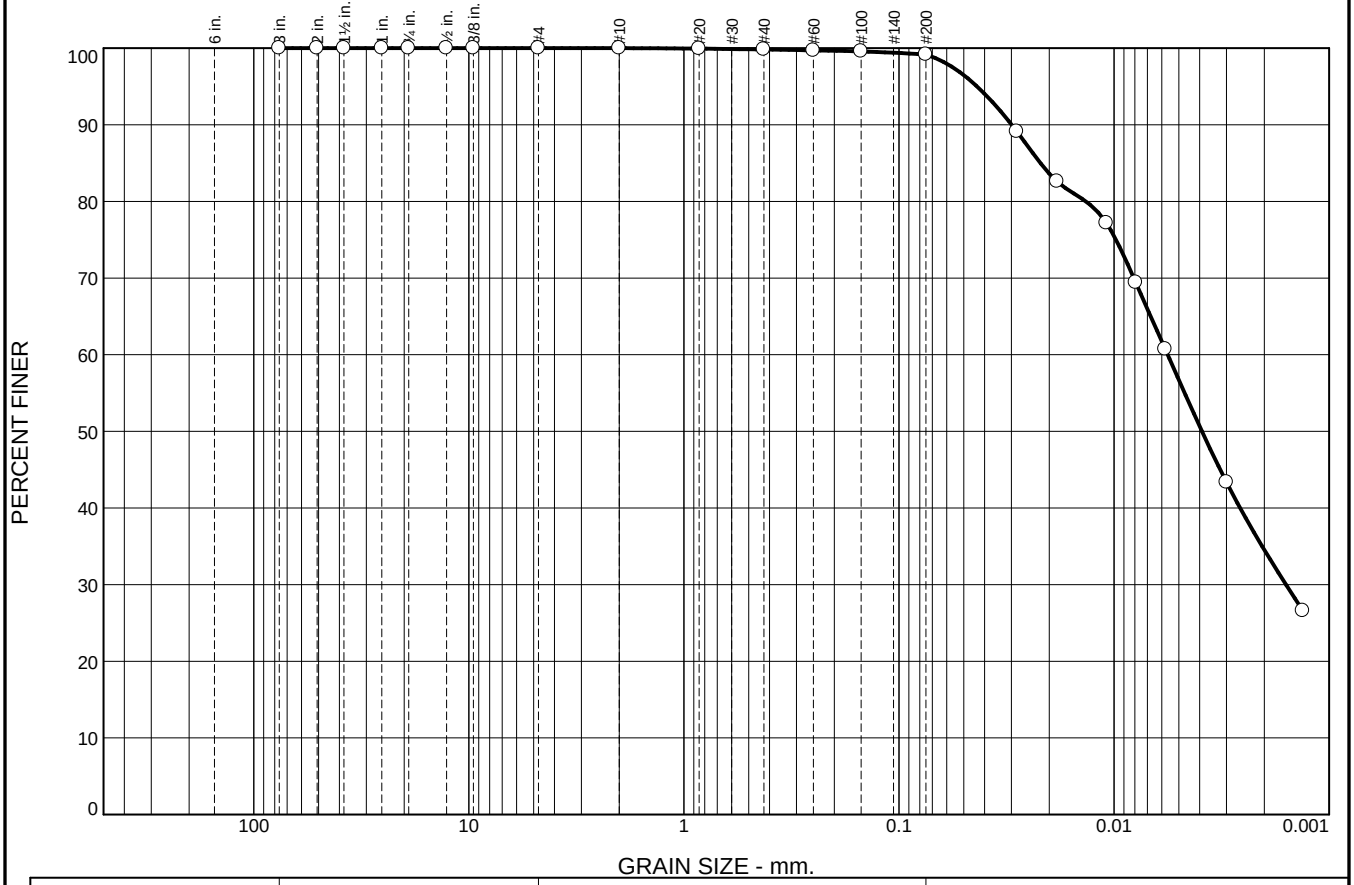
○Specific gravity = 2.710

The Robert B. Balter Company

Figure

Tested By: TA **Checked By:** SK

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.2	0.6	42.5	56.7

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_u
○	86	48	0.0220	0.0056	0.0039	0.0016				

Material Description	USCS	AASHTO
○ Dark Gray Elastic Silt	MH	A-7-5(51)

Project No. 16993-0 **Client:** Corman Kokosing Construction, Inc

Project: Sparrows Point Sediment

○ **Source of Sample:** P1-2 **Depth:** Composite **Sample Number:** 1

Remarks:

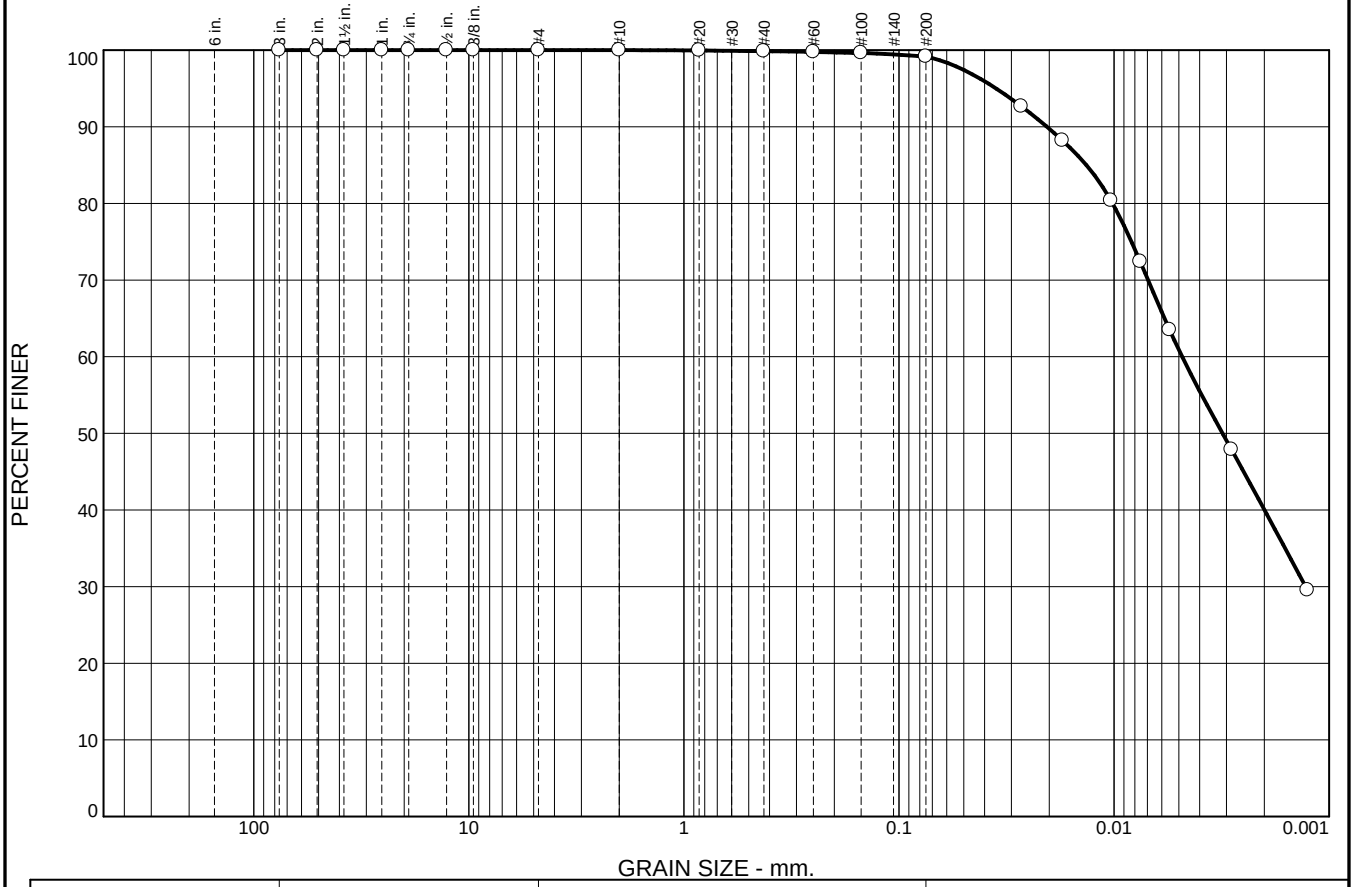
○Specific gravity = 2.580

The Robert B. Balter Company

Figure

Tested By: TA **Checked By:** SK

Particle Size Distribution Report



	% +3"	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.1	0.7	38.3	60.9

	LL	PL	D_{85}	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_C	C_u
○	92	48	0.0135	0.0048	0.0031	0.0013				

Material Description	USCS	AASHTO
○ Dark Gray Elastic Silt	MH	A-7-5(58)

Project No. 16993-0 **Client:** Corman Kokosing Construction, Inc

Project: Sparrows Point Sediment

○ **Source of Sample:** P1-3 **Depth:** Composite **Sample Number:** 1

Remarks:

○Specific gravity = 2.723

The Robert B. Balter Company

Figure

Tested By: TA **Checked By:** SK

APPENDIX C – ENVIRONMENTAL TESTING RESULTS

Analytical Report for

The Robert B. Balter Company

Certificate of Analysis No.: 18102309

Project Manager: Matt Leone
Project Name : Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point, MD
Project ID : 16993-0

November 1, 2018

Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228
Phone: (410) 747-8770
Fax: (410) 788-8723

OFFICES:
6630 BALTIMORE NATIONAL PIKE
ROUTE 40 WEST
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410-747-8770
800-932-9047
FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

November 1, 2018

Matt Leone
The Robert B. Balter Company
18 Music Fair Road
Owings Mills, MD 21117

Reference: PSS Work Order(s) No: **18102309**
Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point, MD
Project ID.: 16993-0

Dear Matt Leone :

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered **18102309**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 27, 2018, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt , the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal

Dan Prucnal
Laboratory Manager

Sample Summary

Client Name: The Robert B. Balter Company

Project Name: Sparrows Point - Wetlands Lic.

Work Order Number(s): 18102309

Project ID: 16993-0

The following samples were received under chain of custody by Phase Separation Science (PSS) on 10/23/2018 at 11:15 am

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
18102309-001	P1-1 Wetlands	SOIL	10/22/18 17:00
18102309-002	Trip Blank	WATER	10/23/18 11:15

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

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BALTIMORE, MD 21228
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800-932-9047
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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 18102309

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point, MD
Project ID: 16993-0

Sample ID: P1-1 Wetlands **Date/Time Sampled: 10/22/2018 17:00** **PSS Sample ID: 18102309-001**
Matrix: SOIL **Date/Time Received: 10/23/2018 11:15** **% Solids: 32**

Oil and Grease — Analytical Method: EPA 9071 B-Modified

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Oil & Grease, Total Recovered	ND	mg/kg	160		1	10/31/18	10/31/18 13:19	1022

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	7.0		1	10/25/18	10/25/18 17:35	1051
Arsenic	**31**	mg/kg	1.4		1	10/25/18	10/25/18 17:35	1051
Beryllium	ND	mg/kg	7.0		1	10/25/18	10/25/18 17:35	1051
Cadmium	ND	mg/kg	7.0		1	10/25/18	10/25/18 17:35	1051
Chromium	**180**	mg/kg	7.0		1	10/25/18	10/25/18 17:35	1051
Copper	**420**	mg/kg	7.0		1	10/25/18	10/25/18 17:35	1051
Lead	**350**	mg/kg	7.0		1	10/25/18	10/25/18 17:35	1051
Mercury	**0.90**	mg/kg	0.28		1	10/25/18	10/25/18 17:35	1051
Nickel	**62**	mg/kg	7.0		1	10/25/18	10/25/18 17:35	1051
Selenium	ND	mg/kg	7.0		1	10/25/18	10/25/18 17:35	1051
Silver	ND	mg/kg	7.0		1	10/25/18	10/25/18 17:35	1051
Thallium	ND	mg/kg	5.6		1	10/25/18	10/26/18 17:04	1051
Zinc	**1,100**	mg/kg	28		1	10/25/18	10/25/18 17:35	1051

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	3.1		1	10/23/18	10/24/18 13:51	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	32		1	10/26/18	10/30/18 15:54	1059

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FAX 410-788-8723

PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 18102309

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point, MD
Project ID: 16993-0

Sample ID: P1-1 Wetlands **Date/Time Sampled: 10/22/2018 17:00** **PSS Sample ID: 18102309-001**
Matrix: SOIL **Date/Time Received: 10/23/2018 11:15** **% Solids: 32**

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	280		1	10/25/18	10/25/18 09:15	1035

Polychlorinated Biphenyls — Analytical Method: SW-846 8082 A — Preparation Method: SW3550C — Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.16		1	10/26/18	10/29/18 12:18	1029
PCB-1221	ND	mg/kg	0.16		1	10/26/18	10/29/18 12:18	1029
PCB-1232	ND	mg/kg	0.16		1	10/26/18	10/29/18 12:18	1029
PCB-1242	ND	mg/kg	0.16		1	10/26/18	10/29/18 12:18	1029
PCB-1248	ND	mg/kg	0.16		1	10/26/18	10/29/18 12:18	1029
PCB-1254	ND	mg/kg	0.16		1	10/26/18	10/29/18 12:18	1029
PCB-1260	ND	mg/kg	0.16		1	10/26/18	10/29/18 12:18	1029

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 18102309

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point, MD
Project ID: 16993-0

Sample ID: P1-1 Wetlands **Date/Time Sampled: 10/22/2018 17:00** **PSS Sample ID: 18102309-001**
Matrix: SOIL **Date/Time Received: 10/23/2018 11:15** **% Solids: 32**

PP Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/kg	85		1	10/23/18	10/23/18 15:00	1011
Acrylonitrile	ND	ug/kg	85		1	10/23/18	10/23/18 15:00	1011
Benzene	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Bromodichloromethane	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Bromoform	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Bromomethane	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Carbon tetrachloride	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Chlorobenzene	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Chloroethane	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
2-Chloroethyl Vinyl ether	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Chloroform	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Chloromethane	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Dibromochloromethane	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
1,2-Dichlorobenzene	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
1,3-Dichlorobenzene	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
1,4-Dichlorobenzene	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
1,1-Dichloroethane	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
1,2-Dichloroethane	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
1,1-Dichloroethene	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
1,2-Dichloropropane	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
cis-1,3-Dichloropropene	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
trans-1,2-Dichloroethene	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
trans-1,3-Dichloropropene	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Ethylbenzene	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Methylene chloride	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Tetrachloroethene	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Toluene	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
1,2,4-Trichlorobenzene	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
1,1,1-Trichloroethane	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 18102309

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.

Project Location: Sparrows Point, MD

Project ID: 16993-0

Sample ID: P1-1 Wetlands **Date/Time Sampled: 10/22/2018 17:00** **PSS Sample ID: 18102309-001**

Matrix: SOIL **Date/Time Received: 10/23/2018 11:15** **% Solids: 32**

PP Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,1,2-Trichloroethane	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Trichloroethene	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Trichlorofluoromethane	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011
Vinyl chloride	ND	ug/kg	21		1	10/23/18	10/23/18 15:00	1011

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Project Location: Sparrows Point, MD
Project ID: 16993-0

Sample ID: P1-1 Wetlands **Date/Time Sampled: 10/22/2018 17:00** **PSS Sample ID: 18102309-001**
Matrix: SOIL **Date/Time Received: 10/23/2018 11:15** **% Solids: 32**

PP Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
Acenaphthylene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
Anthracene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
Benzidine	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Benzo(a)anthracene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
Benzo(a)pyrene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
Benzo(b)fluoranthene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
Benzo(g,h,i)perylene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
Benzo(k)fluoranthene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
Butyl benzyl phthalate	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
bis(2-chloroethoxy) methane	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
bis(2-chloroethyl) ether	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
4-Bromophenylphenyl ether	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Di-n-butyl phthalate	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
4-Chloro-3-methyl phenol	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
2-Chloronaphthalene	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
2-Chlorophenol	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
4-Chlorophenyl Phenyl ether	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Chrysene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
Dibenz(a,h)Anthracene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
1,2-Dichlorobenzene	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
1,3-Dichlorobenzene	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
1,4-Dichlorobenzene	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
3,3-Dichlorobenzidine	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
2,4-Dichlorophenol	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Diethyl phthalate	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Dimethyl phthalate	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
2,4-Dimethylphenol	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 18102309

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point, MD
Project ID: 16993-0

Sample ID: P1-1 Wetlands **Date/Time Sampled: 10/22/2018 17:00** **PSS Sample ID: 18102309-001**
Matrix: SOIL **Date/Time Received: 10/23/2018 11:15** **% Solids: 32**

PP Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4,6-Dinitro-2-methyl phenol	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
2,4-Dinitrophenol	ND	ug/kg	1,000		1	10/29/18	10/29/18 22:32	1055
2,4-Dinitrotoluene	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
2,6-Dinitrotoluene	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
1,2-Diphenylhydrazine	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Fluoranthene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
Fluorene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
Hexachlorobenzene	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Hexachlorobutadiene	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Hexachlorocyclopentadiene	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Hexachloroethane	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
Isophorone	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Naphthalene	**71**	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
Nitrobenzene	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
2-Nitrophenol	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
4-Nitrophenol	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
N-Nitrosodimethylamine	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
N-Nitrosodi-n-propyl amine	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
N-Nitrosodiphenylamine	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Di-n-octyl phthalate	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Pentachlorophenol	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Phenanthrene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
Phenol	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
Pyrene	ND	ug/kg	52		1	10/29/18	10/29/18 22:32	1055
1,2,4-Trichlorobenzene	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055
2,4,6-Trichlorophenol	ND	ug/kg	520		1	10/29/18	10/29/18 22:32	1055

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No: 18102309

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.

Project Location: Sparrows Point, MD

Project ID: 16993-0

Sample ID: P1-1 Wetlands **Date/Time Sampled: 10/22/2018 17:00** **PSS Sample ID: 18102309-001**

Matrix: SOIL **Date/Time Received: 10/23/2018 11:15** **% Solids: 32**

Cyanide — Analytical Method: SW-846 9014 — Preparation Method: SW9010C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Cyanide, Total	**7.8**	mg/kg	0.82		4	10/26/18	10/26/18 16:35	1053

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No: 18102309

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point, MD
Project ID: 16993-0

Sample ID: Trip Blank **Date/Time Sampled: 10/23/2018 11:15** **PSS Sample ID: 18102309-002**
Matrix: WATER **Date/Time Received: 10/23/2018 11:15**

PP Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	20		1	10/25/18	10/25/18 12:50	1011
Acrylonitrile	ND	ug/L	10		1	10/25/18	10/25/18 12:50	1011
Benzene	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
Bromodichloromethane	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
Bromoform	ND	ug/L	5.0		1	10/25/18	10/25/18 12:50	1011
Bromomethane	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
Carbon tetrachloride	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
Chlorobenzene	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
Chloroethane	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
2-Chloroethyl Vinyl ether	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
Chloroform	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
Chloromethane	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
Dibromochloromethane	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
Ethylbenzene	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
Methylene chloride	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
Tetrachloroethene	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
Toluene	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011

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CERTIFICATE OF ANALYSIS

No: 18102309

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.

Project Location: Sparrows Point, MD

Project ID: 16993-0

Sample ID: Trip Blank **Date/Time Sampled: 10/23/2018 11:15** **PSS Sample ID: 18102309-002**

Matrix: WATER **Date/Time Received: 10/23/2018 11:15**

PP Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Trichloroethene	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	10/25/18	10/25/18 12:50	1011
Vinyl chloride	ND	ug/L	1.0		1	10/25/18	10/25/18 12:50	1011

Case Narrative Summary

Client Name: The Robert B. Balter Company

Project Name: Sparrows Point - Wetlands Lic.

Work Order Number(s): 18102309

Project ID: 16993-0

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for drinking water and non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Unless otherwise noted, surrogate recoveries outside of the acceptance criteria are most often the result of sample matrix interference and/or sample dilution.

Quality control samples that display a high bias will not be narrated when sample target compounds are not detected.

Sample Receipt:

Received Trip Blanks that were not on the COC. Logged in for 8260.

Analytical:

Cyanide

Batch: 158438

Matrix spike and/or matrix spike duplicate (MS/MSD) exceedances identified; see MS summary form.

Sample Preparation:

Total Petroleum Hydrocarbons - DRO

Preparation Batch: 73912

Laboratory control sample and/or laboratory control sample duplicate (LCS/LCSD) exceedances identified, matrix spike/ matrix spike duplicate samples meet LCS criteria; see LCS summary form.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

EPA 9071 B-Modified: Oil & Grease, Total Recovered

Analytical Data Package Information Summary

Work Order(s): 18102309
Report Prepared For: The Robert B. Balter Company, Owings Mills
Project Name: Sparrows Point - Wetlands Lic.
Project Manager: Matt Leone

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
EPA 9071 B-Modified	P1-1 Wetlands	Initial	18102309-001	1022	S	158517	158517	10/22/2018	10/31/2018 13:19	10/31/2018 13:19
	158517-1-BKS	BKS	158517-1-BKS	1022	S	158517	158517	--------	10/31/2018 13:19	10/31/2018 13:19
	158517-1-BLK	BLK	158517-1-BLK	1022	S	158517	158517	--------	10/31/2018 13:19	10/31/2018 13:19
	158517-1-BSD	BSD	158517-1-BSD	1022	S	158517	158517	--------	10/31/2018 13:19	10/31/2018 13:19
	S-2 S	MS	18103014-001 S	1022	S	158517	158517	10/30/2018	10/31/2018 13:19	10/31/2018 13:19
	S-2 SD	MSD	18103014-001 SD	1022	S	158517	158517	10/30/2018	10/31/2018 13:19	10/31/2018 13:19
SM2540G	P1-1 Wetlands	Initial	18102309-001	1061	S	158339	158339	10/22/2018	10/24/2018 14:38	10/24/2018 14:38
SW-846 6020 A	P1-1 Wetlands	Initial	18102309-001	1051	S	73877	158412	10/22/2018	10/25/2018 10:12	10/25/2018 17:35
	73877-1-BKS	BKS	73877-1-BKS	1051	S	73877	158412	--------	10/25/2018 10:12	10/25/2018 17:12
	73877-1-BLK	BLK	73877-1-BLK	1051	S	73877	158412	--------	10/25/2018 10:12	10/25/2018 17:07
	P1-1 Wetlands S	MS	18102309-001 S	1051	S	73877	158412	10/22/2018	10/25/2018 10:12	10/25/2018 17:40
	P1-1 Wetlands SD	MSD	18102309-001 SD	1051	S	73877	158412	10/22/2018	10/25/2018 10:12	10/25/2018 17:45
	73877-1-BKS	Reanalysis	73877-1-BKS	1051	S	73877	158449	--------	10/25/2018 10:12	10/26/2018 16:59
	P1-1 Wetlands	Reanalysis	18102309-001	1051	S	73877	158449	10/22/2018	10/25/2018 10:12	10/26/2018 17:04
SW-846 7196 A	P1-1 Wetlands	Initial	18102309-001	1053	S	73843	158337	10/22/2018	10/23/2018 13:59	10/24/2018 13:51
	73843-1-BKS	BKS	73843-1-BKS	1053	S	73843	158337	--------	10/23/2018 13:59	10/24/2018 13:15
	73843-1-BLK	BLK	73843-1-BLK	1053	S	73843	158337	--------	10/23/2018 13:59	10/24/2018 13:13
	73843-1-BSD	BSD	73843-1-BSD	1053	S	73843	158337	--------	10/23/2018 13:59	10/24/2018 13:17
	12957-PE-A3 D	MD	18101819-002 D	1053	S	73843	158337	10/17/2018	10/23/2018 13:59	10/24/2018 13:25
	12957-PE-A3 S	MS	18101819-002 S	1053	S	73843	158337	10/17/2018	10/23/2018 13:59	10/24/2018 13:28
SW-846 8015 C	S-6 S	MS	18102521-006 S	1059	S	73912	158504	10/25/2018	10/26/2018 18:27	10/30/2018 14:14
	S-6 SD	MSD	18102521-006 SD	1059	S	73912	158504	10/25/2018	10/26/2018 18:27	10/30/2018 14:39
	P1-1 Wetlands	Initial	18102309-001	1059	S	73912	158505	10/22/2018	10/26/2018 18:27	10/30/2018 15:54
	73912-1-BKS	BKS	73912-1-BKS	1059	S	73912	158505	--------	10/26/2018 18:27	10/30/2018 14:14
	73912-1-BLK	BLK	73912-1-BLK	1059	S	73912	158505	--------	10/26/2018 18:27	10/30/2018 13:50
	73912-1-BSD	BSD	73912-1-BSD	1059	S	73912	158505	--------	10/26/2018 18:27	10/30/2018 14:39
SW-846 8015C	P1-1 Wetlands	Initial	18102309-001	1035	S	73879	158367	10/22/2018	10/25/2018 02:38	10/25/2018 09:15

Analytical Data Package Information Summary

Work Order(s): 18102309
Report Prepared For: The Robert B. Balter Company, Owings Mills
Project Name: Sparrows Point - Wetlands Lic.
Project Manager: Matt Leone

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8015C	73879-2-BKS	BKS	73879-2-BKS	1035	S	73879	158367	--------	10/25/2018 02:38	10/25/2018 05:11
	73879-2-BLK	BLK	73879-2-BLK	1035	S	73879	158367	--------	10/25/2018 02:38	10/25/2018 04:40
	GTA-7 (0-2) S	MS	18102413-001 S	1035	S	73879	158367	10/23/2018	10/25/2018 02:38	10/25/2018 13:19
	GTA-7 (0-2) SD	MSD	18102413-001 SD	1035	S	73879	158367	10/23/2018	10/25/2018 02:38	10/25/2018 13:50
SW-846 8082 A	P1-1 Wetlands	Initial	18102309-001	1029	S	73892	158485	10/22/2018	10/26/2018 09:57	10/29/2018 12:18
	73892-1-BKS	BKS	73892-1-BKS	1029	S	73892	158485	--------	10/26/2018 09:57	10/29/2018 10:25
	73892-1-BLK	BLK	73892-1-BLK	1029	S	73892	158485	--------	10/26/2018 09:57	10/29/2018 09:58
	73892-1-BSD	BSD	73892-1-BSD	1029	S	73892	158485	--------	10/26/2018 09:57	10/29/2018 10:54
	13358-GP110-12 S	MS	18102417-012 S	1029	S	73892	158485	10/23/2018	10/26/2018 09:57	10/29/2018 11:22
	13358-GP110-12 SD	MSD	18102417-012 SD	1029	S	73892	158485	10/23/2018	10/26/2018 09:57	10/29/2018 11:50
SW-846 8260 B	P1-1 Wetlands	Initial	18102309-001	1011	S	73862	158325	10/22/2018	10/23/2018 08:32	10/23/2018 15:00
	73862-1-BKS	BKS	73862-1-BKS	1011	S	73862	158325	--------	10/23/2018 08:32	10/23/2018 09:39
	73862-1-BLK	BLK	73862-1-BLK	1011	S	73862	158325	--------	10/23/2018 08:32	10/23/2018 10:46
	GTA - 8 (12-13) S	MS	18101919-022 S	1011	S	73862	158325	10/17/2018	10/23/2018 08:32	10/23/2018 13:10
	GTA - 8 (12-13) SD	MSD	18101919-022 SD	1011	S	73862	158325	10/17/2018	10/23/2018 08:32	10/23/2018 13:32
	Trip Blank	Initial	18102309-002	1011	W	73894	158398	10/23/2018	10/25/2018 07:54	10/25/2018 12:50
	73894-1-BKS	BKS	73894-1-BKS	1011	W	73894	158398	--------	10/25/2018 07:54	10/25/2018 08:57
	73894-1-BLK	BLK	73894-1-BLK	1011	W	73894	158398	--------	10/25/2018 07:54	10/25/2018 09:39
	GTA-7GW S	MS	18102412-001 S	1011	W	73894	158398	10/23/2018	10/25/2018 07:54	10/25/2018 15:16
	GTA-7GW SD	MSD	18102412-001 SD	1011	W	73894	158398	10/23/2018	10/25/2018 07:54	10/25/2018 15:37
SW-846 8270 C	P1-1 Wetlands	Initial	18102309-001	1055	S	73919	158480	10/22/2018	10/29/2018 09:17	10/29/2018 22:32
	73919-1-BKS	BKS	73919-1-BKS	1055	S	73919	158480	--------	10/29/2018 09:17	10/29/2018 17:06
	73919-1-BLK	BLK	73919-1-BLK	1055	S	73919	158480	--------	10/29/2018 09:17	10/29/2018 16:38
	73919-1-BSD	BSD	73919-1-BSD	1055	S	73919	158480	--------	10/29/2018 09:17	10/29/2018 17:35
	12957-PE-A3 S	MS	18101819-002 S	1055	S	73919	158480	10/17/2018	10/29/2018 09:17	10/29/2018 18:04
	12957-PE-A3 SD	MSD	18101819-002 SD	1055	S	73919	158480	10/17/2018	10/29/2018 09:17	10/29/2018 18:32
SW-846 9014	P1-1 Wetlands	Initial	18102309-001	1053	S	73899	158438	10/22/2018	10/26/2018 11:08	10/26/2018 16:35

Analytical Data Package Information Summary

Work Order(s): 18102309
Report Prepared For: The Robert B. Balter Company, Owings Mills
Project Name: Sparrows Point - Wetlands Lic.
Project Manager: Matt Leone

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 9014	73899-1-BKS	BKS	73899-1-BKS	1053	S	73899	158438	--------	10/26/2018 11:08	10/26/2018 15:54
	73899-1-BLK	BLK	73899-1-BLK	1053	S	73899	158438	--------	10/26/2018 11:08	10/26/2018 15:51
	73899-1-BSD	BSD	73899-1-BSD	1053	S	73899	158438	--------	10/26/2018 11:08	10/26/2018 15:57
	P1-1 Wetlands S	MS	18102309-001 S	1053	S	73899	158438	10/22/2018	10/26/2018 11:08	10/26/2018 16:38
	P1-1 Wetlands SD	MSD	18102309-001 SD	1053	S	73899	158438	10/22/2018	10/26/2018 11:08	10/26/2018 16:41

PHASE SEPARATION SCIENCE, INC.

QC Summary 18102309

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 158485 Matrix: Soil Date Prep: 10/26/2018
PSS Sample ID: 18102309-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	103		61-150	%	10/29/18 12:18
Tetrachloro-m-xylene	85		42-142	%	10/29/18 12:18

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 158480 Matrix: Soil Date Prep: 10/29/2018
PSS Sample ID: 18102309-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	82		32-107	%	10/29/18 22:32
2-Fluorophenol	76		34-113	%	10/29/18 22:32
Nitrobenzene-d5	95		35-123	%	10/29/18 22:32
Phenol-d6	83		34-120	%	10/29/18 22:32
Terphenyl-D14	101		46-154	%	10/29/18 22:32
2,4,6-Tribromophenol	84		31-113	%	10/29/18 22:32

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 158505 Matrix: Soil Date Prep: 10/26/2018
PSS Sample ID: 18102309-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	49		34-133	%	10/30/18 15:54

Analytical Method: SW-846 8260 B Prep Method: SW5035
Seq Number: 158325 Matrix: Soil Date Prep: 10/23/2018
PSS Sample ID: 18102309-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	98		81-146	%	10/23/18 15:00
Dibromofluoromethane	98		89-120	%	10/23/18 15:00
Toluene-D8	104		86-116	%	10/23/18 15:00

Analytical Method: SW-846 8015C Prep Method: SW5035
Seq Number: 158367 Matrix: Soil Date Prep: 10/25/2018
PSS Sample ID: 18102309-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	110	*	81-105	%	10/25/18 09:15

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QC Summary 18102309

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8260 B Prep Method: SW5030B
Seq Number: 158398 Matrix: Water Date Prep: 10/25/2018
PSS Sample ID: 18102309-002

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	112	*	87-109	%	10/25/18 12:50
Dibromofluoromethane	104		93-111	%	10/25/18 12:50
Toluene-D8	102		91-109	%	10/25/18 12:50

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

PHASE SEPARATION SCIENCE, INC.

QC Summary 18102309

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: EPA 9071 B-Modified

Seq Number: 158517 Matrix: Solid
MB Sample Id: 158517-1-BLK LCS Sample Id: 158517-1-BKS LCSD Sample Id: 158517-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Oil & Grease, Total Recovered	<49.95	799.2	769.2	96	757.8	95	78-114	1	28	mg/kg	10/31/18 13:19	

Analytical Method: SW-846 9014

Prep Method: SW9010C
Seq Number: 158438 Matrix: Solid Date Prep: 10/26/18
MB Sample Id: 73899-1-BLK LCS Sample Id: 73899-1-BKS LCSD Sample Id: 73899-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Cyanide, Total	<0.06250	0.6250	0.6523	104	0.6596	107	85-115	1	25	mg/kg	10/26/18 15:54	

Analytical Method: SW-846 9014

Prep Method: SW9010C
Seq Number: 158438 Matrix: Soil Date Prep: 10/26/18
Parent Sample Id: 18102309-001 MS Sample Id: 18102309-001 S MSD Sample Id: 18102309-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Cyanide, Total	7.777	1.786	10.30	141	8.894	64	80-120	15	25	mg/kg	10/26/18 16:38	X

Analytical Method: SW-846 6020 A

Prep Method: SW3050B
Seq Number: 158412 Matrix: Solid Date Prep: 10/25/18
MB Sample Id: 73877-1-BLK LCS Sample Id: 73877-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Antimony	<2.292	18.34	17.95	98	80-120	mg/kg	10/25/18 17:12	
Arsenic	<0.4584	18.34	17.37	95	80-120	mg/kg	10/25/18 17:12	
Beryllium	<2.292	18.34	17.15	94	80-120	mg/kg	10/25/18 17:12	
Cadmium	<2.292	18.34	16.69	91	80-120	mg/kg	10/25/18 17:12	
Chromium	<2.292	18.34	18.24	99	80-120	mg/kg	10/25/18 17:12	
Copper	<2.292	18.34	18.64	102	80-120	mg/kg	10/25/18 17:12	
Lead	<2.292	18.34	16.30	89	80-120	mg/kg	10/25/18 17:12	
Mercury	<0.09168	0.4584	0.4057	89	80-120	mg/kg	10/25/18 17:12	
Nickel	<2.292	18.34	17.84	97	80-120	mg/kg	10/25/18 17:12	
Selenium	<2.292	18.34	17.87	97	80-120	mg/kg	10/25/18 17:12	
Silver	<2.292	18.34	18.18	99	80-120	mg/kg	10/25/18 17:12	
Thallium	<1.834	18.34	15.09	82	80-120	mg/kg	10/26/18 16:59	
Zinc	<9.168	91.68	84.58	92	80-120	mg/kg	10/25/18 17:12	

PHASE SEPARATION SCIENCE, INC.

QC Summary 18102309

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 6020 A Prep Method: SW3050B
Seq Number: 158412 Matrix: Soil Date Prep: 10/25/18
Parent Sample Id: 18102309-001 MS Sample Id: 18102309-001 S MSD Sample Id: 18102309-001 SD

Parameter	Parent Result	Spike Amount	MS Result	MS %Rec	MSD Result	MSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Antimony	<5.602	44.81	36.24	81	29.89	75	75-125	19	30	mg/kg	10/25/18 17:40	
Arsenic	31.19	44.81	65.95	78	57.94	67	75-125	13	30	mg/kg	10/25/18 17:40	X
Beryllium	<5.602	44.81	46.52	104	40.55	102	75-125	14	30	mg/kg	10/25/18 17:40	
Cadmium	<5.602	44.81	46.08	103	40.00	100	75-125	14	30	mg/kg	10/25/18 17:40	
Chromium	177.6	44.81	216.9	88	197.4	50	75-125	9	30	mg/kg	10/25/18 17:40	X
Copper	415.3	44.81	238.8	0	210.3	0	75-125	13	30	mg/kg	10/25/18 17:40	X
Lead	353.6	44.81	367.7	31	285.2	0	75-125	25	30	mg/kg	10/25/18 17:40	X
Mercury	0.9018	1.120	1.592	62	1.398	50	75-125	13	30	mg/kg	10/25/18 17:40	X
Nickel	62.00	44.81	102.5	90	93.26	78	75-125	9	30	mg/kg	10/25/18 17:40	
Selenium	<5.602	44.81	47.02	105	39.19	98	75-125	18	30	mg/kg	10/25/18 17:40	
Silver	<5.602	44.81	44.64	100	38.23	96	75-125	15	30	mg/kg	10/25/18 17:40	
Thallium	<4.481	44.81	34.71	77	31.16	78	75-125	11	20	mg/kg	10/25/18 17:40	
Zinc	1058	224.1	1091	15	960.8	0	75-125	13	30	mg/kg	10/25/18 17:40	X

Analytical Method: SW-846 7196 A Prep Method: SW3060A
Seq Number: 158337 Matrix: Solid Date Prep: 10/23/18
MB Sample Id: 73843-1-BLK LCS Sample Id: 73843-1-BKS LCSD Sample Id: 73843-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chromium, Hexavalent	<1.013	5.063	4.834	95	4.679	94	80-120	3	20	mg/kg	10/24/18 13:15	

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 158485 Matrix: Solid Date Prep: 10/26/18
MB Sample Id: 73892-1-BLK LCS Sample Id: 73892-1-BKS LCSD Sample Id: 73892-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.04975	0.4975	0.4475	90	0.4260	86	60-110	5	25	mg/kg	10/29/18 10:25	
PCB-1260	<0.04975	0.4975	0.4637	93	0.4687	95	60-98	1	25	mg/kg	10/29/18 10:25	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	112		112		116		61-150	%	10/29/18 10:25
Tetrachloro-m-xylene	87		97		89		42-142	%	10/29/18 10:25

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QC Summary 18102309

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8015 C Prep Method: SW3550C

Seq Number: 158505 Matrix: Solid Date Prep: 10/26/18

MB Sample Id: 73912-1-BLK LCS Sample Id: 73912-1-BKS LCSD Sample Id: 73912-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-DRO (Diesel Range Organics)	<9.993	33.31	28.43	85	14.66	45	54-123	64	25	mg/kg	10/30/18 14:14	LF

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
o-Terphenyl	57		74		41		34-133	%	10/30/18 14:14

PHASE SEPARATION SCIENCE, INC.

QC Summary 18102309

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8270 C Prep Method: SW3550C

Seq Number: 158480 Matrix: Solid Date Prep: 10/29/18

MB Sample Id: 73919-1-BLK LCS Sample Id: 73919-1-BKS LCSD Sample Id: 73919-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<16.64	1332	1110	83	1093	82	60-116	2	25	ug/kg	10/29/18 17:06	
Acenaphthylene	<16.64	1332	1190	89	1176	88	61-112	1	25	ug/kg	10/29/18 17:06	
Anthracene	<16.64	1332	1348	101	1336	100	66-115	1	25	ug/kg	10/29/18 17:06	
Benzidine	<166.4	1332	1574	118	1669	125	1-125	6	25	ug/kg	10/29/18 17:06	
Benzo(a)anthracene	<16.64	1332	1336	100	1312	99	71-113	2	25	ug/kg	10/29/18 17:06	
Benzo(a)pyrene	<16.64	1332	1408	106	1391	105	69-118	1	25	ug/kg	10/29/18 17:06	
Benzo(b)fluoranthene	<16.64	1332	1466	110	1401	105	65-126	5	25	ug/kg	10/29/18 17:06	
Benzo(g,h,i)perylene	<16.64	1332	1302	98	1272	96	69-112	2	25	ug/kg	10/29/18 17:06	
Benzo(k)fluoranthene	<16.64	1332	1175	88	1221	92	57-129	4	25	ug/kg	10/29/18 17:06	
Butyl benzyl phthalate	<166.4	1332	1377	103	1362	102	81-111	1	25	ug/kg	10/29/18 17:06	
bis(2-chloroethoxy) methane	<166.4	1332	1181	89	1190	89	56-119	1	25	ug/kg	10/29/18 17:06	
bis(2-chloroethyl) ether	<166.4	1332	1145	86	1134	85	55-107	1	25	ug/kg	10/29/18 17:06	
bis(2-chloroisopropyl) ether	<166.4	1332	1189	89	1153	87	44-103	3	25	ug/kg	10/29/18 17:06	
bis(2-ethylhexyl) phthalate	<166.4	1332	1347	101	1332	100	84-109	1	25	ug/kg	10/29/18 17:06	
4-Bromophenylphenyl ether	<166.4	1332	1310	98	1295	97	63-125	1	25	ug/kg	10/29/18 17:06	
Di-n-butyl phthalate	<166.4	1332	1435	108	1402	105	76-110	2	25	ug/kg	10/29/18 17:06	
4-Chloro-3-methyl phenol	<166.4	1332	1309	98	1326	100	74-119	1	25	ug/kg	10/29/18 17:06	
2-Chloronaphthalene	<166.4	1332	1177	88	1175	88	56-113	0	25	ug/kg	10/29/18 17:06	
2-Chlorophenol	<166.4	1332	1195	90	1160	87	59-113	3	25	ug/kg	10/29/18 17:06	
4-Chlorophenyl Phenyl ether	<166.4	1332	1132	85	1092	82	62-111	4	25	ug/kg	10/29/18 17:06	
Chrysene	<16.64	1332	1195	90	1215	91	72-114	2	25	ug/kg	10/29/18 17:06	
Dibenz(a,h)Anthracene	<16.64	1332	1379	104	1357	102	72-110	2	25	ug/kg	10/29/18 17:06	
1,2-Dichlorobenzene	<166.4	1332	1199	90	1159	87	57-114	3	25	ug/kg	10/29/18 17:06	
1,3-Dichlorobenzene	<166.4	1332	1205	90	1173	88	56-109	3	25	ug/kg	10/29/18 17:06	
1,4-Dichlorobenzene	<166.4	1332	1215	91	1195	90	57-113	2	25	ug/kg	10/29/18 17:06	
3,3-Dichlorobenzidine	<166.4	1332	1464	110	1461	110	66-141	0	25	ug/kg	10/29/18 17:06	
2,4-Dichlorophenol	<166.4	1332	1256	94	1268	95	68-118	1	25	ug/kg	10/29/18 17:06	
Diethyl phthalate	<166.4	1332	1225	92	1158	87	61-113	6	25	ug/kg	10/29/18 17:06	
Dimethyl phthalate	<166.4	1332	1195	90	1150	86	69-109	4	25	ug/kg	10/29/18 17:06	
2,4-Dimethylphenol	<166.4	1332	1561	117	1582	119	57-122	1	25	ug/kg	10/29/18 17:06	
4,6-Dinitro-2-methyl phenol	<166.4	1332	1413	106	1344	101	50-134	5	25	ug/kg	10/29/18 17:06	
2,4-Dinitrophenol	<332.9	1332	1262	95	1133	85	24-144	11	25	ug/kg	10/29/18 17:06	
2,4-Dinitrotoluene	<166.4	1332	1229	92	1139	86	61-124	8	25	ug/kg	10/29/18 17:06	
2,6-Dinitrotoluene	<166.4	1332	1171	88	1141	86	59-124	3	25	ug/kg	10/29/18 17:06	
1,2-Diphenylhydrazine	<166.4	1332	1498	112	1488	112	59-117	1	25	ug/kg	10/29/18 17:06	
Fluoranthene	<16.64	1332	1299	98	1278	96	69-119	2	25	ug/kg	10/29/18 17:06	
Fluorene	<16.64	1332	1124	84	1084	81	65-115	4	25	ug/kg	10/29/18 17:06	
Hexachlorobenzene	<166.4	1332	1425	107	1447	109	63-118	2	25	ug/kg	10/29/18 17:06	
Hexachlorobutadiene	<166.4	1332	1269	95	1270	95	55-120	0	25	ug/kg	10/29/18 17:06	
Hexachlorocyclopentadiene	<166.4	1332	1913	144	1853	139	29-138	3	25	ug/kg	10/29/18 17:06	H
Hexachloroethane	<166.4	1332	1232	92	1194	90	54-110	3	25	ug/kg	10/29/18 17:06	
Indeno(1,2,3-c,d)Pyrene	<16.64	1332	1389	104	1352	102	60-127	3	25	ug/kg	10/29/18 17:06	
Isophorone	<166.4	1332	1233	93	1275	96	57-116	3	25	ug/kg	10/29/18 17:06	
Naphthalene	<16.64	1332	1146	86	1153	87	59-108	1	25	ug/kg	10/29/18 17:06	
Nitrobenzene	<166.4	1332	1290	97	1273	96	53-110	1	25	ug/kg	10/29/18 17:06	
2-Nitrophenol	<166.4	1332	1289	97	1296	97	58-124	1	25	ug/kg	10/29/18 17:06	
4-Nitrophenol	<166.4	1332	1454	109	1390	104	51-116	5	25	ug/kg	10/29/18 17:06	
N-Nitrosodimethylamine	<166.4	1332	1172	88	1106	83	45-116	6	25	ug/kg	10/29/18 17:06	
N-Nitrosodi-n-propyl amine	<166.4	1332	1244	93	1245	94	60-98	0	25	ug/kg	10/29/18 17:06	
N-Nitrosodiphenylamine	<166.4	1332	1352	102	1352	102	65-111	0	25	ug/kg	10/29/18 17:06	
Di-n-octyl phthalate	<166.4	1332	1361	102	1353	102	69-120	1	25	ug/kg	10/29/18 17:06	

PHASE SEPARATION SCIENCE, INC.

QC Summary 18102309

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 158480 Matrix: Solid Date Prep: 10/29/18
MB Sample Id: 73919-1-BLK LCS Sample Id: 73919-1-BKS LCSD Sample Id: 73919-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Pentachlorophenol	<166.4	1332	1571	118	1529	115	56-124	3	25	ug/kg	10/29/18 17:06	
Phenanthrene	<16.64	1332	1236	93	1241	93	67-117	0	25	ug/kg	10/29/18 17:06	
Phenol	<166.4	1332	1224	92	1195	90	58-114	2	25	ug/kg	10/29/18 17:06	
Pyrene	<16.64	1332	1239	93	1214	91	77-111	2	25	ug/kg	10/29/18 17:06	
1,2,4-Trichlorobenzene	<166.4	1332	1170	88	1185	89	58-114	1	25	ug/kg	10/29/18 17:06	
2,4,6-Trichlorophenol	<166.4	1332	1190	89	1185	89	60-125	0	25	ug/kg	10/29/18 17:06	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	94		85		88		32-107	%	10/29/18 17:06
2-Fluorophenol	94		89		87		34-113	%	10/29/18 17:06
Nitrobenzene-d5	112		104		103		35-123	%	10/29/18 17:06
Phenol-d6	97		94		93		34-120	%	10/29/18 17:06
Terphenyl-D14	103		101		100		46-154	%	10/29/18 17:06
2,4,6-Tribromophenol	91		93		93		31-113	%	10/29/18 17:06

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 158367 Matrix: Solid Date Prep: 10/25/18
MB Sample Id: 73879-2-BLK LCS Sample Id: 73879-2-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
TPH-GRO (Gasoline Range Organics	<100	5000	5000	100	65-139	ug/kg	10/25/18 05:11	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	100		120	*	81-105	%	10/25/18 05:11

PHASE SEPARATION SCIENCE, INC.

QC Summary 18102309

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8260 B Prep Method: SW5030

Seq Number: 158325 Matrix: Solid Date Prep: 10/23/18

MB Sample Id: 73862-1-BLK LCS Sample Id: 73862-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acrolein	<21	64	54	84	62-141	ug/kg	10/23/18 09:39	
Acrylonitrile	<21	64	57	89	73-127	ug/kg	10/23/18 09:39	
Benzene	<5.3	64	65	102	79-131	ug/kg	10/23/18 09:39	
Bromodichloromethane	<5.3	64	63	98	81-128	ug/kg	10/23/18 09:39	
Bromoform	<5.3	64	62	97	75-128	ug/kg	10/23/18 09:39	
Bromomethane	<5.3	64	72	113	71-135	ug/kg	10/23/18 09:39	
Carbon tetrachloride	<5.3	64	80	125	73-130	ug/kg	10/23/18 09:39	
Chlorobenzene	<5.3	64	66	103	80-126	ug/kg	10/23/18 09:39	
Chloroethane	<5.3	64	72	113	77-133	ug/kg	10/23/18 09:39	
2-Chloroethyl Vinyl ether	<5.3	64	61	95	22-130	ug/kg	10/23/18 09:39	
Chloroform	<5.3	64	63	98	79-125	ug/kg	10/23/18 09:39	
Chloromethane	<5.3	64	68	106	73-127	ug/kg	10/23/18 09:39	
Dibromochloromethane	<5.3	64	58	91	82-123	ug/kg	10/23/18 09:39	
1,2-Dichlorobenzene	<5.3	64	60	94	64-125	ug/kg	10/23/18 09:39	
1,3-Dichlorobenzene	<5.3	64	61	95	65-125	ug/kg	10/23/18 09:39	
1,4-Dichlorobenzene	<5.3	64	60	94	81-122	ug/kg	10/23/18 09:39	
1,1-Dichloroethane	<5.3	64	68	106	80-128	ug/kg	10/23/18 09:39	
1,2-Dichloroethane	<5.3	64	58	91	81-124	ug/kg	10/23/18 09:39	
1,1-Dichloroethene	<5.3	64	76	119	75-124	ug/kg	10/23/18 09:39	
1,2-Dichloropropane	<5.3	64	60	94	77-134	ug/kg	10/23/18 09:39	
cis-1,3-Dichloropropene	<5.3	64	63	98	71-123	ug/kg	10/23/18 09:39	
trans-1,2-Dichloroethene	<5.3	64	73	114	79-127	ug/kg	10/23/18 09:39	
trans-1,3-Dichloropropene	<5.3	64	58	91	68-126	ug/kg	10/23/18 09:39	
Ethylbenzene	<5.3	64	69	108	77-123	ug/kg	10/23/18 09:39	
Methylene chloride	<5.3	64	59	92	75-117	ug/kg	10/23/18 09:39	
1,1,2,2-Tetrachloroethane	<5.3	64	61	95	76-130	ug/kg	10/23/18 09:39	
Tetrachloroethene	<5.3	64	80	125	72-129	ug/kg	10/23/18 09:39	
Toluene	<5.3	64	69	108	76-132	ug/kg	10/23/18 09:39	
1,2,4-Trichlorobenzene	<5.3	64	51	80	67-114	ug/kg	10/23/18 09:39	
1,1,1-Trichloroethane	<5.3	64	77	120	77-129	ug/kg	10/23/18 09:39	
1,1,2-Trichloroethane	<5.3	64	62	97	77-132	ug/kg	10/23/18 09:39	
Trichloroethene	<5.3	64	67	105	78-129	ug/kg	10/23/18 09:39	
Trichlorofluoromethane	<5.3	64	84	131	73-135	ug/kg	10/23/18 09:39	
Vinyl chloride	<5.3	64	85	133	76-138	ug/kg	10/23/18 09:39	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	102		100		81-146	%	10/23/18 09:39
Dibromofluoromethane	96		98		89-120	%	10/23/18 09:39
Toluene-D8	102		102		86-116	%	10/23/18 09:39

PHASE SEPARATION SCIENCE, INC.

QC Summary 18102309

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8260 B Prep Method: SW5030B

Seq Number: 158398 Matrix: Water Date Prep: 10/25/18

MB Sample Id: 73894-1-BLK LCS Sample Id: 73894-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acrolein	<20.00	50.00	63.97	128	47-152	ug/L	10/25/18 08:57	
Acrylonitrile	<10.00	50.00	52.50	105	66-132	ug/L	10/25/18 08:57	
Benzene	<1.000	50.00	47.66	95	87-123	ug/L	10/25/18 08:57	
Bromodichloromethane	<1.000	50.00	53.43	107	83-125	ug/L	10/25/18 08:57	
Bromoform	<5.000	50.00	51.13	102	72-129	ug/L	10/25/18 08:57	
Bromomethane	<1.000	50.00	47.67	95	45-167	ug/L	10/25/18 08:57	
Carbon tetrachloride	<1.000	50.00	50.86	102	79-133	ug/L	10/25/18 08:57	
Chlorobenzene	<1.000	50.00	47.72	95	87-127	ug/L	10/25/18 08:57	
Chloroethane	<1.000	50.00	46.72	93	81-122	ug/L	10/25/18 08:57	
2-Chloroethyl Vinyl ether	<1.000	50.00	56.92	114	55-109	ug/L	10/25/18 08:57	H
Chloroform	<1.000	50.00	49.11	98	76-129	ug/L	10/25/18 08:57	
Chloromethane	<1.000	50.00	53.67	107	59-121	ug/L	10/25/18 08:57	
Dibromochloromethane	<1.000	50.00	45.73	91	73-139	ug/L	10/25/18 08:57	
1,2-Dichlorobenzene	<1.000	50.00	49.96	100	82-129	ug/L	10/25/18 08:57	
1,3-Dichlorobenzene	<1.000	50.00	47.36	95	88-127	ug/L	10/25/18 08:57	
1,4-Dichlorobenzene	<1.000	50.00	46.46	93	84-129	ug/L	10/25/18 08:57	
1,1-Dichloroethane	<1.000	50.00	51.93	104	85-120	ug/L	10/25/18 08:57	
1,2-Dichloroethane	<1.000	50.00	52.02	104	86-125	ug/L	10/25/18 08:57	
1,1-Dichloroethene	<1.000	50.00	51.23	102	85-123	ug/L	10/25/18 08:57	
1,2-Dichloropropane	<1.000	50.00	51.02	102	83-120	ug/L	10/25/18 08:57	
cis-1,3-Dichloropropene	<1.000	50.00	55.05	110	81-125	ug/L	10/25/18 08:57	
trans-1,3-Dichloropropene	<1.000	50.00	47.34	95	79-121	ug/L	10/25/18 08:57	
trans-1,2-Dichloroethene	<1.000	50.00	47.73	95	87-120	ug/L	10/25/18 08:57	
Ethylbenzene	<1.000	50.00	53.42	107	82-128	ug/L	10/25/18 08:57	
Methylene chloride	<1.000	50.00	49.66	99	85-119	ug/L	10/25/18 08:57	
1,1,2,2-Tetrachloroethane	<1.000	50.00	52.36	105	79-131	ug/L	10/25/18 08:57	
Tetrachloroethene	<1.000	50.00	45.76	92	85-131	ug/L	10/25/18 08:57	
Toluene	<1.000	50.00	49.37	99	82-127	ug/L	10/25/18 08:57	
1,2,4-Trichlorobenzene	<1.000	50.00	49.31	99	78-123	ug/L	10/25/18 08:57	
1,1,1-Trichloroethane	<1.000	50.00	51.14	102	87-125	ug/L	10/25/18 08:57	
Trichloroethene	<1.000	50.00	46.60	93	87-124	ug/L	10/25/18 08:57	
1,1,2-Trichloroethane	<1.000	50.00	50.95	102	84-127	ug/L	10/25/18 08:57	
Trichlorofluoromethane	<5.000	50.00	52.33	105	85-130	ug/L	10/25/18 08:57	
Vinyl chloride	<1.000	50.00	57.76	116	66-133	ug/L	10/25/18 08:57	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	109		107		87-109	%	10/25/18 08:57
Dibromofluoromethane	102		103		93-111	%	10/25/18 08:57
Toluene-D8	99		99		91-109	%	10/25/18 08:57

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.
www.phaseonline.com
email: info@phaseonline.com

(1) *CLIENT: Robert B. Balter Co. *OFFICE LOC.: Owings Mills
*PROJECT MGR: Matt Leone *PHONE NO.: 410-363-1555
EMAIL: MLEONE@BALTERCO.COM FAX NO.:
*PROJECT NAME: Sparrows Point-Wetlands Lic. PROJECT NO.: 16993-0
SITE LOCATION: Sparrows Point, MD P.O. NO.:
SAMPLERS: DW CERT NO.:

PSS Work Order #: 18102309 PAGE 1 OF 1

Matrix Codes: **SW**=Surface Wtr **DW**=Drinking Wtr **GW**=Ground Wtr **WW**=Waste Wtr **O**=Oil **S**=Soil **WL**=Waste Liquid **WS**=Waste Solid **W**= Wipe

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	PP Metals (6020)	Hex. Chromium (EPA 7196A)	TPH DRO (8015)	TPH-GRO (8015)	Oil and Grease (EPA 9071B)	PP VOCs	PP SVOC	PCBs (EPA 8082)	Cyanide (EPA 9014)			Preservatives Used	* (3) Analysis/ Method Required	REMARKS
1	P1-1 Wetlands	10-22-18	9a-5p	S	8	C	✓	✓	✓	✓	✓	✓	✓	✓	✓					2 Jars + Terracore

(5)

Relinquished By: (1)	Date	Time	Received By:
[signature]	10/23	10:45	[signature]
Relinquished By: (2)	Date	Time	Received By:
[signature]	10/23	11:15	[signature]
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

*Requested Turnaround Time
- [x] 5-Day
- [ ] 3-Day
- [ ] 2-Day
- [ ] Next Day
- [ ] Emergency
- [ ] Other

Data Deliverables Required: Elec. Data Deliverable

# of Coolers: 1
Custody Seal: ABJ
Ice Present: PRES Temp: 4.9-5.8°C
Shipping Carrier: FE

Special Instructions:
Container count includes 5 vials and 1 % Solids Jar; 2 4-oz. containers included

6630 Baltimore National Pike • Route 40 West • Baltimore, Maryland 21228 • (410) 747-8770 • (800) 932-9047 • Fax (410) 788-8723

* = REQUIRED

Phase Separation Science, Inc

Sample Receipt Checklist

Work Order #	18102309	**Received By**	Thomas Wingate
Client Name	The Robert B. Balter Company	**Date Received**	10/23/2018 11:15:00 AM
Project Name	Sparrows Point - Wetlands Lic.	**Delivered By**	Trans Time Express
Project Number	16993-0	**Tracking No**	Not Applicable
Disposal Date	11/27/2018	**Logged In By**	Thomas Wingate

Shipping Container(s)

No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	5.8
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	Not Provided
COC agrees with sample labels?	Yes		N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Total No. of Samples Received 2 Total No. of Containers Received 9

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	Yes
Do VOA vials have zero headspace?		Yes
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Received Trip Blanks that were not on the COC. Logged in for 8260.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 10/23/2018

Thomas Wingate

PM Review and Approval: Amber J Confer Date: 10/23/2018

Amber Confer

Analytical Report for

The Robert B. Balter Company

Certificate of Analysis No.: 18102310

Project Manager: Matt Leone
Project Name : Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point
Project ID : 16993-0

November 1, 2018

Phase Separation Science, Inc.
6630 Baltimore National Pike
Baltimore, MD 21228
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PHASE SEPARATION SCIENCE, INC.

November 1, 2018

Matt Leone
The Robert B. Balter Company
18 Music Fair Road
Owings Mills, MD 21117

Reference: PSS Work Order(s) No: **18102310**
Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point
Project ID.: 16993-0

Dear Matt Leone :

This report includes the analytical results from the analyses performed on the samples received under the project name referenced above and identified with the Phase Separation Science (PSS) Work Order(s) numbered **18102310**.

All work reported herein has been performed in accordance with current NELAP standards, referenced methodologies, PSS Standard Operating Procedures and the PSS Quality Assurance Manual unless otherwise noted in the Case Narrative Summary. PSS is limited in liability to the actual cost of the sample analysis done.

PSS reserves the right to return any unused samples, extracts or related solutions. Otherwise, the samples are scheduled for disposal, without any further notice, on November 27, 2018, with the exception of air canisters which are cleaned immediately following analysis. This includes any samples that were received with a request to be held but lacked a specific hold period. It is your responsibility to provide a written request defining a specific disposal date if additional storage is required. Upon receipt , the request will be acknowledged by PSS, thus extending the storage period.

This report shall not be reproduced except in full, without the written approval of an authorized PSS representative. A copy of this report will be retained by PSS for at least 5 years, after which time it will be disposed of without further notice, unless prior arrangements have been made.

We thank you for selecting Phase Separation Science, Inc. to serve your analytical needs. If you have any questions concerning this report, do not hesitate to contact us at 410-747-8770 or info@phaseonline.com.

Sincerely,

Dan Prucnal

Dan Prucnal
Laboratory Manager

Sample Summary

Client Name: The Robert B. Balter Company

Project Name: Sparrows Point - Wetlands Lic.

Work Order Number(s): 18102310

Project ID: 16993-0

The following samples were received under chain of custody by Phase Separation Science (PSS) on 10/23/2018 at 12:05 pm

Lab Sample Id	Sample Id	Matrix	Date/Time Collected
18102310-001	P1-2 Wetlands	SOIL	10/23/18 00:00
18102310-002	P1-3 Wetlands	SOIL	10/23/18 00:00
18102310-003	Trip Blank	WATER	10/23/18 12:05

Please reference the Chain of Custody and Sample Receipt Checklist for specific container counts and preservatives. Any sample conditions not in compliance with sample acceptance criteria are described in Case Narrative Summary.

Notes:

1. The presence of a common laboratory contaminant such as methylene chloride may be considered a possible laboratory artifact. Where observed, appropriate consideration of data should be taken.
2. Unless otherwise noted in the case narrative, results are reported on a dry weight basis with the exception of pH, flashpoint, moisture, and paint filter test.
3. Drinking water samples collected for the purpose of compliance with SDWA may not be suitable for their intended use unless collected by a certified sampler [COMAR 26.08.05.07.C.2].
4. The analyses of 1,2-dibromo-3-chloropropane (DBCP) and 1,2-dibromoethane (EDB) by EPA 524.2 and calcium, magnesium, sodium and iron by EPA 200.8 are not currently promulgated for use in testing to meet the Safe Drinking Water Act and as such cannot be used for compliance purposes. The listings of the current promulgated methods for testing in compliance with the Safe Drinking Water Act can be found in the 40 CFR part 141.1, for the primary drinking water contaminates, and part 141.3, for the secondary drinking water contaminates.
5. Sample prepared under EPA 3550C with concentrations greater than 20 mg/Kg should employ the microtip extraction procedure if required to meet data quality objectives.
6. The analysis of acrolein by EPA 624 must be analyzed within three days of sampling unless pH is adjusted to 4-5 units [40 CFR part 136.3(e)].
7. Method 180.1, The Determination of Turbidity by Nephelometry, recommends samples over 40 NTU be diluted until the turbidity falls below 40 units. Routine samples over 40 NTU may not be diluted as long as the data quality objectives are not affected.
8. Alkalinity results analyzed by EPA 310.2 that are reported by dilution are estimated and are not in compliance with method requirements.

Standard Flags/Abbreviations:

B	A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
C	Results Pending Final Confirmation.
E	The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
Fail	The result exceeds the regulatory level for Toxicity Characteristic (TCLP) as cited in 40 CFR 261.24 Table 1.
J	The target analyte was positively identified below the reporting limit but greater than the MDL.
MDL	This is the Laboratory Method Detection Limit which is equivalent to the Limit of Detection (LOD). The LOD is an estimate of the minimum amount of a substance that an analytical process can reliably detect. This value will remain constant across multiple similar instrumentation and among different analysts. An LOD is analyte and matrix specific.
ND	Not Detected at or above the reporting limit.
RL	PSS Reporting Limit.
U	Not detected.

Certifications:

NELAP Certifications: PA 68-03330, VA 460156
State Certifications: MD 179, WV 303
Regulated Soil Permit: P330-12-00268
NSWC USCG Accepted Laboratory
LDBE MWAA LD1997-0041-2015

OFFICES:
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BALTIMORE, MD 21228
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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 18102310

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point
Project ID: 16993-0

Sample ID: P1-2 Wetlands **Date/Time Sampled: 10/23/2018 00:00** **PSS Sample ID: 18102310-001**
Matrix: SOIL **Date/Time Received: 10/23/2018 12:05** **% Solids: 32**

Oil and Grease — Analytical Method: EPA 9071 B-Modified

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Oil & Grease, Total Recovered	ND	mg/kg	160		1	10/31/18	10/31/18 13:19	1022

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	7.0		1	10/25/18	10/25/18 17:58	1051
Arsenic	**22**	mg/kg	1.4		1	10/25/18	10/25/18 17:58	1051
Beryllium	ND	mg/kg	7.0		1	10/25/18	10/25/18 17:58	1051
Cadmium	ND	mg/kg	7.0		1	10/25/18	10/25/18 17:58	1051
Chromium	**130**	mg/kg	7.0		1	10/25/18	10/25/18 17:58	1051
Copper	**82**	mg/kg	7.0		1	10/25/18	10/25/18 17:58	1051
Lead	**110**	mg/kg	7.0		1	10/25/18	10/25/18 17:58	1051
Mercury	**0.37**	mg/kg	0.28		1	10/25/18	10/25/18 17:58	1051
Nickel	**59**	mg/kg	7.0		1	10/25/18	10/25/18 17:58	1051
Selenium	ND	mg/kg	7.0		1	10/25/18	10/25/18 17:58	1051
Silver	ND	mg/kg	7.0		1	10/25/18	10/25/18 17:58	1051
Thallium	ND	mg/kg	5.6		1	10/25/18	10/26/18 17:18	1051
Zinc	**430**	mg/kg	28		1	10/25/18	10/25/18 17:58	1051

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	3.1		1	10/23/18	10/24/18 13:54	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	31		1	10/26/18	10/29/18 13:31	1059

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 18102310

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.

Project Location: Sparrows Point

Project ID: 16993-0

Sample ID: P1-2 Wetlands **Date/Time Sampled: 10/23/2018 00:00** **PSS Sample ID: 18102310-001**

Matrix: SOIL **Date/Time Received: 10/23/2018 12:05** **% Solids: 32**

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	550		1	10/25/18	10/25/18 09:45	1035

Polychlorinated Biphenyls — Analytical Method: SW-846 8082 A — Preparation Method: SW3550C — Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.16		1	10/29/18	10/30/18 00:30	1029
PCB-1221	ND	mg/kg	0.16		1	10/29/18	10/30/18 00:30	1029
PCB-1232	ND	mg/kg	0.16		1	10/29/18	10/30/18 00:30	1029
PCB-1242	ND	mg/kg	0.16		1	10/29/18	10/30/18 00:30	1029
PCB-1248	ND	mg/kg	0.16		1	10/29/18	10/30/18 00:30	1029
PCB-1254	ND	mg/kg	0.16		1	10/29/18	10/30/18 00:30	1029
PCB-1260	ND	mg/kg	0.16		1	10/29/18	10/30/18 00:30	1029

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The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point
Project ID: 16993-0

Sample ID: P1-2 Wetlands **Date/Time Sampled: 10/23/2018 00:00** **PSS Sample ID: 18102310-001**
Matrix: SOIL **Date/Time Received: 10/23/2018 12:05** **% Solids: 32**

PP Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/kg	90		1	10/23/18	10/23/18 15:21	1011
Acrylonitrile	ND	ug/kg	90		1	10/23/18	10/23/18 15:21	1011
Benzene	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Bromodichloromethane	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Bromoform	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Bromomethane	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Carbon tetrachloride	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Chlorobenzene	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Chloroethane	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
2-Chloroethyl Vinyl ether	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Chloroform	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Chloromethane	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Dibromochloromethane	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
1,2-Dichlorobenzene	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
1,3-Dichlorobenzene	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
1,4-Dichlorobenzene	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
1,1-Dichloroethane	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
1,2-Dichloroethane	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
1,1-Dichloroethene	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
1,2-Dichloropropane	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
cis-1,3-Dichloropropene	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
trans-1,2-Dichloroethene	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
trans-1,3-Dichloropropene	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Ethylbenzene	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Methylene chloride	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Tetrachloroethene	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Toluene	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
1,2,4-Trichlorobenzene	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
1,1,1-Trichloroethane	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011

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CERTIFICATE OF ANALYSIS

No: 18102310

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point
Project ID: 16993-0

Sample ID: P1-2 Wetlands **Date/Time Sampled: 10/23/2018 00:00** **PSS Sample ID: 18102310-001**
Matrix: SOIL **Date/Time Received: 10/23/2018 12:05** **% Solids: 32**

PP Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,1,2-Trichloroethane	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Trichloroethene	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Trichlorofluoromethane	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011
Vinyl chloride	ND	ug/kg	22		1	10/23/18	10/23/18 15:21	1011

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November 1, 2018

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Project Location: Sparrows Point
Project ID: 16993-0

Sample ID: P1-2 Wetlands **Date/Time Sampled: 10/23/2018 00:00** **PSS Sample ID: 18102310-001**
Matrix: SOIL **Date/Time Received: 10/23/2018 12:05** **% Solids: 32**

PP Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
Acenaphthylene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
Anthracene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
Benzidine	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Benzo(a)anthracene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
Benzo(a)pyrene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
Benzo(b)fluoranthene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
Benzo(g,h,i)perylene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
Benzo(k)fluoranthene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
Butyl benzyl phthalate	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
bis(2-chloroethoxy) methane	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
bis(2-chloroethyl) ether	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
4-Bromophenylphenyl ether	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Di-n-butyl phthalate	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
4-Chloro-3-methyl phenol	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
2-Chloronaphthalene	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
2-Chlorophenol	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
4-Chlorophenyl Phenyl ether	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Chrysene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
Dibenz(a,h)Anthracene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
1,2-Dichlorobenzene	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
1,3-Dichlorobenzene	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
1,4-Dichlorobenzene	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
3,3-Dichlorobenzidine	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
2,4-Dichlorophenol	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Diethyl phthalate	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Dimethyl phthalate	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
2,4-Dimethylphenol	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055

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CERTIFICATE OF ANALYSIS

No: 18102310

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point
Project ID: 16993-0

Sample ID: P1-2 Wetlands **Date/Time Sampled: 10/23/2018 00:00** **PSS Sample ID: 18102310-001**
Matrix: SOIL **Date/Time Received: 10/23/2018 12:05** **% Solids: 32**

PP Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4,6-Dinitro-2-methyl phenol	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
2,4-Dinitrophenol	ND	ug/kg	1,000		1	10/29/18	10/29/18 23:00	1055
2,4-Dinitrotoluene	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
2,6-Dinitrotoluene	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
1,2-Diphenylhydrazine	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Fluoranthene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
Fluorene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
Hexachlorobenzene	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Hexachlorobutadiene	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Hexachlorocyclopentadiene	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Hexachloroethane	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
Isophorone	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Naphthalene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
Nitrobenzene	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
2-Nitrophenol	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
4-Nitrophenol	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
N-Nitrosodimethylamine	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
N-Nitrosodi-n-propyl amine	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
N-Nitrosodiphenylamine	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Di-n-octyl phthalate	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Pentachlorophenol	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Phenanthrene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
Phenol	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
Pyrene	ND	ug/kg	52		1	10/29/18	10/29/18 23:00	1055
1,2,4-Trichlorobenzene	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055
2,4,6-Trichlorophenol	ND	ug/kg	520		1	10/29/18	10/29/18 23:00	1055

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No: 18102310

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.

Project Location: Sparrows Point

Project ID: 16993-0

Sample ID: P1-2 Wetlands **Date/Time Sampled: 10/23/2018 00:00** **PSS Sample ID: 18102310-001**

Matrix: SOIL **Date/Time Received: 10/23/2018 12:05** **% Solids: 32**

Cyanide — Analytical Method: SW-846 9014 — Preparation Method: SW9010C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Cyanide, Total	**5.9**	mg/kg	0.36		2	10/26/18	10/26/18 16:09	1053

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November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point
Project ID: 16993-0

Sample ID: P1-3 Wetlands **Date/Time Sampled: 10/23/2018 00:00** **PSS Sample ID: 18102310-002**
Matrix: SOIL **Date/Time Received: 10/23/2018 12:05** **% Solids: 27**

Oil and Grease — Analytical Method: EPA 9071 B-Modified

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Oil & Grease, Total Recovered	ND	mg/kg	180		1	10/31/18	10/31/18 13:19	1022

PP Metals — Analytical Method: SW-846 6020 A — Preparation Method: 3050B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Antimony	ND	mg/kg	9.0		1	10/25/18	10/25/18 18:03	1051
Arsenic	**18**	mg/kg	1.8		1	10/25/18	10/25/18 18:03	1051
Beryllium	ND	mg/kg	9.0		1	10/25/18	10/25/18 18:03	1051
Cadmium	ND	mg/kg	9.0		1	10/25/18	10/25/18 18:03	1051
Chromium	**100**	mg/kg	9.0		1	10/25/18	10/25/18 18:03	1051
Copper	**64**	mg/kg	9.0		1	10/25/18	10/25/18 18:03	1051
Lead	**78**	mg/kg	9.0		1	10/25/18	10/25/18 18:03	1051
Mercury	ND	mg/kg	0.36		1	10/25/18	10/25/18 18:03	1051
Nickel	**51**	mg/kg	9.0		1	10/25/18	10/25/18 18:03	1051
Selenium	ND	mg/kg	9.0		1	10/25/18	10/25/18 18:03	1051
Silver	ND	mg/kg	9.0		1	10/25/18	10/25/18 18:03	1051
Thallium	ND	mg/kg	7.2		1	10/25/18	10/26/18 17:22	1051
Zinc	**350**	mg/kg	36		1	10/25/18	10/25/18 18:03	1051

Chromium, Hexavalent — Analytical Method: SW-846 7196 A — Preparation Method: SW3060A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Chromium, Hexavalent	ND	mg/kg	3.7		1	10/23/18	10/24/18 13:57	1053

Total Petroleum Hydrocarbons - DRO — Analytical Method: SW-846 8015 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-DRO (Diesel Range Organics)	ND	mg/kg	37		1	10/26/18	10/29/18 14:21	1059

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No: 18102310

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point
Project ID: 16993-0

Sample ID: P1-3 Wetlands **Date/Time Sampled: 10/23/2018 00:00** **PSS Sample ID: 18102310-002**
Matrix: SOIL **Date/Time Received: 10/23/2018 12:05** **% Solids: 27**

Total Petroleum Hydrocarbons-GRO — Analytical Method: SW-846 8015C — Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
TPH-GRO (Gasoline Range Organics)	ND	ug/kg	750		1	10/25/18	10/25/18 10:16	1035

Polychlorinated Biphenyls — Analytical Method: SW-846 8082 A — Preparation Method: SW3550C — Clean up Method: SW846 3665A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
PCB-1016	ND	mg/kg	0.18		1	10/29/18	10/30/18 00:58	1029
PCB-1221	ND	mg/kg	0.18		1	10/29/18	10/30/18 00:58	1029
PCB-1232	ND	mg/kg	0.18		1	10/29/18	10/30/18 00:58	1029
PCB-1242	ND	mg/kg	0.18		1	10/29/18	10/30/18 00:58	1029
PCB-1248	ND	mg/kg	0.18		1	10/29/18	10/30/18 00:58	1029
PCB-1254	ND	mg/kg	0.18		1	10/29/18	10/30/18 00:58	1029
PCB-1260	ND	mg/kg	0.18		1	10/29/18	10/30/18 00:58	1029

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November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point
Project ID: 16993-0

Sample ID: P1-3 Wetlands **Date/Time Sampled: 10/23/2018 00:00** **PSS Sample ID: 18102310-002**
Matrix: SOIL **Date/Time Received: 10/23/2018 12:05** **% Solids: 27**

PP Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/kg	45		1	10/23/18	10/23/18 15:42	1011
Acrylonitrile	ND	ug/kg	45		1	10/23/18	10/23/18 15:42	1011
Benzene	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Bromodichloromethane	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Bromoform	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Bromomethane	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Carbon tetrachloride	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Chlorobenzene	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Chloroethane	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
2-Chloroethyl Vinyl ether	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Chloroform	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Chloromethane	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Dibromochloromethane	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
1,2-Dichlorobenzene	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
1,3-Dichlorobenzene	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
1,4-Dichlorobenzene	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
1,1-Dichloroethane	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
1,2-Dichloroethane	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
1,1-Dichloroethene	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
1,2-Dichloropropane	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
cis-1,3-Dichloropropene	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
trans-1,2-Dichloroethene	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
trans-1,3-Dichloropropene	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Ethylbenzene	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Methylene chloride	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
1,1,2,2-Tetrachloroethane	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Tetrachloroethene	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Toluene	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
1,2,4-Trichlorobenzene	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
1,1,1-Trichloroethane	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 18102310

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point
Project ID: 16993-0

Sample ID: P1-3 Wetlands **Date/Time Sampled: 10/23/2018 00:00** **PSS Sample ID: 18102310-002**
Matrix: SOIL **Date/Time Received: 10/23/2018 12:05** **% Solids: 27**

PP Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5035A

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
1,1,2-Trichloroethane	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Trichloroethene	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Trichlorofluoromethane	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011
Vinyl chloride	ND	ug/kg	11		1	10/23/18	10/23/18 15:42	1011

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No: 18102310

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point
Project ID: 16993-0

Sample ID: P1-3 Wetlands **Date/Time Sampled: 10/23/2018 00:00** **PSS Sample ID: 18102310-002**
Matrix: SOIL **Date/Time Received: 10/23/2018 12:05** **% Solids: 27**

PP Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acenaphthene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
Acenaphthylene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
Anthracene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
Benzidine	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Benzo(a)anthracene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
Benzo(a)pyrene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
Benzo(b)fluoranthene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
Benzo(g,h,i)perylene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
Benzo(k)fluoranthene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
Butyl benzyl phthalate	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
bis(2-chloroethoxy) methane	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
bis(2-chloroethyl) ether	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
bis(2-chloroisopropyl) ether	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
bis(2-ethylhexyl) phthalate	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
4-Bromophenylphenyl ether	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Di-n-butyl phthalate	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
4-Chloro-3-methyl phenol	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
2-Chloronaphthalene	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
2-Chlorophenol	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
4-Chlorophenyl Phenyl ether	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Chrysene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
Dibenz(a,h)Anthracene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
1,2-Dichlorobenzene	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
1,3-Dichlorobenzene	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
1,4-Dichlorobenzene	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
3,3-Dichlorobenzidine	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
2,4-Dichlorophenol	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Diethyl phthalate	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Dimethyl phthalate	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
2,4-Dimethylphenol	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 18102310

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point
Project ID: 16993-0

Sample ID: P1-3 Wetlands **Date/Time Sampled: 10/23/2018 00:00** **PSS Sample ID: 18102310-002**
Matrix: SOIL **Date/Time Received: 10/23/2018 12:05** **% Solids: 27**

PP Semivolatile Organic Compounds — Analytical Method: SW-846 8270 C — Preparation Method: SW3550C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
4,6-Dinitro-2-methyl phenol	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
2,4-Dinitrophenol	ND	ug/kg	1,200		1	10/29/18	10/29/18 23:29	1055
2,4-Dinitrotoluene	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
2,6-Dinitrotoluene	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
1,2-Diphenylhydrazine	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Fluoranthene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
Fluorene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
Hexachlorobenzene	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Hexachlorobutadiene	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Hexachlorocyclopentadiene	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Hexachloroethane	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Indeno(1,2,3-c,d)Pyrene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
Isophorone	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Naphthalene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
Nitrobenzene	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
2-Nitrophenol	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
4-Nitrophenol	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
N-Nitrosodimethylamine	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
N-Nitrosodi-n-propyl amine	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
N-Nitrosodiphenylamine	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Di-n-octyl phthalate	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Pentachlorophenol	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Phenanthrene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
Phenol	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
Pyrene	ND	ug/kg	61		1	10/29/18	10/29/18 23:29	1055
1,2,4-Trichlorobenzene	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055
2,4,6-Trichlorophenol	ND	ug/kg	610		1	10/29/18	10/29/18 23:29	1055

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 18102310

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.

Project Location: Sparrows Point

Project ID: 16993-0

Sample ID: P1-3 Wetlands **Date/Time Sampled: 10/23/2018 00:00** **PSS Sample ID: 18102310-002**

Matrix: SOIL **Date/Time Received: 10/23/2018 12:05** **% Solids: 27**

Cyanide — Analytical Method: SW-846 9014 — Preparation Method: SW9010C

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Cyanide, Total	**5.6**	mg/kg	0.42		2	10/26/18	10/26/18 16:12	1053

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CERTIFICATE OF ANALYSIS

No: 18102310

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point
Project ID: 16993-0

Sample ID: Trip Blank **Date/Time Sampled: 10/23/2018 12:05** **PSS Sample ID: 18102310-003**
Matrix: WATER **Date/Time Received: 10/23/2018 12:05**

PP Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Acrolein	ND	ug/L	20		1	10/25/18	10/25/18 13:11	1011
Acrylonitrile	ND	ug/L	10		1	10/25/18	10/25/18 13:11	1011
Benzene	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
Bromodichloromethane	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
Bromoform	ND	ug/L	5.0		1	10/25/18	10/25/18 13:11	1011
Bromomethane	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
Carbon tetrachloride	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
Chlorobenzene	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
Chloroethane	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
2-Chloroethyl Vinyl ether	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
Chloroform	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
Chloromethane	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
Dibromochloromethane	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
1,2-Dichlorobenzene	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
1,3-Dichlorobenzene	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
1,4-Dichlorobenzene	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
1,1-Dichloroethane	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
1,2-Dichloroethane	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
1,1-Dichloroethene	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
1,2-Dichloropropane	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
cis-1,3-Dichloropropene	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
trans-1,3-Dichloropropene	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
trans-1,2-Dichloroethene	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
Ethylbenzene	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
Methylene chloride	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
1,1,2,2-Tetrachloroethane	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
Tetrachloroethene	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
Toluene	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
1,2,4-Trichlorobenzene	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
1,1,1-Trichloroethane	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011

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PHASE SEPARATION SCIENCE, INC.

CERTIFICATE OF ANALYSIS

No: 18102310

The Robert B. Balter Company, Owings Mills, MD

November 1, 2018

Project Name: Sparrows Point - Wetlands Lic.
Project Location: Sparrows Point
Project ID: 16993-0

Sample ID: Trip Blank **Date/Time Sampled: 10/23/2018 12:05** **PSS Sample ID: 18102310-003**
Matrix: WATER **Date/Time Received: 10/23/2018 12:05**

PP Volatile Organic Compounds — Analytical Method: SW-846 8260 B — Preparation Method: 5030B

	Result	Units	RL	Flag	Dil	Prepared	Analyzed	Analyst
Trichloroethene	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
1,1,2-Trichloroethane	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011
Trichlorofluoromethane	ND	ug/L	5.0		1	10/25/18	10/25/18 13:11	1011
Vinyl chloride	ND	ug/L	1.0		1	10/25/18	10/25/18 13:11	1011

Case Narrative Summary

Client Name: The Robert B. Balter Company

Project Name: Sparrows Point - Wetlands Lic.

Work Order Number(s): 18102310

Project ID: 16993-0

Any holding time exceedances, deviations from the method specifications, regulatory requirements or variations to the procedures outlined in the PSS Quality Assurance Manual are outlined below.

The analyses of chlorine, pH, dissolved oxygen, temperature and sulfite for drinking water and non-potable samples tested for compliance have a maximum holding time of 15 minutes. As such, all laboratory analyses for these analytes exceed holding times.

Matrix spike and matrix spike duplicate analyses may not be performed due to insufficient sample quantity. In these instances, a laboratory control sample and laboratory control sample duplicate are analyzed unless otherwise noted or specified in the method.

Unless otherwise noted, surrogate recoveries outside of the acceptance criteria are most often the result of sample matrix interference and/or sample dilution.

Quality control samples that display a high bias will not be narrated when sample target compounds are not detected.

Sample Receipt:

Received Trip Blanks that were not on the COC. Logged in for 8260.

NELAP accreditation was held for all analyses performed unless noted below. See www.phaseonline.com for complete PSS scope of accreditation.

EPA 9071 B-Modified: Oil & Grease, Total Recovered

Analytical Data Package Information Summary

Work Order(s): 18102310
Report Prepared For: The Robert B. Balter Company, Owings Mills
Project Name: Sparrows Point - Wetlands Lic.
Project Manager: Matt Leone

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
EPA 9071 B-Modified	P1-2 Wetlands	Initial	18102310-001	1022	S	158517	158517	10/23/2018	10/31/2018 13:19	10/31/2018 13:19
	P1-3 Wetlands	Initial	18102310-002	1022	S	158517	158517	10/23/2018	10/31/2018 13:19	10/31/2018 13:19
	158517-1-BKS	BKS	158517-1-BKS	1022	S	158517	158517	--------	10/31/2018 13:19	10/31/2018 13:19
	158517-1-BLK	BLK	158517-1-BLK	1022	S	158517	158517	--------	10/31/2018 13:19	10/31/2018 13:19
	158517-1-BSD	BSD	158517-1-BSD	1022	S	158517	158517	--------	10/31/2018 13:19	10/31/2018 13:19
	S-2 S	MS	18103014-001 S	1022	S	158517	158517	10/30/2018	10/31/2018 13:19	10/31/2018 13:19
	S-2 SD	MSD	18103014-001 SD	1022	S	158517	158517	10/30/2018	10/31/2018 13:19	10/31/2018 13:19
SM2540G	P1-2 Wetlands	Initial	18102310-001	1061	S	158339	158339	10/23/2018	10/24/2018 14:38	10/24/2018 14:38
	P1-3 Wetlands	Initial	18102310-002	1061	S	158339	158339	10/23/2018	10/24/2018 14:38	10/24/2018 14:38
SW-846 6020 A	P1-2 Wetlands	Initial	18102310-001	1051	S	73877	158412	10/23/2018	10/25/2018 10:12	10/25/2018 17:58
	P1-3 Wetlands	Initial	18102310-002	1051	S	73877	158412	10/23/2018	10/25/2018 10:12	10/25/2018 18:03
	73877-1-BKS	BKS	73877-1-BKS	1051	S	73877	158412	--------	10/25/2018 10:12	10/25/2018 17:12
	73877-1-BLK	BLK	73877-1-BLK	1051	S	73877	158412	--------	10/25/2018 10:12	10/25/2018 17:07
	P1-1 Wetlands S	MS	18102309-001 S	1051	S	73877	158412	10/22/2018	10/25/2018 10:12	10/25/2018 17:40
	P1-1 Wetlands SD	MSD	18102309-001 SD	1051	S	73877	158412	10/22/2018	10/25/2018 10:12	10/25/2018 17:45
	73877-1-BKS	Reanalysis	73877-1-BKS	1051	S	73877	158449	--------	10/25/2018 10:12	10/26/2018 16:59
	P1-2 Wetlands	Reanalysis	18102310-001	1051	S	73877	158449	10/23/2018	10/25/2018 10:12	10/26/2018 17:18
	P1-3 Wetlands	Reanalysis	18102310-002	1051	S	73877	158449	10/23/2018	10/25/2018 10:12	10/26/2018 17:22
SW-846 7196 A	P1-2 Wetlands	Initial	18102310-001	1053	S	73843	158337	10/23/2018	10/23/2018 13:59	10/24/2018 13:54
	P1-3 Wetlands	Initial	18102310-002	1053	S	73843	158337	10/23/2018	10/23/2018 13:59	10/24/2018 13:57
	73843-1-BKS	BKS	73843-1-BKS	1053	S	73843	158337	--------	10/23/2018 13:59	10/24/2018 13:15
	73843-1-BLK	BLK	73843-1-BLK	1053	S	73843	158337	--------	10/23/2018 13:59	10/24/2018 13:13
	73843-1-BSD	BSD	73843-1-BSD	1053	S	73843	158337	--------	10/23/2018 13:59	10/24/2018 13:17
	12957-PE-A3 D	MD	18101819-002 D	1053	S	73843	158337	10/17/2018	10/23/2018 13:59	10/24/2018 13:25
	12957-PE-A3 S	MS	18101819-002 S	1053	S	73843	158337	10/17/2018	10/23/2018 13:59	10/24/2018 13:28
SW-846 8015 C	73891-1-BKS	BKS	73891-1-BKS	1059	S	73891	158468	--------	10/26/2018 09:19	10/29/2018 11:51
	73891-1-BLK	BLK	73891-1-BLK	1059	S	73891	158468	--------	10/26/2018 09:19	10/29/2018 11:26

Analytical Data Package Information Summary

Work Order(s): 18102310
Report Prepared For: The Robert B. Balter Company, Owings Mills
Project Name: Sparrows Point - Wetlands Lic.
Project Manager: Matt Leone

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8015 C	73891-1-BSD	BSD	73891-1-BSD	1059	S	73891	158468	--------	10/26/2018 09:19	10/29/2018 12:16
	P1-2 Wetlands	Initial	18102310-001	1059	S	73891	158469	10/23/2018	10/26/2018 09:19	10/29/2018 13:31
	P1-3 Wetlands	Initial	18102310-002	1059	S	73891	158469	10/23/2018	10/26/2018 09:19	10/29/2018 14:21
	13358-GP102-15 S	MS	18102417-003 S	1059	S	73891	158469	10/23/2018	10/26/2018 09:19	10/29/2018 11:51
	13358-GP102-15 SD	MSD	18102417-003 SD	1059	S	73891	158469	10/23/2018	10/26/2018 09:19	10/29/2018 12:16
SW-846 8015C	P1-2 Wetlands	Initial	18102310-001	1035	S	73879	158367	10/23/2018	10/25/2018 02:38	10/25/2018 09:45
	P1-3 Wetlands	Initial	18102310-002	1035	S	73879	158367	10/23/2018	10/25/2018 02:38	10/25/2018 10:16
	73879-2-BKS	BKS	73879-2-BKS	1035	S	73879	158367	--------	10/25/2018 02:38	10/25/2018 05:11
	73879-2-BLK	BLK	73879-2-BLK	1035	S	73879	158367	--------	10/25/2018 02:38	10/25/2018 04:40
	GTA-7 (0-2) S	MS	18102413-001 S	1035	S	73879	158367	10/23/2018	10/25/2018 02:38	10/25/2018 13:19
	GTA-7 (0-2) SD	MSD	18102413-001 SD	1035	S	73879	158367	10/23/2018	10/25/2018 02:38	10/25/2018 13:50
SW-846 8082 A	P1-2 Wetlands	Initial	18102310-001	1029	S	73921	158487	10/23/2018	10/29/2018 09:58	10/30/2018 00:30
	P1-3 Wetlands	Initial	18102310-002	1029	S	73921	158487	10/23/2018	10/29/2018 09:58	10/30/2018 00:58
	73921-1-BKS	BKS	73921-1-BKS	1029	S	73921	158487	--------	10/29/2018 09:58	10/30/2018 06:36
	73921-1-BLK	BLK	73921-1-BLK	1029	S	73921	158487	--------	10/29/2018 09:58	10/30/2018 06:07
	73921-1-BSD	BSD	73921-1-BSD	1029	S	73921	158487	--------	10/29/2018 09:58	10/30/2018 07:03
	13118-Comp702-10/25 S	MS	18102611-001 S	1029	S	73921	158487	10/25/2018	10/29/2018 09:58	10/29/2018 23:35
	13118-Comp702-10/25 SD	MSD	18102611-001 SD	1029	S	73921	158487	10/25/2018	10/29/2018 09:58	10/30/2018 00:02
SW-846 8260 B	P1-2 Wetlands	Initial	18102310-001	1011	S	73862	158325	10/23/2018	10/23/2018 08:32	10/23/2018 15:21
	P1-3 Wetlands	Initial	18102310-002	1011	S	73862	158325	10/23/2018	10/23/2018 08:32	10/23/2018 15:42
	73862-1-BKS	BKS	73862-1-BKS	1011	S	73862	158325	--------	10/23/2018 08:32	10/23/2018 09:39
	73862-1-BLK	BLK	73862-1-BLK	1011	S	73862	158325	--------	10/23/2018 08:32	10/23/2018 10:46
	GTA - 8 (12-13) S	MS	18101919-022 S	1011	S	73862	158325	10/17/2018	10/23/2018 08:32	10/23/2018 13:10
	GTA - 8 (12-13) SD	MSD	18101919-022 SD	1011	S	73862	158325	10/17/2018	10/23/2018 08:32	10/23/2018 13:32
	Trip Blank	Initial	18102310-003	1011	W	73894	158398	10/23/2018	10/25/2018 07:54	10/25/2018 13:11
	73894-1-BKS	BKS	73894-1-BKS	1011	W	73894	158398	--------	10/25/2018 07:54	10/25/2018 08:57
	73894-1-BLK	BLK	73894-1-BLK	1011	W	73894	158398	--------	10/25/2018 07:54	10/25/2018 09:39

Analytical Data Package Information Summary

Work Order(s): 18102310
Report Prepared For: The Robert B. Balter Company, Owings Mills
Project Name: Sparrows Point - Wetlands Lic.
Project Manager: Matt Leone

Method	Client Sample Id	Analysis Type	Lab Sample Id	Analyst	Mtx	Prep Batch	Analytical Batch	Sampled	Prepared	Analyzed
SW-846 8260 B	GTA-7GW S	MS	18102412-001 S	1011	W	73894	158398	10/23/2018	10/25/2018 07:54	10/25/2018 15:16
	GTA-7GW SD	MSD	18102412-001 SD	1011	W	73894	158398	10/23/2018	10/25/2018 07:54	10/25/2018 15:37
SW-846 8270 C	P1-2 Wetlands	Initial	18102310-001	1055	S	73919	158480	10/23/2018	10/29/2018 09:17	10/29/2018 23:00
	P1-3 Wetlands	Initial	18102310-002	1055	S	73919	158480	10/23/2018	10/29/2018 09:17	10/29/2018 23:29
	73919-1-BKS	BKS	73919-1-BKS	1055	S	73919	158480	--------	10/29/2018 09:17	10/29/2018 17:06
	73919-1-BLK	BLK	73919-1-BLK	1055	S	73919	158480	--------	10/29/2018 09:17	10/29/2018 16:38
	73919-1-BSD	BSD	73919-1-BSD	1055	S	73919	158480	--------	10/29/2018 09:17	10/29/2018 17:35
	12957-PE-A3 S	MS	18101819-002 S	1055	S	73919	158480	10/17/2018	10/29/2018 09:17	10/29/2018 18:04
	12957-PE-A3 SD	MSD	18101819-002 SD	1055	S	73919	158480	10/17/2018	10/29/2018 09:17	10/29/2018 18:32
SW-846 9014	P1-2 Wetlands	Initial	18102310-001	1053	S	73899	158438	10/23/2018	10/26/2018 11:08	10/26/2018 16:09
	P1-3 Wetlands	Initial	18102310-002	1053	S	73899	158438	10/23/2018	10/26/2018 11:08	10/26/2018 16:12
	73899-1-BKS	BKS	73899-1-BKS	1053	S	73899	158438	--------	10/26/2018 11:08	10/26/2018 15:54
	73899-1-BLK	BLK	73899-1-BLK	1053	S	73899	158438	--------	10/26/2018 11:08	10/26/2018 15:51
	73899-1-BSD	BSD	73899-1-BSD	1053	S	73899	158438	--------	10/26/2018 11:08	10/26/2018 15:57
	P1-1 Wetlands S	MS	18102309-001 S	1053	S	73899	158438	10/22/2018	10/26/2018 11:08	10/26/2018 16:38
	P1-1 Wetlands SD	MSD	18102309-001 SD	1053	S	73899	158438	10/22/2018	10/26/2018 11:08	10/26/2018 16:41

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QC Summary 18102310

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 158487 Matrix: Soil Date Prep: 10/29/2018
PSS Sample ID: 18102310-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	105		61-150	%	10/30/18 00:30
Tetrachloro-m-xylene	67		42-142	%	10/30/18 00:30

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 158469 Matrix: Soil Date Prep: 10/26/2018
PSS Sample ID: 18102310-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	86		34-133	%	10/29/18 13:31

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 158480 Matrix: Soil Date Prep: 10/29/2018
PSS Sample ID: 18102310-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	81		32-107	%	10/29/18 23:00
2-Fluorophenol	75		34-113	%	10/29/18 23:00
Nitrobenzene-d5	94		35-123	%	10/29/18 23:00
Phenol-d6	82		34-120	%	10/29/18 23:00
Terphenyl-D14	104		46-154	%	10/29/18 23:00
2,4,6-Tribromophenol	84		31-113	%	10/29/18 23:00

Analytical Method: SW-846 8260 B Prep Method: SW5035
Seq Number: 158325 Matrix: Soil Date Prep: 10/23/2018
PSS Sample ID: 18102310-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	100		81-146	%	10/23/18 15:21
Dibromofluoromethane	98		89-120	%	10/23/18 15:21
Toluene-D8	106		86-116	%	10/23/18 15:21

Analytical Method: SW-846 8015C Prep Method: SW5035
Seq Number: 158367 Matrix: Soil Date Prep: 10/25/2018
PSS Sample ID: 18102310-001

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	110	*	81-105	%	10/25/18 09:45

PHASE SEPARATION SCIENCE, INC.

QC Summary 18102310

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 158487 Matrix: Soil Date Prep: 10/29/2018
PSS Sample ID: 18102310-002

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	106		61-150	%	10/30/18 00:58
Tetrachloro-m-xylene	65		42-142	%	10/30/18 00:58

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 158469 Matrix: Soil Date Prep: 10/26/2018
PSS Sample ID: 18102310-002

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
o-Terphenyl	85		34-133	%	10/29/18 14:21

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 158480 Matrix: Soil Date Prep: 10/29/2018
PSS Sample ID: 18102310-002

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	81		32-107	%	10/29/18 23:29
2-Fluorophenol	76		34-113	%	10/29/18 23:29
Nitrobenzene-d5	92		35-123	%	10/29/18 23:29
Phenol-d6	81		34-120	%	10/29/18 23:29
Terphenyl-D14	103		46-154	%	10/29/18 23:29
2,4,6-Tribromophenol	82		31-113	%	10/29/18 23:29

Analytical Method: SW-846 8260 B Prep Method: SW5035
Seq Number: 158325 Matrix: Soil Date Prep: 10/23/2018
PSS Sample ID: 18102310-002

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	108		81-146	%	10/23/18 15:42
Dibromofluoromethane	104		89-120	%	10/23/18 15:42
Toluene-D8	110		86-116	%	10/23/18 15:42

Analytical Method: SW-846 8015C Prep Method: SW5035
Seq Number: 158367 Matrix: Soil Date Prep: 10/25/2018
PSS Sample ID: 18102310-002

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	98		81-105	%	10/25/18 10:16

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QC Summary 18102310

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8260 B Prep Method: SW5030B
Seq Number: 158398 Matrix: Water Date Prep: 10/25/2018
PSS Sample ID: 18102310-003

Surrogate	%Rec	Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	109		87-109	%	10/25/18 13:11
Dibromofluoromethane	103		93-111	%	10/25/18 13:11
Toluene-D8	101		91-109	%	10/25/18 13:11

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

PHASE SEPARATION SCIENCE, INC.

QC Summary 18102310

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: EPA 9071 B-Modified

Seq Number: 158517 Matrix: Solid
MB Sample Id: 158517-1-BLK LCS Sample Id: 158517-1-BKS LCSD Sample Id: 158517-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Oil & Grease, Total Recovered	<49.95	799.2	769.2	96	757.8	95	78-114	1	28	mg/kg	10/31/18 13:19	

Analytical Method: SW-846 9014

Prep Method: SW9010C
Seq Number: 158438 Matrix: Solid Date Prep: 10/26/18
MB Sample Id: 73899-1-BLK LCS Sample Id: 73899-1-BKS LCSD Sample Id: 73899-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Cyanide, Total	<0.06250	0.6250	0.6523	104	0.6596	107	85-115	1	25	mg/kg	10/26/18 15:54	

Analytical Method: SW-846 6020 A

Prep Method: SW3050B
Seq Number: 158412 Matrix: Solid Date Prep: 10/25/18
MB Sample Id: 73877-1-BLK LCS Sample Id: 73877-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Antimony	<2.292	18.34	17.95	98	80-120	mg/kg	10/25/18 17:12	
Arsenic	<0.4584	18.34	17.37	95	80-120	mg/kg	10/25/18 17:12	
Beryllium	<2.292	18.34	17.15	94	80-120	mg/kg	10/25/18 17:12	
Cadmium	<2.292	18.34	16.69	91	80-120	mg/kg	10/25/18 17:12	
Chromium	<2.292	18.34	18.24	99	80-120	mg/kg	10/25/18 17:12	
Copper	<2.292	18.34	18.64	102	80-120	mg/kg	10/25/18 17:12	
Lead	<2.292	18.34	16.30	89	80-120	mg/kg	10/25/18 17:12	
Mercury	<0.09168	0.4584	0.4057	89	80-120	mg/kg	10/25/18 17:12	
Nickel	<2.292	18.34	17.84	97	80-120	mg/kg	10/25/18 17:12	
Selenium	<2.292	18.34	17.87	97	80-120	mg/kg	10/25/18 17:12	
Silver	<2.292	18.34	18.18	99	80-120	mg/kg	10/25/18 17:12	
Thallium	<1.834	18.34	15.09	82	80-120	mg/kg	10/26/18 16:59	
Zinc	<9.168	91.68	84.58	92	80-120	mg/kg	10/25/18 17:12	

Analytical Method: SW-846 7196 A

Prep Method: SW3060A
Seq Number: 158337 Matrix: Solid Date Prep: 10/23/18
MB Sample Id: 73843-1-BLK LCS Sample Id: 73843-1-BKS LCSD Sample Id: 73843-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Chromium, Hexavalent	<1.013	5.063	4.834	95	4.679	94	80-120	3	20	mg/kg	10/24/18 13:15	

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QC Summary 18102310

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8082 A Prep Method: SW3550C
Seq Number: 158487 Matrix: Solid Date Prep: 10/29/18
MB Sample Id: 73921-1-BLK LCS Sample Id: 73921-1-BKS LCSD Sample Id: 73921-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
PCB-1016	<0.04970	0.4970	0.3985	80	0.3753	75	60-110	6	25	mg/kg	10/30/18 06:36	
PCB-1260	<0.04970	0.4970	0.4369	88	0.4391	88	60-98	1	25	mg/kg	10/30/18 06:36	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
Decachlorobiphenyl	111		111		109		61-150	%	10/30/18 06:36
Tetrachloro-m-xylene	73		86		78		42-142	%	10/30/18 06:36

Analytical Method: SW-846 8015 C Prep Method: SW3550C
Seq Number: 158468 Matrix: Solid Date Prep: 10/26/18
MB Sample Id: 73891-1-BLK LCS Sample Id: 73891-1-BKS LCSD Sample Id: 73891-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
TPH-DRO (Diesel Range Organics)	<9.970	33.23	29.49	89	27.33	82	54-123	8	25	mg/kg	10/29/18 11:51	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
o-Terphenyl	64		75		76		34-133	%	10/29/18 11:51

PHASE SEPARATION SCIENCE, INC.

QC Summary 18102310

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8270 C Prep Method: SW3550C

Seq Number: 158480 Matrix: Solid Date Prep: 10/29/18

MB Sample Id: 73919-1-BLK LCS Sample Id: 73919-1-BKS LCSD Sample Id: 73919-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Acenaphthene	<16.64	1332	1110	83	1093	82	60-116	2	25	ug/kg	10/29/18 17:06	
Acenaphthylene	<16.64	1332	1190	89	1176	88	61-112	1	25	ug/kg	10/29/18 17:06	
Anthracene	<16.64	1332	1348	101	1336	100	66-115	1	25	ug/kg	10/29/18 17:06	
Benzidine	<166.4	1332	1574	118	1669	125	1-125	6	25	ug/kg	10/29/18 17:06	
Benzo(a)anthracene	<16.64	1332	1336	100	1312	99	71-113	2	25	ug/kg	10/29/18 17:06	
Benzo(a)pyrene	<16.64	1332	1408	106	1391	105	69-118	1	25	ug/kg	10/29/18 17:06	
Benzo(b)fluoranthene	<16.64	1332	1466	110	1401	105	65-126	5	25	ug/kg	10/29/18 17:06	
Benzo(g,h,i)perylene	<16.64	1332	1302	98	1272	96	69-112	2	25	ug/kg	10/29/18 17:06	
Benzo(k)fluoranthene	<16.64	1332	1175	88	1221	92	57-129	4	25	ug/kg	10/29/18 17:06	
Butyl benzyl phthalate	<166.4	1332	1377	103	1362	102	81-111	1	25	ug/kg	10/29/18 17:06	
bis(2-chloroethoxy) methane	<166.4	1332	1181	89	1190	89	56-119	1	25	ug/kg	10/29/18 17:06	
bis(2-chloroethyl) ether	<166.4	1332	1145	86	1134	85	55-107	1	25	ug/kg	10/29/18 17:06	
bis(2-chloroisopropyl) ether	<166.4	1332	1189	89	1153	87	44-103	3	25	ug/kg	10/29/18 17:06	
bis(2-ethylhexyl) phthalate	<166.4	1332	1347	101	1332	100	84-109	1	25	ug/kg	10/29/18 17:06	
4-Bromophenylphenyl ether	<166.4	1332	1310	98	1295	97	63-125	1	25	ug/kg	10/29/18 17:06	
Di-n-butyl phthalate	<166.4	1332	1435	108	1402	105	76-110	2	25	ug/kg	10/29/18 17:06	
4-Chloro-3-methyl phenol	<166.4	1332	1309	98	1326	100	74-119	1	25	ug/kg	10/29/18 17:06	
2-Chloronaphthalene	<166.4	1332	1177	88	1175	88	56-113	0	25	ug/kg	10/29/18 17:06	
2-Chlorophenol	<166.4	1332	1195	90	1160	87	59-113	3	25	ug/kg	10/29/18 17:06	
4-Chlorophenyl Phenyl ether	<166.4	1332	1132	85	1092	82	62-111	4	25	ug/kg	10/29/18 17:06	
Chrysene	<16.64	1332	1195	90	1215	91	72-114	2	25	ug/kg	10/29/18 17:06	
Dibenz(a,h)Anthracene	<16.64	1332	1379	104	1357	102	72-110	2	25	ug/kg	10/29/18 17:06	
1,2-Dichlorobenzene	<166.4	1332	1199	90	1159	87	57-114	3	25	ug/kg	10/29/18 17:06	
1,3-Dichlorobenzene	<166.4	1332	1205	90	1173	88	56-109	3	25	ug/kg	10/29/18 17:06	
1,4-Dichlorobenzene	<166.4	1332	1215	91	1195	90	57-113	2	25	ug/kg	10/29/18 17:06	
3,3-Dichlorobenzidine	<166.4	1332	1464	110	1461	110	66-141	0	25	ug/kg	10/29/18 17:06	
2,4-Dichlorophenol	<166.4	1332	1256	94	1268	95	68-118	1	25	ug/kg	10/29/18 17:06	
Diethyl phthalate	<166.4	1332	1225	92	1158	87	61-113	6	25	ug/kg	10/29/18 17:06	
Dimethyl phthalate	<166.4	1332	1195	90	1150	86	69-109	4	25	ug/kg	10/29/18 17:06	
2,4-Dimethylphenol	<166.4	1332	1561	117	1582	119	57-122	1	25	ug/kg	10/29/18 17:06	
4,6-Dinitro-2-methyl phenol	<166.4	1332	1413	106	1344	101	50-134	5	25	ug/kg	10/29/18 17:06	
2,4-Dinitrophenol	<332.9	1332	1262	95	1133	85	24-144	11	25	ug/kg	10/29/18 17:06	
2,4-Dinitrotoluene	<166.4	1332	1229	92	1139	86	61-124	8	25	ug/kg	10/29/18 17:06	
2,6-Dinitrotoluene	<166.4	1332	1171	88	1141	86	59-124	3	25	ug/kg	10/29/18 17:06	
1,2-Diphenylhydrazine	<166.4	1332	1498	112	1488	112	59-117	1	25	ug/kg	10/29/18 17:06	
Fluoranthene	<16.64	1332	1299	98	1278	96	69-119	2	25	ug/kg	10/29/18 17:06	
Fluorene	<16.64	1332	1124	84	1084	81	65-115	4	25	ug/kg	10/29/18 17:06	
Hexachlorobenzene	<166.4	1332	1425	107	1447	109	63-118	2	25	ug/kg	10/29/18 17:06	
Hexachlorobutadiene	<166.4	1332	1269	95	1270	95	55-120	0	25	ug/kg	10/29/18 17:06	
Hexachlorocyclopentadiene	<166.4	1332	1913	144	1853	139	29-138	3	25	ug/kg	10/29/18 17:06	H
Hexachloroethane	<166.4	1332	1232	92	1194	90	54-110	3	25	ug/kg	10/29/18 17:06	
Indeno(1,2,3-c,d)Pyrene	<16.64	1332	1389	104	1352	102	60-127	3	25	ug/kg	10/29/18 17:06	
Isophorone	<166.4	1332	1233	93	1275	96	57-116	3	25	ug/kg	10/29/18 17:06	
Naphthalene	<16.64	1332	1146	86	1153	87	59-108	1	25	ug/kg	10/29/18 17:06	
Nitrobenzene	<166.4	1332	1290	97	1273	96	53-110	1	25	ug/kg	10/29/18 17:06	
2-Nitrophenol	<166.4	1332	1289	97	1296	97	58-124	1	25	ug/kg	10/29/18 17:06	
4-Nitrophenol	<166.4	1332	1454	109	1390	104	51-116	5	25	ug/kg	10/29/18 17:06	
N-Nitrosodimethylamine	<166.4	1332	1172	88	1106	83	45-116	6	25	ug/kg	10/29/18 17:06	
N-Nitrosodi-n-propyl amine	<166.4	1332	1244	93	1245	94	60-98	0	25	ug/kg	10/29/18 17:06	
N-Nitrosodiphenylamine	<166.4	1332	1352	102	1352	102	65-111	0	25	ug/kg	10/29/18 17:06	
Di-n-octyl phthalate	<166.4	1332	1361	102	1353	102	69-120	1	25	ug/kg	10/29/18 17:06	

PHASE SEPARATION SCIENCE, INC.

QC Summary 18102310

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8270 C Prep Method: SW3550C
Seq Number: 158480 Matrix: Solid Date Prep: 10/29/18
MB Sample Id: 73919-1-BLK LCS Sample Id: 73919-1-BKS LCSD Sample Id: 73919-1-BSD

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	LCSD Result	LCSD %Rec	Limits	%RPD	RPD Limit	Units	Analysis Date	Flag
Pentachlorophenol	<166.4	1332	1571	118	1529	115	56-124	3	25	ug/kg	10/29/18 17:06	
Phenanthrene	<16.64	1332	1236	93	1241	93	67-117	0	25	ug/kg	10/29/18 17:06	
Phenol	<166.4	1332	1224	92	1195	90	58-114	2	25	ug/kg	10/29/18 17:06	
Pyrene	<16.64	1332	1239	93	1214	91	77-111	2	25	ug/kg	10/29/18 17:06	
1,2,4-Trichlorobenzene	<166.4	1332	1170	88	1185	89	58-114	1	25	ug/kg	10/29/18 17:06	
2,4,6-Trichlorophenol	<166.4	1332	1190	89	1185	89	60-125	0	25	ug/kg	10/29/18 17:06	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	LCSD Result	LCSD Flag	Limits	Units	Analysis Date
2-Fluorobiphenyl	94		85		88		32-107	%	10/29/18 17:06
2-Fluorophenol	94		89		87		34-113	%	10/29/18 17:06
Nitrobenzene-d5	112		104		103		35-123	%	10/29/18 17:06
Phenol-d6	97		94		93		34-120	%	10/29/18 17:06
Terphenyl-D14	103		101		100		46-154	%	10/29/18 17:06
2,4,6-Tribromophenol	91		93		93		31-113	%	10/29/18 17:06

Analytical Method: SW-846 8015C Prep Method: SW5030
Seq Number: 158367 Matrix: Solid Date Prep: 10/25/18
MB Sample Id: 73879-2-BLK LCS Sample Id: 73879-2-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
TPH-GRO (Gasoline Range Organics	<100	5000	5000	100	65-139	ug/kg	10/25/18 05:11	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
a,a,a-Trifluorotoluene	100		120	*	81-105	%	10/25/18 05:11

PHASE SEPARATION SCIENCE, INC.

QC Summary 18102310

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8260 B

Prep Method: SW5030

Seq Number: 158325 | Matrix: Solid | Date Prep: 10/23/18

MB Sample Id: 73862-1-BLK | LCS Sample Id: 73862-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acrolein	<21	64	54	84	62-141	ug/kg	10/23/18 09:39	
Acrylonitrile	<21	64	57	89	73-127	ug/kg	10/23/18 09:39	
Benzene	<5.3	64	65	102	79-131	ug/kg	10/23/18 09:39	
Bromodichloromethane	<5.3	64	63	98	81-128	ug/kg	10/23/18 09:39	
Bromoform	<5.3	64	62	97	75-128	ug/kg	10/23/18 09:39	
Bromomethane	<5.3	64	72	113	71-135	ug/kg	10/23/18 09:39	
Carbon tetrachloride	<5.3	64	80	125	73-130	ug/kg	10/23/18 09:39	
Chlorobenzene	<5.3	64	66	103	80-126	ug/kg	10/23/18 09:39	
Chloroethane	<5.3	64	72	113	77-133	ug/kg	10/23/18 09:39	
2-Chloroethyl Vinyl ether	<5.3	64	61	95	22-130	ug/kg	10/23/18 09:39	
Chloroform	<5.3	64	63	98	79-125	ug/kg	10/23/18 09:39	
Chloromethane	<5.3	64	68	106	73-127	ug/kg	10/23/18 09:39	
Dibromochloromethane	<5.3	64	58	91	82-123	ug/kg	10/23/18 09:39	
1,2-Dichlorobenzene	<5.3	64	60	94	64-125	ug/kg	10/23/18 09:39	
1,3-Dichlorobenzene	<5.3	64	61	95	65-125	ug/kg	10/23/18 09:39	
1,4-Dichlorobenzene	<5.3	64	60	94	81-122	ug/kg	10/23/18 09:39	
1,1-Dichloroethane	<5.3	64	68	106	80-128	ug/kg	10/23/18 09:39	
1,2-Dichloroethane	<5.3	64	58	91	81-124	ug/kg	10/23/18 09:39	
1,1-Dichloroethene	<5.3	64	76	119	75-124	ug/kg	10/23/18 09:39	
1,2-Dichloropropane	<5.3	64	60	94	77-134	ug/kg	10/23/18 09:39	
cis-1,3-Dichloropropene	<5.3	64	63	98	71-123	ug/kg	10/23/18 09:39	
trans-1,2-Dichloroethene	<5.3	64	73	114	79-127	ug/kg	10/23/18 09:39	
trans-1,3-Dichloropropene	<5.3	64	58	91	68-126	ug/kg	10/23/18 09:39	
Ethylbenzene	<5.3	64	69	108	77-123	ug/kg	10/23/18 09:39	
Methylene chloride	<5.3	64	59	92	75-117	ug/kg	10/23/18 09:39	
1,1,2,2-Tetrachloroethane	<5.3	64	61	95	76-130	ug/kg	10/23/18 09:39	
Tetrachloroethene	<5.3	64	80	125	72-129	ug/kg	10/23/18 09:39	
Toluene	<5.3	64	69	108	76-132	ug/kg	10/23/18 09:39	
1,2,4-Trichlorobenzene	<5.3	64	51	80	67-114	ug/kg	10/23/18 09:39	
1,1,1-Trichloroethane	<5.3	64	77	120	77-129	ug/kg	10/23/18 09:39	
1,1,2-Trichloroethane	<5.3	64	62	97	77-132	ug/kg	10/23/18 09:39	
Trichloroethene	<5.3	64	67	105	78-129	ug/kg	10/23/18 09:39	
Trichlorofluoromethane	<5.3	64	84	131	73-135	ug/kg	10/23/18 09:39	
Vinyl chloride	<5.3	64	85	133	76-138	ug/kg	10/23/18 09:39	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	102		100		81-146	%	10/23/18 09:39
Dibromofluoromethane	96		98		89-120	%	10/23/18 09:39
Toluene-D8	102		102		86-116	%	10/23/18 09:39

PHASE SEPARATION SCIENCE, INC.

QC Summary 18102310

The Robert B. Balter Company
Sparrows Point - Wetlands Lic.

Analytical Method: SW-846 8260 B Prep Method: SW5030B

Seq Number: 158398 Matrix: Water Date Prep: 10/25/18

MB Sample Id: 73894-1-BLK LCS Sample Id: 73894-1-BKS

Parameter	MB Result	Spike Amount	LCS Result	LCS %Rec	Limits	Units	Analysis Date	Flag
Acrolein	<20.00	50.00	63.97	128	47-152	ug/L	10/25/18 08:57	
Acrylonitrile	<10.00	50.00	52.50	105	66-132	ug/L	10/25/18 08:57	
Benzene	<1.000	50.00	47.66	95	87-123	ug/L	10/25/18 08:57	
Bromodichloromethane	<1.000	50.00	53.43	107	83-125	ug/L	10/25/18 08:57	
Bromoform	<5.000	50.00	51.13	102	72-129	ug/L	10/25/18 08:57	
Bromomethane	<1.000	50.00	47.67	95	45-167	ug/L	10/25/18 08:57	
Carbon tetrachloride	<1.000	50.00	50.86	102	79-133	ug/L	10/25/18 08:57	
Chlorobenzene	<1.000	50.00	47.72	95	87-127	ug/L	10/25/18 08:57	
Chloroethane	<1.000	50.00	46.72	93	81-122	ug/L	10/25/18 08:57	
2-Chloroethyl Vinyl ether	<1.000	50.00	56.92	114	55-109	ug/L	10/25/18 08:57	H
Chloroform	<1.000	50.00	49.11	98	76-129	ug/L	10/25/18 08:57	
Chloromethane	<1.000	50.00	53.67	107	59-121	ug/L	10/25/18 08:57	
Dibromochloromethane	<1.000	50.00	45.73	91	73-139	ug/L	10/25/18 08:57	
1,2-Dichlorobenzene	<1.000	50.00	49.96	100	82-129	ug/L	10/25/18 08:57	
1,3-Dichlorobenzene	<1.000	50.00	47.36	95	88-127	ug/L	10/25/18 08:57	
1,4-Dichlorobenzene	<1.000	50.00	46.46	93	84-129	ug/L	10/25/18 08:57	
1,1-Dichloroethane	<1.000	50.00	51.93	104	85-120	ug/L	10/25/18 08:57	
1,2-Dichloroethane	<1.000	50.00	52.02	104	86-125	ug/L	10/25/18 08:57	
1,1-Dichloroethene	<1.000	50.00	51.23	102	85-123	ug/L	10/25/18 08:57	
1,2-Dichloropropane	<1.000	50.00	51.02	102	83-120	ug/L	10/25/18 08:57	
cis-1,3-Dichloropropene	<1.000	50.00	55.05	110	81-125	ug/L	10/25/18 08:57	
trans-1,3-Dichloropropene	<1.000	50.00	47.34	95	79-121	ug/L	10/25/18 08:57	
trans-1,2-Dichloroethene	<1.000	50.00	47.73	95	87-120	ug/L	10/25/18 08:57	
Ethylbenzene	<1.000	50.00	53.42	107	82-128	ug/L	10/25/18 08:57	
Methylene chloride	<1.000	50.00	49.66	99	85-119	ug/L	10/25/18 08:57	
1,1,2,2-Tetrachloroethane	<1.000	50.00	52.36	105	79-131	ug/L	10/25/18 08:57	
Tetrachloroethene	<1.000	50.00	45.76	92	85-131	ug/L	10/25/18 08:57	
Toluene	<1.000	50.00	49.37	99	82-127	ug/L	10/25/18 08:57	
1,2,4-Trichlorobenzene	<1.000	50.00	49.31	99	78-123	ug/L	10/25/18 08:57	
1,1,1-Trichloroethane	<1.000	50.00	51.14	102	87-125	ug/L	10/25/18 08:57	
Trichloroethene	<1.000	50.00	46.60	93	87-124	ug/L	10/25/18 08:57	
1,1,2-Trichloroethane	<1.000	50.00	50.95	102	84-127	ug/L	10/25/18 08:57	
Trichlorofluoromethane	<5.000	50.00	52.33	105	85-130	ug/L	10/25/18 08:57	
Vinyl chloride	<1.000	50.00	57.76	116	66-133	ug/L	10/25/18 08:57	

Surrogate	MB %Rec	MB Flag	LCS Result	LCS Flag	Limits	Units	Analysis Date
4-Bromofluorobenzene	109		107		87-109	%	10/25/18 08:57
Dibromofluoromethane	102		103		93-111	%	10/25/18 08:57
Toluene-D8	99		99		91-109	%	10/25/18 08:57

F = RPD exceeded the laboratory control limits
X = Recovery of MS, MSD or both outside of QC Criteria
H= Recovery of BS,BSD or both exceeded the laboratory control limits
L = Recovery of BS,BSD or both below the laboratory control limits

SAMPLE CHAIN OF CUSTODY/AGREEMENT FORM

PHASE SEPARATION SCIENCE, INC.

www.phaseonline.com
email: info@phaseonline.com

(1) *CLIENT: Robert B. Balter Co. *OFFICE LOC.: Owings Mills
*PROJECT MGR: Matt Leone *PHONE NO.: 410-363-1555
EMAIL: MLEONE@BALTERCO.COM FAX NO.:
*PROJECT NAME: Sparrows Point-Wetlands Lic. PROJECT NO.: 16993-0
SITE LOCATION: Sparrows Point, MD P.O. NO.:
SAMPLERS: DW CERT NO.:

PSS Work Order #: 1810 2310 PAGE 1 OF 1

Matrix Codes: **SW**=Surface Wtr **DW**=Drinking Wtr **GW**=Ground Wtr **WW**=Waste Wtr **O**=Oil **S**=Soil **WL**=Waste Liquid **WS**=Waste Solid **W**= Wipe

(2)

LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX (See Codes)	No. CONTAINERS	SAMPLE TYPE C = COMP G = GRAB	PP Metals (6020)	Hex. Chromium (EPA 7196A)	TPH DRO (8015)	TPH-GRO (8015)	Oil and Grease (EPA 9071B)	PP VOCs	PP SVOC	PCBs (EPA 8082)	Cyanide (EPA 9014)			Preservative Used / * (3) Analysis/ Method Required / REMARKS
1	P1-2 Wetlands	10/23/18		S	8	C	✓	✓	✓	✓	✓	✓	✓	✓	✓			2 Jars + Terracore
2	P1-3 Wetlands	10/23/18		S	8	C	✓	✓	✓	✓	✓	✓	✓	✓	✓			2 Jars + Terracore

(5)

Relinquished By: (1)	Date 10/23/18	Time 1205	Received By:
Relinquished By: (2)	Date 10/23/18 12	Time	Received By:
Relinquished By: (3)	Date	Time	Received By:
Relinquished By: (4)	Date	Time	Received By:

(4)

*Requested Turnaround Time
■ 5-Day ☐ 3-Day ☐ 2-Day
☐ Next Day ☐ Emergency ☐ Other

# of Coolers: 1
Custody Seal: ABS
Ice Present: PRES Temp: 2.9°-6.1°C
Shipping Carrier: Client

Data Deliverables Required:
Elec. Data Deliverable

Special Instructions:
Container count includes 5 vials and 1 % Solids Jar; 2 4-oz. containers included

Phase Separation Science, Inc

Sample Receipt Checklist

Work Order #	18102310	**Received By**	Thomas Wingate
Client Name	The Robert B. Balter Company	**Date Received**	10/23/2018 12:05:00 PM
Project Name	Sparrows Point - Wetlands Lic.	**Delivered By**	Client
Project Number	16993-0	**Tracking No**	Not Applicable
Disposal Date	11/27/2018	**Logged In By**	Thomas Wingate

Shipping Container(s)

No. of Coolers 1

		Ice	Present
Custody Seal(s) Intact?	N/A	Temp (deg C)	6.1
Seal(s) Signed / Dated?	N/A	Temp Blank Present	No

Documentation

		Sampler Name	Not Provided
COC agrees with sample labels?	Yes		N/A
Chain of Custody	Yes		

Sample Container

		Custody Seal(s) Intact?	Not Applicable
Appropriate for Specified Analysis?	Yes	Seal(s) Signed / Dated	Not Applicable
Intact?	Yes		
Labeled and Labels Legible?	Yes		

Total No. of Samples Received 3 Total No. of Containers Received 17

Preservation

Total Metals	(pH<2)	N/A
Dissolved Metals, filtered within 15 minutes of collection	(pH<2)	N/A
Orthophosphorus, filtered within 15 minutes of collection		N/A
Cyanides	(pH>12)	N/A
Sulfide	(pH>9)	N/A
TOC, DOC (field filtered), COD, Phenols	(pH<2)	N/A
TOX, TKN, NH3, Total Phos	(pH<2)	N/A
VOC, BTEX (VOA Vials Rcvd Preserved)	(pH<2)	N/A
Do VOA vials have zero headspace?		N/A
624 VOC (Rcvd at least one unpreserved VOA vial)		N/A
524 VOC (Rcvd with trip blanks)	(pH<2)	N/A

Comments: (Any "No" response must be detailed in the comments section below.)

For any improper preservation conditions, list sample ID, preservative added (reagent ID number) below as well as documentation of any client notification as well as client instructions. Samples for pH, chlorine and dissolved oxygen should be analyzed as soon as possible, preferably in the field at the time of sampling. Samples which require thermal preservation shall be considered acceptable when received at a temperature above freezing to 6°C. Samples that are hand delivered on the day that they are collected may not meet these criteria but shall be considered acceptable if there is evidence that the chilling process has begun such as arrival on ice.

Received Trip Blanks that were not on the COC. Logged in for 8260.

Samples Inspected/Checklist Completed By: Thomas Wingate Date: 10/23/2018

Thomas Wingate

PM Review and Approval: Amber T Confer Date: 10/26/2018

Amber Confer